

# DELSU Journal of Management Sciences (DELJOMS)



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The mission of DELJOMS is to publish empirical research that tests, extends, or builds on theories and contributes to the advancement of Management practice in our world today. All empirical methods including, but not limited to, qualitative, quantitative, meta-analytic, and mixed methods are welcome. To be published in DELJOMS, the research must make strong empirical and theoretical contributions and the manuscript should highlight the relevance of those contributions to management practice. Authors should strive to produce original, insightful, interesting, important, and theoretically bold research that demonstrates a significant "value-added" contribution to the fields in the understanding of an issue or topic.

The Journal faced some challenges associated with producing quality and standards while ensuring the best global practices with high impact empirical research-based studies. However, we are willing to publish as many articles received that meets standards and quality with cutting edge research gap output. It's also imperative that our reputation is hinged on a resolute commitment to maintaining high academic excellence which is our premium goal. In this edition, we have carefully selected articles to provide the reader with an analytical mind in discerning management issues of relevance. As a journal, we, therefore, advice researchers whose articles could not be published for some structural or procedural defects to revise their work for re-submission because DELJOMS is willing to reassess for future publication were applicable.

Professor A. Mukoro PhD

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DELJOMS provides a forum for discussion and analysis of issues in Management and Social Sciences with the exchange of information between professionals, academics and the global business world. The Journal is committed to the research of the highest quality in adopting the best global practices.

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## Adoption of Separate Legal Entity Practices, Socio-Cultural Engagements and Small Business Growth Among Rural Entrepreneurs in Ethiopia-East Local Government Area, Delta State

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### Abstract

*This study investigates how rural small business entrepreneurs in Abraka rural settlement in Ethiopia-East local government Area, Delta State, adopt separate legal entity (SLE) principles, their socio-cultural engagement (SCE) and influence on small business growth (SBG). Using a survey of 150 purposively selected entrepreneurs, the study adopted descriptive survey design using a 32-item questionnaire. Three research questions were raised and three hypotheses were formulated to guide the study. Cronbach alpha reliability test of the instrument established consistency of  $\alpha=78$ ,  $\alpha=81$  and  $\alpha=83$  across all three variables used in the instrument. Correlational statistics using PPMC established  $r = 0.85$  at 0.05 significance between SCE and SBG. Regression test of hypotheses indicates that SLE directly and partially mediate the relationship between SCE and SBG with Sobel test at  $z = 10.006$ ,  $p < .001$  and bootstrap of 95% (confidence interval of 0.639 and 1.164). SLE was also found to moderate the relationship between SCE and SBG. The findings indicate that the rural small business owners have moderate knowledge of separate legal entity in running their business and at the same time reported considerable Socio-cultural engagements even as they are optimistic of future business growth. It was recommended among others, the need for targeted grassroots' education and policies that integrate legal understanding of financial management principles with socio-cultural realities to promote sustainable development of rural small enterprises.*

**Keywords:** rural, growth, legal, principles, socio-cultural, entrepreneurs

### Introduction

Micro and small enterprises occupy the largest proportion of the Medium, Small and Micro Enterprises (MSMEs) industries providing goods and services in Nigeria. Presently, the increasing number of unemployed youths in Nigeria and the "refugee effect" of unemployment (Audretsch, 2002), has resulted in creation of numerous micro and small businesses driven by survival instinct (Welter and Smallbone, 2011). Most of these businesses are owned by educated and uneducated individuals with considerable number of them lacking leadership and managerial skills necessary for survival of such businesses (Dzomonda and Fatoki, 2018). However, the failure rate of micro and small businesses generally in Nigeria is of worrisome magnitude which various researchers estimate at over 80 percent (Dzomonda & Fatoki, 2018).

Vast literature has explored mix of financial management skills and practices that variously impact working capital and financial operations of SMEs. However, it has been established that inadequate financial management skill has been one of the most critical factors contributing to micro and small business failure in Nigeria particularly, among the neophytes or nascent entrepreneurs in rural and sub-urban areas.

One critical factor often trivialized by researchers into causes of failure of micro and small businesses is that of conflict of interest between the proprietor and the venture

entity (ownership vs Control controversy). At the same time, while many small business owners, particularly young and inexperienced entrepreneurs grapple with finding equilibrium for managing known constraints in finance management, they often seem to be unaware or play down the entity or personality status of businesses. The problem is that many small business owners seem not to see the difference between personal money and business's money. This confusion often leads to poor financial decisions, reckless spending, or neglect of proper record-keeping. Conventionally, a business should be treated as a separate legal entity (SLE) personalised, having assets and liabilities. This doctrine was established in a famous court case of *Salomon v. Salomon* in 1897. However, in practice, especially in rural areas, many owners seem to be unaware, ignore or do not fully understand this principle as applicable even to the minutest businesses. As a result, small businesses in developing countries face many challenges because of the social, cultural, and institutional environment in which they operate.

To understand how these factors, affect business success, theories of Institutional Theory gives credence to the study. The Institutional Theory (Scott, 2014) explains that a business's behaviour does not anchor solely on making money but shaped by social norms, cultural habits, and government rules. For instance, in many small businesses,

social pressures like family responsibilities, community affiliation, and informal ways of funding influence how owners manage resources. In many rural settings, family and traditional obligations significantly influence business operations. These commitments can affect entrepreneurs' resource allocation pattern and decision-making involving financial priorities (Ojo & Akinrinade, 2018), which in some cases, often lead owners to mix personal money with business funds or lend money informally, which negates financial management principles proper financial record keeping. Economic hardships and socio-economic pressures compel entrepreneurs to focus on immediate survival rather than formal business considerations thereby side-tracking SLE doctrine (Adegbite & Akinboade, 2017) decreasing the chances of business growth or stability over time (Williams & Kadir, 2017).

From the foregoing, it becomes explicit that social and cultural pressures often push owners to blend personal and business finances, which can limit growth. Such cultural factors may either facilitate or hinder the application of formal financial management principles (Akinrinade & Ojo, 2019).

Considering the trio variables of the study, it is possible that keeping adopting SLE may mediate and/or moderate the effect of socio-cultural commitment on business growth pattern over time. Entrepreneurs that lack this knowledge might be more vulnerable to these pressures, which can hinder growth and sustainability; as evidenced in low and middle income countries such as Nigeria, where weak enforcement of rules coupled with strong family or religious obligations are common (Ogunleye & Akinyele, 2020).

Research indicates that formal education and targeted training significantly enhance entrepreneurs' understanding of legal concepts such as the Separate Legal Entity doctrine (Akinboade & Kinfack, 2017). Informally, entrepreneurs who participate in workshops or training programmes by observing peers, market interactions, and community practices may tend to demonstrate higher awareness, facilitating better compliance and application in financial management practices. This observational learning can also influence perception of relating to legal entity, although it may lead to misconceptions if not augmented with formal education (Ogunleye & Akinyele, 2020).

In addition, hands-on apprenticeship or internship experiences provide practical insights into legal and financial management practices; and are expected to exhibit a better grasp of the legal separation between personal and business assets, which can impact financial practices positively (Eze & Ifeanyi, 2021). However, most existing research has focused on how social and cultural influences lead to informal financial practices.

In all, the success of small businesses in developing countries depends not just on access to finance or markets. It relies heavily on how well owners understand and apply good financial practices while weaving through socio-cultural behaviours.

### **Measuring small business growth**

Understanding and measuring how small businesses grow involves looking at different signs of progress. Many

entrepreneurs including those in rural areas, see growth mainly through financial success, such as increased sales and profits. When a business makes more money and becomes more profitable, it feels like it is thriving. One important sign of growth is size of customer base. When a business attracts and retains more customers, it shows that it is expanding and gaining acceptance in the market. Entrepreneurs who know the importance of keeping personal and business affairs separate tend to manage customer relationships better. This understanding builds trust and loyalty, which can lead to more repeat business and referrals (Olawale & Ojo, 2020). Asset growth, which includes physical items like equipment and inventory as well as working capital management, is also a clear indicator of business growth. Entrepreneurs who are aware of basic financial principles are more likely to protect their assets and make smart investments thereby shielding their assets from liabilities and this helps in future expansion (Eze & Ifeanyi, 2021). Expansion that may also include increase in number of workers (Akinboade & Kinfack, 2017).

Most importantly are market expansion and competitiveness advantage which are signs that a business is succeeding. Proper financial management anchored on principles can improve their reputation and open doors to partnerships and new opportunities (Ogunleye & Akinyele, 2020) which makes it easier to grow beyond its initial market. Overall, having strong legal knowledge helps entrepreneurs not only grow their business but also feel good about the progress they are making.

### **Statement of Problem**

Despite the extensive literature on financial management among small and medium enterprise (SME) failure in Nigeria, there remains a significant gap in understanding how rural small scale entrepreneurs perceive and apply doctrine of a separate legal entity; which allows a business to be viewed as a distinct entity from its owner, can significantly impact financial decision-making and overall business sustainability (Akenova & Akinbami, 2018). However, most existing studies tend to focus on urban settings or larger firms, leaving rural entrepreneurs underexplored.

In rural areas, entrepreneurs often operate within strong cultural beliefs that influence their business practices (Ogunnaike, 2019). These cultural norms such as family exigencies, religious obligations, donations, personal lifestyle, and festivities can shape their understanding and application of legal frameworks. The level of awareness about the legal status of their businesses may determine how effectively they manage finances and sustain their operations (Ojo & Olayinka, 2020). Yet, little research has examined how these cultural and demographic variables interact with legal awareness in rural contexts, especially in Nigeria's diverse cultural landscape.

Addressing this gap is crucial because improving legal awareness and its integration into financial practices can lead to better business outcomes for rural entrepreneurs. Understanding the socio-cultural dynamics at play can help design targeted interventions that promote sustainable growth, reduce failure rates, and enhance economic development in rural communities.

## Research Question

1. To what extent are small business entrepreneurs adopt financial management practices that conform with doctrine of separate legal entity in their business operations
2. To what extent do small business entrepreneurs in rural area engage in socio-cultural commitments in the course of running their businesses.
3. How do small business entrepreneurs in rural area perceive growth of their businesses since start-up?

## Hypotheses

- H01:* There is no relationship between Socio-Cultural Engagements (SCE) of small business entrepreneurs and Small Business Growth (SBG). (SBG)
- H02:* Adopting Separate Legal Entity practices (SLE) does not mediate the relationship between Socio-Cultural Engagements (SCE) and Small Business Growth (SBG).
- H03:* Adopting Separate Legal Entity practices (SLE) does not moderate the relationship between Socio-Cultural Engagements (SCE) and Small Business Growth (SBG).

## Research Method

The study is undertaken in Ethiopie-East Local Government Council Area of Delta State specifically in Abraka, a fast growing rural settlement. Abraka the main campus the Delta State University. Ethiopie-East has a population of 200,792 (Census, 2006). Abraka town has a mixed population estimated at 79,963 (Census, 2006). and projected annual growth of 2.41% (SMEDAN, 2013). As University town having a population of indigenous and non-indigenous business owners attracted by the over 30,000 students and 5000 staff population of these

institutions that patronizes these diverse micro businesses. Small business units are categorized as commercial holdings (60%) service providers (25%, commercial agricultural farms (10%) and manufacturing enterprises (1%) others (4%). Abraka town has 82 small companies (SMEDAN, 2013) with larger number of informal micro businesses of various types including food, professional services. These characteristics informed the choice of this area for the study.

The population of the study comprised 150 small business owners purposively selected. The instrument was a survey-designed questionnaire constructed using 5-point Likert scale type, made up of four sessions. The validity was established by three resource persons in Measurement, Business Administration and Business Education. Four research assistants were trained and used in administering the instrument for a period of six weeks including period of informed consent and confidentiality allowed prior to administration of the instrument. Cronbach alpha coefficients for Independent Variable: Adoption of Separate Legal Entity principles – SLE,  $n=12$ ,  $\alpha=.78$ ; dependent variable 1: SCE,  $n=10$ ,  $\alpha=.81$  and dependent variable 2 - SBG ( $n=10$ ,  $\alpha=.83$ ) reliability was achieved. Regression statistic involving Baron and Kenny's (1986) 4 step statistics criteria and Sobel's (1982) test /bootstrap were used to test SLE mediation and moderation effects between SCE and SBG.

## Interpretation of results

**RQ1:** To what extent do small business entrepreneurs in rural areas adopt financial management practices that conform with doctrine of separate legal entity in their business operations

*Table 1:* Mean and Standard Deviation of small business entrepreneurs' responses to adoption financial management practices that conform with doctrine of separate legal entity in their business operations

| Question/Statement                                                                                            | $\bar{x}$ | $\sigma$ | Interpretation                                                                             |
|---------------------------------------------------------------------------------------------------------------|-----------|----------|--------------------------------------------------------------------------------------------|
| <b>RQ1: Awareness of Separate Legal Entity</b>                                                                |           |          |                                                                                            |
| 1. I understand the difference between owning a business and managing it.                                     | 3.64      | 1.19     | Moderate awareness; many understand the difference between owning and managing a business. |
| 2. I know that the business assets are not my personal property.                                              | 3.30      | 1.37     | Fairly high awareness that business assets are separate; some uncertainty remains.         |
| 3. I know that my personal debt is not the responsibility of the business.                                    | 3.30      | 1.35     | Similar to above; many recognize personal debt isn't business responsibility.              |
| 4. I maintain a separate bank account for my business transactions.                                           | 2.46      | 1.31     | Lower awareness; fewer maintain separate bank accounts consistently.                       |
| 5. I keep proper business records that are different from my personal records.                                | 2.83      | 1.34     | Moderate; some keep proper business records separately.                                    |
| 6. I avoid using business income directly for personal or family needs.                                       | 2.50      | 1.33     | Slightly lower; some tend to mix personal and business income.                             |
| 7. I know that mixing personal and business finances violates sound financial principles.                     | 2.83      | 1.34     | Moderate; awareness that mixing finances violates principles is mixed.                     |
| 8. I understand that every asset of the business does not belong to me personally.                            | 3.10      | 1.33     | Fairly good understanding that assets don't all belong personally.                         |
| 9. I became aware of the importance of the legal separation of business and owner through my education.       | 3.10      | 1.33     | Moderate; education influences awareness but not uniformly.                                |
| 10. My understanding of business management came from working with experienced business owners.               | 2.82      | 1.19     | Slightly lower; experience helps, but gaps remain.                                         |
| 11. I learned to separate business and personal roles by observing business owners when I was sales assistant | 2.79      | 1.36     | Lower; observing owners contributes but isn't universal.                                   |

|                                                                            |       |      |                                                    |
|----------------------------------------------------------------------------|-------|------|----------------------------------------------------|
| 12. I seek legal advice when making important decisions about my business. | 3.10  | 1.34 | Moderate; legal advice-seeking is somewhat common. |
|                                                                            | 35.77 |      |                                                    |

Source: Adoption of SLE survey, 2025.

The data indicates that while some owners have a good understanding of the legal separation between their personal and business affairs, there are notable gaps, especially in maintaining separate financial records and accounts. Items related to education and experience (items 9 and 10) show moderate awareness, suggesting that further education could improve understanding. The relatively lower mean scores on items like maintaining separate bank accounts (item 4) and observing business owners (item 11) suggest areas where awareness and

practices could be enhanced through targeted training or awareness campaigns.

RQ2: To what extent do small business entrepreneurs in rural area engage in socio-cultural commitments in the course of running their businesses.

*Table 2: Mean and Standard Deviation of small business entrepreneurs' responses to extent of engagement in socio-cultural engagements in the course of running their businesses.*

| RQ2                                                                                                                               | $\bar{x}$ | $\sigma$ | comment                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------|----------|---------------------------------------------------------------------------------------------------------|
| 1. Sometimes I use my business money to meet personal survival when my profit is not enough.                                      | 3.2       | 1.3      | Respondents moderately agree that personal survival influences business money use.                      |
| 2. I often use business funds to meet family needs (e.g., school fees, hospital bills).                                           | 2.8       | 1.4      | Many often use business funds for family needs, indicating strong socio-cultural ties.                  |
| 3. Family members expect me to use business resources for their personal issues.                                                  | 2.8       | 1.4      | Family expectations impact business resource allocation; moderate agreement.                            |
| 4. My business performance is sometimes affected by pressure from relatives.                                                      | 3.3       | 1.2      | Pressure from relatives sometimes affects business performance.                                         |
| 5. Supporting family obligations is very important to me, and I can't avoid taking from my business fund.                         | 3.4       | 1.3      | Supporting family obligations is a significant aspect of their socio-cultural commitments.              |
| 6. Most times, I use business funds to sponsor traditional ceremonies, weddings, funerals, etc based on my family/social position | 3.2       | 1.3      | Business funds are frequently used for traditional and social ceremonies.                               |
| 7. Community members, friends, and relatives expect credit transactions from me, and I do provide them.                           | 3.0       | 1.4      | Providing credit to community members is common, reflecting social expectations.                        |
| 8. Religious obligations influence me most time to spend business income on tithes, offerings, and donations                      | 3.1       | 1.4      | Religious obligations influence spending, but less strongly than family needs.                          |
| 9. Sometimes, in emergency, lack of access to other funds makes me use my business money for personal expenses.                   | 3.2       | 1.3      | Emergencies often lead to using business funds for personal expenses.                                   |
| 10. I regard my business money as my personal money.                                                                              | 3.0       | 1.3      | Viewing business money as personal funds is common among respondents.                                   |
| <b>Average response (approx.)</b>                                                                                                 | 3.2       | 1.3      | Overall, respondents tend to agree that socio-cultural commitments influence their business activities. |

Source: Adoption of SCE survey, 2025.

The average mean of around 3.20 indicates a tendency towards agreement, suggesting that socio-cultural obligations are a significant factor in small business entrepreneurs' decision-making. The standard deviations around 1.30 to 1.40 reflect variability in responses, with some entrepreneurs more strongly influenced than others. Items related to family and traditional obligations tend to have slightly higher means, emphasizing their importance.

The results suggest that small business entrepreneurs are substantially influenced by socio-cultural commitments,

often prioritizing family, community, and religious obligations over purely business considerations. This indicates that socio-cultural factors are integral to their operational decisions and financial management, which could impact business growth and sustainability.

RQ3: How do small business entrepreneurs in rural area perceive growth of their businesses since start-up?

*Table 3: Mean and Standard Deviation of small business entrepreneurs' responses to perceive growth/progress of their business*

| Perceived business growth since start-up                                              | $\bar{x}$ | $\sigma$ | comment                                                                    |
|---------------------------------------------------------------------------------------|-----------|----------|----------------------------------------------------------------------------|
| 1. My business was financially stable from the beginning.                             | 3.84      | 1.07     | Many respondents agree that their business had early financial stability.  |
| 2. My profit margin increases every year compared to the early years of the business. | 2.66      | 1.11     | Moderate agreement; profit growth is perceived but not universal.          |
| 3. I have been able to expand my business size over time.                             | 3.07      | 1.20     | Slightly above the neutral point, indicating moderate perceived expansion. |
| 4. The number of regular customers has grown.                                         | 3.05      | 1.04     | Perception of customer base growth is moderate among respondents.          |
| 5. My business now attracts customers outside the community.                          | 3.08      | 1.07     | Slightly positive perception of broader customer reach.                    |
| 6. I have increased my business shops, goods, and equipment.                          | 2.96      | 1.07     | Moderate growth in assets is perceived.                                    |
| 7. I now stock different kinds of products in my shops.                               | 2.84      | 1.00     | Respondents somewhat agree that product variety has increased.             |
| 8. I now have more sales assistants (apprentices) compared to when I started.         | 2.66      | 1.00     | Slightly positive perception of employing more staff.                      |
| 9. I am satisfied with the progress my business has made since start-up.              | 3.02      | 1.20     | Moderate satisfaction with business progress.                              |
| 10. I am confident my business will continue to grow.                                 | 3.10      | 1.00     | Respondents generally have confidence in future growth.                    |

Source: Adoption of SBG survey, 2025.

The responses indicate that small business entrepreneurs in rural areas generally perceive their business growth and progress as moderate. Many agree that they experienced initial financial stability and see signs of ongoing expansion, including increased customer base, assets, and product variety. Confidence in future growth is also relatively high. However, perceptions are not overwhelmingly strong, suggesting room for further development and support to enhance business growth perceptions.

### Discussion of findings

Analysing these responses reveals both strengths and gaps in their understanding and behaviour, which have important implications for policy and support programs aimed at fostering sustainable growth among rural entrepreneurs. Starting with financial management practices, the data shows that many entrepreneurs have some awareness of the importance of separating personal and business finances, but significant gaps remain. For instance, respondents generally understand the difference between owning and managing a business and recognize that business assets are not personal property. This aligns with earlier research by Nwankwo and Adebisi (2019), who emphasized that financial literacy is crucial for business sustainability. However, the lower average score on maintaining a separate bank account suggests that many entrepreneurs still mix personal and business funds, which can lead to financial confusion and increased risks. This finding supports the argument by Olawale and Ojo (2020), who noted that financial discipline and proper record-keeping are often lacking among small-scale entrepreneurs in developing countries. The moderate awareness about the legal aspects of business management indicates that while some education exists, there remains a need for targeted training programs to improve legal and financial literacy.

Furthermore, the responses related to awareness of legal separation through education and observing experienced

business owners suggest that practical exposure and formal education influence understanding but are not sufficient on their own. This gap identified in maintaining proper financial records and accounts highlight the importance of continuous training and mentorship, as suggested by Eze and Ifeanyi (2021). These authors argue that improving financial management practices among rural entrepreneurs can significantly enhance business performance and growth prospects.

Moving to socio-cultural commitments, the responses demonstrate that entrepreneurs in rural areas are deeply influenced by cultural and social obligations. The data shows that many entrepreneurs frequently use their business funds to meet family needs, support traditional ceremonies, and provide credit to community members. Items such as using business funds for family and community obligations scored high, indicating that socio-cultural ties heavily influence business decision-making. This aligns with earlier studies by Akinboade and Kinfack (2017), which found that in many rural communities, cultural and social obligations often take precedence over pure business considerations. These commitments can serve as both a source of social capital and a challenge, as they may divert resources away from business investment and growth. For example, supporting family and community obligations, though vital for social cohesion, may limit the capital available for reinvestment in the business, potentially constraining growth.

Religious obligations also play a role, with some entrepreneurs spending part of their income on religious activities. This finding supports the work of Ogunleye and Akinyele (2020), who highlighted how religious and cultural factors shape financial priorities in rural settings. The tendency of entrepreneurs to regard their business money as personal funds further underscores the influence of socio-cultural norms, which often blur the lines between personal and business finances.

Regarding perceptions of business growth, respondents generally view their progress as moderate. They report that their businesses were financially stable early on, and many have observed some expansion in customer base, assets, and product variety. The response patterns reveal that while entrepreneurs recognize signs of growth, their confidence remains cautious, with average scores around the mid-3s on a 5-point scale. This moderate perception aligns with earlier findings by Nwankwo and Adebisi (2019), who found that small business owners often perceive incremental progress rather than rapid growth, especially in rural contexts where challenges such as limited access to finance, markets, and skills persist.

Despite these moderate perceptions, the high confidence in future growth suggests optimism among entrepreneurs, which is a positive sign. However, the variability in responses indicates that many entrepreneurs might benefit from additional support, such as access to markets, financial services, and capacity building, to realize their growth potential fully. The findings support the idea that rural

entrepreneurs are resilient and optimistic but need targeted interventions to translate perceptions into tangible growth.

The study therefore, reveals a complex picture: entrepreneurs have a reasonable understanding of legal and financial principles, but practical gaps remain, especially in maintaining proper financial separation. Socio-cultural commitments significantly influence their business decisions, often to the detriment or benefit of growth, depending on how these obligations are managed. Their perceptions of progress are cautious but optimistic, emphasizing the need for supportive policies and training to bridge gaps in knowledge and practice. Future research could explore how specific interventions, such as financial literacy programs or cultural awareness campaigns, impact these entrepreneurs' practices and perceptions, ultimately enhancing their capacity for sustainable growth.

HO1: Socio-cultural engagements of small scale business entrepreneurs have no significant relationship with growth of the business

Table 4: Summary of PPMC between SCE and SBG

| N   | DF  | r-calculated | r-critical (p=0.05) | p-value | Decision                             |
|-----|-----|--------------|---------------------|---------|--------------------------------------|
| 150 | 148 | 0.85         | 0.196               | < 0.05  | Reject HO1: Significant relationship |

The correlation coefficient (r-calculated) is approximately 0.85, indicating a strong

positive relationship. The r-calculated > r-critical (0.196), reject the null hypothesis at 0.05 significance level. The p-value would be less than 0.05, confirming this decision.

HO2: Adopting SLE practices relating to doctrine of separate legal entity does not mediate the relationship between socio-cultural commitment and perceived business growth.

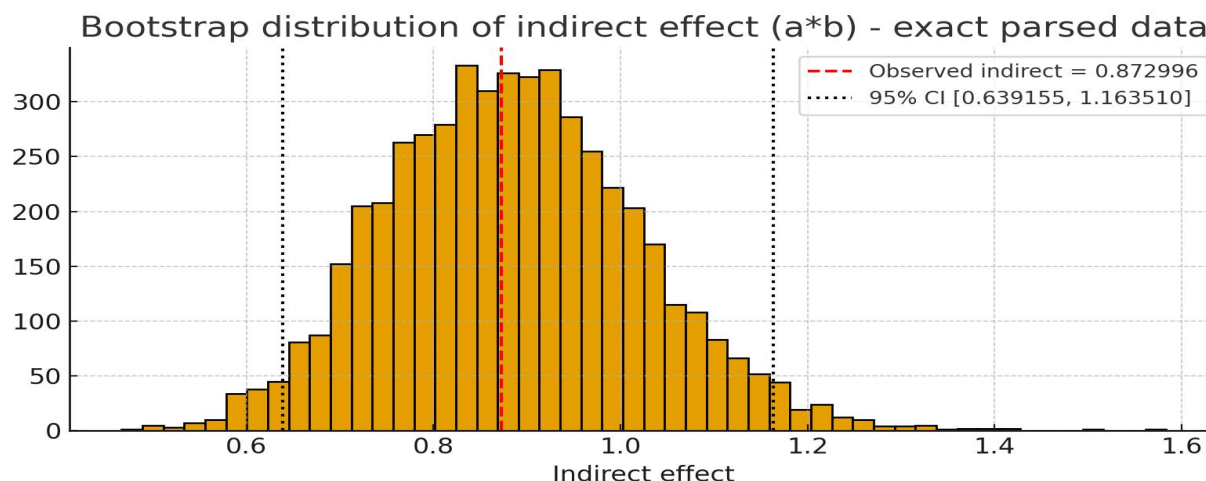


Figure 1: Mediation effect of SLE between SCE and SBG

The mediation analysis conducted in this study indicates that the adoption of the Separate Legal Entity (SLE) doctrine partially mediates the relationship between socio-cultural engagement and business growth. Initially, regression results demonstrated that socio-cultural engagement significantly predicts SLE adoption (Path a:  $b = 1.007$ ,  $SE = 0.013$ ,  $t(148) = 76.50$ ,  $p < .001$ ). This strong positive association suggests that entrepreneurs actively engaged in their social and cultural networks are more likely to adopt SLE principles.

Subsequently, when predicting business growth, SLE adoption also emerged as a significant predictor (Path b:  $b = 0.867$ ,  $SE = 0.086$ ,  $t(147) = 10.09$ ,  $p < .001$ ). At the same time, the direct effect of socio-cultural engagement on business growth remained significant but was reduced in magnitude ( $b = 0.227$ ,  $SE = 0.088$ ,  $t(147) = 2.59$ ,  $p = .011$ ). This reduction indicates that SLE adoption partially mediates the relationship between socio-cultural engagement and business growth. The total effect of socio-cultural engagement on business growth was significant ( $b = 1.100$ ,  $SE = 0.018$ ,  $t(148) = 61.65$ ,  $p < .001$ ).



The indirect effect, calculated as the product of paths a and b, was 0.873. Its significance was confirmed through the Sobel test ( $z = 10.006$ ,  $p < .001$ ) and bootstrap analysis with 5,000 resamples yielded a 95% confidence interval of 0.639 and 1.164, which does not include zero. These results robustly support the presence of mediation (Hayes, 2013).

One implication of the findings is that higher socio-cultural engagement enhances the likelihood of adopting SLE principles, which in turn promotes business growth; emphasizing the importance of social capital and entrepreneurial behaviour. Furthermore, the raw data indicated high correlations  $r = 0.95$  between socio-cultural engagement and SLE adoption, and  $r = 0.85$  between socio-cultural engagement and small business growth suggest strong relationships among these variables. Given these correlations, SLE adoption appears to be a significant mediator of the effect of socio-cultural engagement on business growth. Using Baron and Kenny's (1986) criteria and Sobel's (1982) test, the data indicates that including SLE in the regression model

substantially diminishes the direct effect of socio-cultural engagement on business growth, supporting the mediation hypothesis.

Specifically, the high correlation coefficients and the significant Sobel Z-value (7.89) that is well above the critical value of 1.96 at the 0.05 significance level, provide strong evidence that SLE adoption mediates the relationship between socio-cultural engagement and business growth. Consequently, the null hypothesis ( $H_0$ ) that SLE adoption does not mediate this relationship is rejected.

HO3: Adopting Separate Legal Entity practices does not moderate the relationship between socio-cultural commitment and perceived business growth.

Regression Results: Moderation Analysis

Model:  $Y_2 = b_0 + b_1(Y_{1c}) + b_2(X_c) + b_3(Y_{1c} \times X_c) + e$

Moderator:  $X$  = Separate Legal Entity Adoption (SLE)

Independent:  $Y_1$  = Socio-Cultural Engagement (SCE)

Dependent:  $Y_2$  = Small Business Growth (SBG)

Table 5: Regression Coefficients

| Predictor | B      | SE    | t      | p      | 95% CI          |
|-----------|--------|-------|--------|--------|-----------------|
| Const     | 3.102  | 0.005 | 658.74 | 0.0000 | [3.093, 3.112]  |
| $Y_{1c}$  | 0.556  | 0.078 | 7.09   | 0.0000 | [0.401, 0.711]  |
| $X_c$     | 0.410  | 0.099 | 4.16   | 0.0001 | [0.215, 0.605]  |
| Int       | -1.006 | 0.763 | -1.32  | 0.1896 | [-2.513, 0.502] |

Model Fit:  $R^2 = 0.6605$ , Adjusted  $R^2 = 0.6535$

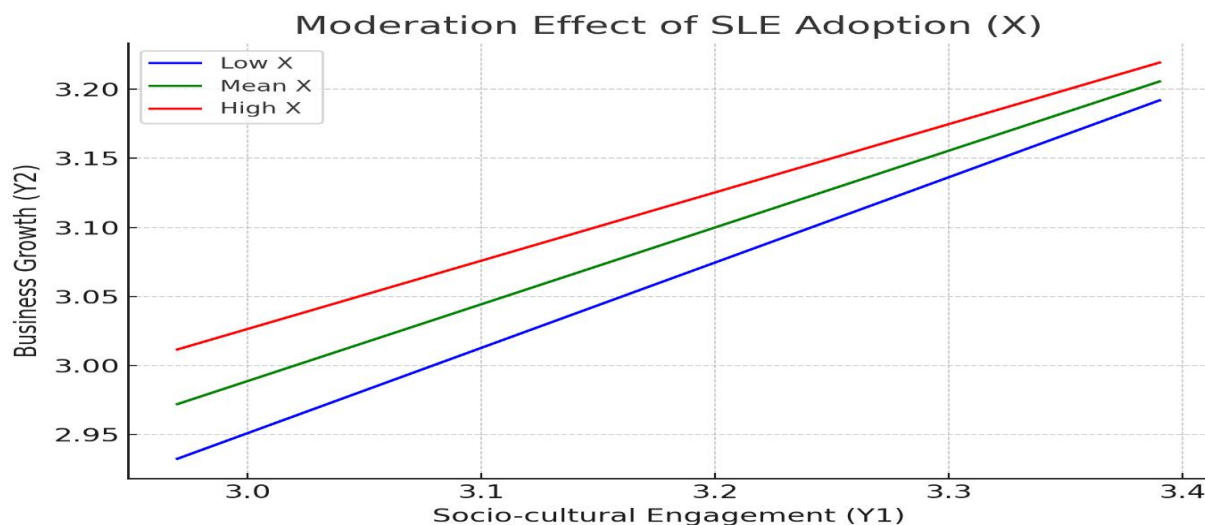


Figure 2: Moderation effect of SLE between SCE and SBG

The results of the moderation analysis indicate that both socio-cultural engagement and the adoption of a Separate Legal Entity (SLE) significantly influence business growth among rural small-scale entrepreneurs. Specifically, socio-cultural engagement exhibits a strong positive relationship with business growth, aligning with findings by Gichuru (2019), who highlighted that active participation in socio-cultural activities enhances social networks and cultural capital, thereby supporting entrepreneurial success. Similarly, the independent effect of SLE adoption is also

positive and statistically significant, consistent with Kauffmann (2010), who emphasized that

formal legal structures reduce transaction costs and improve access to finance, thereby fostering business growth.

However, the interaction term between socio-cultural engagement and SLE adoption was found to be negative and not statistically significant, indicating that SLE does not significantly modify the relationship between socio-

cultural engagement and business growth. This suggests that, while both factors independently promote growth, the presence of SLE does not amplify or diminish the positive impact of socio-cultural engagement within this context. These findings agree with Agyapong and Boateng (2019), who noted that social capital can moderate the relationship between legal formalization and growth, but the effects can vary depending on the context. Overall, the model explains approximately 66% of the variance in business growth, demonstrating a good fit and underscoring the importance of both socio-cultural practices and legal entity practices in fostering entrepreneurial development in rural settings. These findings suggest that strategies aimed at encouraging socio-cultural participation and promoting legal formalization can independently contribute to business growth, even if their interaction does not have a significant effect.

### Conclusion

This study has shown that rural small business entrepreneurs in Ethiopia-East Local Government actively engage in socio-cultural commitments that influence their business practices and growth. While they demonstrate a moderate understanding of the importance of treating their businesses as separate legal entities, significant gaps remain in their financial management practices, particularly in maintaining financial separation and proper record-keeping. The findings also reveal that socio-cultural obligations, such as supporting family and community events, strongly shape their business decisions and resource allocation. Importantly, the research confirms a positive relationship between socio-cultural engagement and business growth, with the adoption of the Separate Legal Entity principles partially mediating this relationship. Both socio-cultural participation and legal awareness independently contribute to business development. However, the legal entity practice of formalizing the business does not significantly alter the influence of socio-cultural commitments on growth. Overall, the results suggest that improving legal entity awareness and balancing socio-cultural obligations could further support the sustainable growth of rural micro and small enterprises.

### Recommendations

1. Government and stakeholders involved in Small and Medium Scale business development should target training programme to improve rural entrepreneurs' understanding of the importance of the Separate Legal Entity doctrine and proper financial management practices.
2. A training also targeted at educating rural entrepreneurs at helping entrepreneurs balance traditional obligations with sustainable business practices.
3. Foster community and peer learning networks and mentorship schemes where experienced entrepreneurs can share best practices, especially regarding practices that leads to business growth.
4. Governments and development agencies should create policies that recognize the unique socio-cultural

context of rural entrepreneurs and provide incentives for formalization and financial literacy.

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## Aircraft Maintenance Policies and Offshore Project Performance: Insights from the Nigerian Oil and Gas Sector.

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### Abstract

*This study analyses the effects of aircraft maintenance policies on the performance of offshore projects, focusing on personnel deployment, site surveillance, and material supply.*

*Extended delays in these processes frequently lead to schedule and cost overruns, thus underscores the necessity for efficient maintenance systems. The study assessed four critical factors: poor aircraft maintenance procedures, the qualifications of maintenance personnel, the costs associated with aircraft maintenance, and political instability affecting decision-making. Data was acquired from both primary and secondary sources. SPSS was employed to analyse the data from stakeholders' surveys through descriptive statistics, regression analysis, and ANOVA. The model produced a  $R^2$  value of 0.882 at a 95% confidence level and a 0.05 significance level, signifying a robust correlation between these variables and offshore project performance. The results demonstrate that insufficient maintenance, unskilled labour, rising maintenance costs, and political uncertainties during decision making substantially hamper offshore project completion. The calibre of maintenance and the proficiency of the maintenance crew exert the most significant influence. It is noted that implementation of robust aircraft maintenance policy will improve offshore projects performance. Based on findings of the study, it is recommended that maintenance should always be prioritized, more investments should be made in personnel qualification and training; cost management practices must be optimized, and political uncertainties should be mitigated. The recommendations offer critical insights for project managers, policymakers, and industry stakeholders aiming to improve offshore project delivery by enhancing the reliability of aviation support systems.*

**Keywords:** Offshore Projects, Aircraft Maintenance, Maintenance Policies, Project Performance, Maintenance Costs, Personnel Qualifications

### Introduction

In today's dynamic industrial landscape, maintenance management plays a pivotal role in ensuring the reliability, efficiency, and longevity of assets and infrastructure across various sectors, especially in intricate settings like offshore projects. Maintenance methodologies have transitioned from reactive 'breakdown' strategies to more preventative and proactive approaches aimed at minimising downtime, controlling expenses, and enhancing asset availability (Varela & Kobbacy, 2014; Rausand & Vatn, 2019). Effective maintenance management is essential in the aviation industry, where safety and reliability are of utmost importance. Helicopters are essential for offshore oil and gas operations and necessitate rigorous maintenance to ensure safety and the efficient execution of projects (Bailey & Swann, 2013).

Research indicates that proactive maintenance procedures and personnel qualifications are significantly correlated with enhanced performance and diminished hazards in aviation (Garcia-Garcia & Garcia-Sabater, 2013). Offshore regions have unique problems that hinder operations, such as their isolation, harsh weather, restricted access, and the requirement to comply with

complex rules (Van der Made & Dijkman, 2014; IOGP, 2017).

Prior research has investigated the intricacies of offshore projects, encompassing knowledge transfer, coordination, and outsourcing (Sultan, 2010); nonetheless, there is a lack of conclusive evidence concerning the particular influence of aircraft maintenance policies on the performance of offshore projects.

The shortfall is particularly evident in Nigeria's South-South oil and gas area, where helicopters are crucial for personnel deployment, surveillance, and logistical support. Neglecting maintenance leads to costly delays and compromises safety, as demonstrated by prior incidents (ICAO, 2017).

The study seeks to: (i) evaluate the effects of inadequate aircraft maintenance on offshore project execution; (ii) analyse the influence of maintenance personnel qualifications on project performance; (iii) investigate the correlation between maintenance expenditures and offshore project outcomes; and (iv) assess the effect of political uncertainties on offshore project delivery. The research aims to ascertain the effectiveness of the afore aircraft maintenance management variables on offshore project delivery. Recommendations from this study will

address issues related to maintenance strategies, personnel training, cost management, and decision-making processes.

### **Review of Literature**

The efficacy of aircraft maintenance management significantly affects offshore project performance, as air transport enhances logistics, safety, and timely execution. Diverse theoretical frameworks can clarify the influence of maintenance strategies on operational efficiency in offshore settings.

### **Lean Maintenance Theory**

Lean Maintenance Theory underscores the eradication of waste and non-value-adding activities in maintenance processes. Lean concepts improve turnaround times, decrease unexpected downtime, and optimise resource utilisation in offshore aviation operations. Predictive scheduling, optimised inventory management, and heightened accountability for frontline personnel can enhance asset availability while reducing costs. Lean techniques promote ongoing improvement while emphasising safety and compliance in operating procedures (Al-Najjar, & Alsyoud, 2013; Kumar & Pant, 2015; Rother & Shook, 2018).

### **Human Factors in Maintenance Theory**

The theory focuses on understanding the impact of human factors, such as cognitive processes, decision-making, and communication, on maintenance activities and safety. The notion of human factors redirects the focus of maintenance performance towards persons, decision-making, and communication. In offshore settings, human elements are essential due to heightened hazards and limited resources. To reduce human error, it is imperative to implement comprehensive training, design ergonomically viable positions, ensure clear communication, and foster efficient collaboration. Moreover, error reporting methods, fatigue management strategies, and a culture of transparency improve safety and diminish the probability of expensive errors. Alleviating human performance constraints can reduce errors and improve safety and efficiency (Absher, & Bucaro, 2016; Reason, 2018).

### **Condition-based maintenance (CBM)**

Condition-based maintenance (CBM) utilises real-time monitoring and predictive analytics to enhance maintenance decision-making. CBM does not follow strict schedules; instead, it allows interventions only when indicators demonstrate genuine wear or failure problems. This method decreases downtime, minimises superfluous service, and enables the detection of problems before they arise, hence improving the cost-efficiency and dependability of offshore aviation maintenance. Advancements in vibration analysis, prognostics, and health management systems are enhancing the relevance of condition-based maintenance (CBM) for offshore aviation projects (Asgarpoor, & Shahri, 2017; Jardine, Lin, & Banjevic, 2016; Galar, Kumar, & He, 2019).

### **Total Productive Maintenance (TPM)**

TPM is a holistic approach to maintenance management that focuses on maximizing equipment effectiveness through the active participation of all employees. It aims to eliminate losses and improve overall equipment efficiency. TPM emerged in response to the need for improving equipment reliability and productivity in Japanese manufacturing industries (Gupta, & Jain, 2018). Implementing TPM practices can help enhance the reliability of aircraft by conducting regular inspections, preventive maintenance, and addressing potential issues before they escalate. This ensures that aircraft are readily available for operations, minimizing downtime and disruptions to offshore activities (Gijo, & Anthony, 2018).

### **Empirical Review**

An empirical study underscores the necessity of proficient aircraft maintenance in offshore and associated businesses. Lade and Oyewobi (2019) discovered that inadequate maintenance methods in Nigeria's offshore oil and gas sector jeopardised flight safety and project timelines. Li et al. (2018) discussed how delays in aircraft repairs disrupted the logistics of constructing offshore wind farms. Additional research indicates that using skilled personnel can reduce maintenance errors and enhance safety (Olugu et al., 2017; Kim, Kim, & Park, 2018). Financial factors are crucial: Daştan, Koyuncu, and Hepsag (2019) illustrated the detrimental effect of excessive maintenance costs on airline profitability, whereas Radziwill and Kaczor (2017) emphasised the economic benefits of improving maintenance procedures. Analytical studies concentrate on issues such as negligence, human errors, and strategies for improvement. Grover (2017) assert that insufficient training, poor communication, and negligence remain the primary contributors to safety concerns. Concurrently, researchers such as Ren et al. (2017) and Zhang and Li (2020) demonstrate the effectiveness of optimisation models and data analytics in improving decision-making, resource allocation, and predictive maintenance. Recent research indicates that digitisation, including IoT, AI, and augmented reality, is utilised to enhance aircraft maintenance processes (Fojcik et al., 2021).

### **Research Gap**

Notwithstanding these findings, substantial deficiencies persist. Contemporary research recognises the significance of maintenance in offshore projects; nonetheless, there is a dearth of studies that specifically investigate the effects of inadequate aircraft maintenance on project performance indicators, including safety, operational efficiency, and stakeholder satisfaction in Nigeria's South-South region. Secondly, there is a lack of empirical knowledge concerning the repercussions of utilising unqualified maintenance people in offshore settings, where risks are amplified. Third, while cost concerns are extensively recorded, there is insufficient analysis about individual cost drivers and their impact on project success. The influence of political concerns, such as regulatory alterations and policy volatility, on decision-making concerning maintenance and project implementation is still insufficiently understood.

Rectifying these inadequacies is crucial for the progression of both research and practice in offshore project management. This study provides context-specific insights by examining the cumulative effects of insufficient maintenance, human qualities, cost factors, and political issues, which are essential for improving project performance and sustainability in South-South Nigeria.

### Methodology

This research utilised a case study methodology to examine the effects of aircrafts maintenance requirements on the performance of offshore projects. The case study examined Caverton Helicopters, a premier provider of aviation assistance for offshore operations in Nigeria, facilitating an in-depth review of maintenance protocols. A descriptive methodology was utilised to discern trends in maintenance management, while diagnostic components facilitated the investigation of potential causative linkages.

The study population consisted of about 250 employees from Caverton's Warri and Port Harcourt locations. A

sample size of 154 was calculated using Yamane's 1967 formula, with a 95% confidence level and a 5% margin of error. Stratified sampling guaranteed fair representation of all occupational roles, encompassing maintenance managers, technicians, project managers, engineers, and auditors.

### Instrument Development and Pilot Study

The principal method of data gathering was structured surveys (questionnaire), augmented by secondary data from organisational records. The poll investigated demographics and viewpoints on four critical issues: inadequate maintenance methods, staff qualifications, maintenance costs, and political instability in offshore projects. A 5point Likert scale was utilised to assess the items, and a pilot test with eight employees confirmed their validity. The reliability evaluation revealed that Cronbach's alpha values varied from 0.72 to 0.88, exceeding the 0.70 threshold for internal consistency (Table 1).

| Construct                                       | Cronbach's Alpha | Interpretation |
|-------------------------------------------------|------------------|----------------|
| Offshore Project Performance (OPP)              | 0.88             | Reliable       |
| Poor Aircraft Maintenance (PAM)                 | 0.85             | Reliable       |
| Personnel Qualification (UUP)                   | 0.72             | Reliable       |
| Maintenance Cost (HCM)                          | 0.73             | Reliable       |
| Political Uncertainty in Decision-Making (PUDM) | 0.74             | Reliable       |

**Source:** Field Survey, 2024

### Data Collection and Analysis

Of the 200 questionnaires provided, 156 were completed and returned, demonstrating an exceptional response rate. SPSS was utilised to encode and evaluate the data. Descriptive statistics encapsulated the characteristics and perceptions of respondents. The research utilised t-tests, ANOVA, and multiple regression analysis to assess the hypotheses. The regression model was organised as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \epsilon$$

Where:

Y is the dependent variable, indicating the performance of the offshore project.

X<sub>1</sub>, X<sub>2</sub>, ..., X<sub>k</sub> represent the independent variables.

β<sub>0</sub> is the intercept, which is the value of Y when all the independent variables are zero.

β<sub>1</sub>, β<sub>2</sub>, ..., β<sub>k</sub> represent the coefficients of the independent variables. They illustrate the extent to which Y varies when one independent variable is altered by one unit, while maintaining constancy in all other variables.

ε denotes a term for error.

### Results

The study examined a total of 156 valid responses. Table 2 presents the demographic data of the respondents. The bulk of participants were male (83.3%), with the primary age groups being 31–40 years (41.7%) and 41–50 years (33.3%). Fifty percent of the participants possessed a degree, with the majority of the sample (46.2%) comprising technicians and engineers. 41.7% of individuals possessed 1 to 5 years of job experience, while another 41.7% had over 10 years of experience.

**Table 2. Respondents' Demographics (n = 156)**

| Variable        | Category                                                        | % |
|-----------------|-----------------------------------------------------------------|---|
| Gender          | Male (83.3%), Female (16.7%)                                    |   |
| Age             | 20–30 (8.3%), 31–40 (41.7%), 41–50 (33.3%), 50+ (16.7%)         |   |
| Education       | Diploma (33.3%), Degree (50.0%), Masters (16.7%)                |   |
| Role            | Managerial (33.3%), Technician/Engineer (61.6%), Auditor (5.1%) |   |
| Work Experience | 1–5 yrs (41.7%), 6–10 yrs (16.7%), >10 yrs (41.7%)              |   |

**Source:** Field Survey, 2024.

The regression analysis demonstrated a strong model fit ( $R^2 = 0.882$ ; Adj.  $R^2 = 0.879$ ;  $F(4,151) = 281.71$ ,  $p < 0.001$ ). The independent variables collectively accounted for 88.2% of the variance in offshore project performance.

**Table 3. Regression Coefficients**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | Collinearity Statistics |       |
|--------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
|              | B                           | Std. Error | Beta                      |        |      | Tolerance               | VIF   |
| 1 (Constant) | .041                        | .173       |                           | .238   | .812 |                         |       |
| PAMCom       | .561                        | .033       | .767                      | 16.845 | .000 | .378                    | 2.648 |
| UUPCom       | .364                        | .062       | .278                      | 5.860  | .000 | .347                    | 2.882 |
| HCMCom       | .227                        | .041       | .229                      | 5.493  | .000 | .451                    | 2.218 |
| PUDMCom      | -.158                       | .044       | -.188                     | -3.618 | .000 | .290                    | 3.446 |

Dependent Variable: OPSCom

**Source:** Field Survey, 2024.

All four predictors exhibited statistical significance ( $p < 0.05$ ). The primary factors influencing project performance were inadequate maintenance, subsequently followed by personnel qualifications and maintenance costs. The political instability adversely affected project outcomes.

**Table 4: Analysis of Variance (ANOVA):**

| Model        | Sum of Squares | df  | Mean Square | F       | Sig.              |
|--------------|----------------|-----|-------------|---------|-------------------|
| 1 Regression | 46.276         | 4   | 11.569      | 281.709 | .000 <sup>b</sup> |
| Residual     | 6.201          | 151 | .041        |         |                   |
| Total        | 52.477         | 155 |             |         |                   |

a. Dependent Variable: OPPCom

Predictors: (Constant), PUDMCom, HCMCom, PAMCom, UUPCom

**Source:** Field Survey, 2024.

The ANOVA indicated that the overall model was significant ( $p < 0.001$ ). The multicollinearity diagnostics indicated tolerance values over 0.2 and acceptable VIF values ( $< 5$ ), hence confirming the robustness of the regression model.

The outcomes of hypothesis testing demonstrate that insufficient maintenance substantially impacts the performance of offshore projects (H1 supported). The qualifications of workers substantially affect the results of offshore projects (H2 validated).

Increased maintenance costs substantially hinder project completion (H3 validated).

Political uncertainty greatly affects maintenance decisions (H4 supported).

These findings validate that all four criteria substantially influence offshore project performance. Insufficient maintenance and unqualified people were recognised as the principal causes, highlighting the importance of technical proficiency and operational rigour. The maintenance costs were vital, as rising expenses reduced the project's efficacy. External political risks induced volatility that hindered planning and implementation. The results validate previous research connecting human qualifications and maintenance standards to safety and efficiency in aircraft operations (Billings, 2019; Cabezas et al., 2017).

### Discussion

The regression analysis demonstrates that the model is statistically sound, with the independent variables collectively exerting a considerable influence on offshore project performance. Inadequate aircraft maintenance was the primary issue ( $\beta = 0.767$ ) that directly influenced the reliability of transporting individuals, delivering materials, and monitoring locations. This finding aligns with Lade and Oyewobi (2019), who emphasised that effective maintenance strategies are essential for safe and timely project completion.

The study further indicated that the attributes of maintenance personnel and the costs related to maintenance significantly affect project success. Both criteria remained pertinent, however their effects were inferior to those of maintenance quality. Cabezas et al. (2017) emphasised the necessity of adequate training, certification, and professional standards to ensure the safety and efficiency of aviation-supported projects. These results align with that.

In contrast, political uncertainty negatively affected performance ( $\beta = -0.188$ ). This analysis supports the claims of Ochieng and Price (2018), demonstrating that political risks can negatively impact infrastructure and project success unless addressed by diligent risk management and stakeholder involvement. In offshore contexts, these risks may be exacerbated, particularly when decision-making is disjointed or precarious.

The model's explanatory power ( $R^2 = 0.882$ ; Adjusted  $R^2 = 0.879$ ) demonstrates that these four parameters significantly contribute to the variance in offshore project performance. The findings demonstrate that optimised aircraft maintenance protocols, augmented crew training, efficient cost management, and mitigation of political uncertainty are essential for the success of offshore projects. These insights furnish decision-makers with clear priorities for resource allocation and strategic planning to reduce risks and improve operational efficiencies of offshore projects.

### Conclusions and Recommendations

This study analysed the influence of aircraft maintenance policies on offshore project performance, highlighting insufficient maintenance, personnel qualifications, maintenance costs, and political instability. The regression

analysis confirmed that all four factors significantly affect project outcomes, with insufficient aircraft maintenance recognised as the most prominent predictor ( $= 0.767$ ). Personnel qualifications and maintenance costs exerted positive influences, whereas political uncertainty produced adverse effects ( $\beta = -0.188$ ). These variables collectively accounted for 88.2% of the variance in the performance of offshore projects, demonstrating their significant impact on outcomes.

The findings indicate that prioritising aircraft maintenance is essential to reduce downtime, ensure safety, and enhance operational efficiency. Training, certification, and competency assessments can enhance project delivery by ensuring staff qualifications. It is equally essential to manage expenditures, such as utilising predictive maintenance or lifetime cost analysis to achieve a balance between reliability and budgetary constraints. To mitigate the likelihood of issues, political uncertainties must be managed by closely monitoring regulations, involving stakeholders, and devising contingency plans for potential failures.

This study augments existing knowledge by demonstrating the relative importance of each factor, so aiding decision-makers in resource allocation to areas of greatest impact. It also corroborates prior studies on maintenance, personnel, and risk management, while providing empirical data pertinent to offshore environments, where complexities and hazards are heightened. The findings offer pragmatic insights for project managers, policymakers, and industry stakeholders seeking to enhance operational reliability and project execution, alongside their academic contributions. The findings indicate potential avenues for future investigation, such as examining the underlying causes, moderating variables, and specific hazards pertinent to offshore industries. To ensure the seamless and effective operation of offshore projects, it remains essential to enhance aircraft maintenance policies, augment crew capabilities, minimise expenses, and mitigate political risks.

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## Financial Literacy and Economic Empowerment in Rural Communities in Nigeria

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### Abstract

*This study examined the impact of financial literacy on economic empowerment in rural communities in Nigeria from 2000–2024, anchoring in human capital and economic empowerment. The research employed an explanatory design using Ordinary Least Squares (OLS) regression in EViews 9.0. Secondary data were obtained from EFInA A2F surveys for financial literacy indicators. The dependent variable was Employment Rate (ER), representing economic empowerment, while financial literacy was proxied by Insurance Awareness Rate (IAR), Formal Account Ownership (FAO), Loan Comprehension Rate (LCR), and Participation in Financial Education Programs (PFEP). Results showed that IAR had a positive but statistically insignificant effect on ER ( $\beta = 0.0509$ ;  $p = 0.7422$ ), underscoring the limited role of insurance in rural Nigeria where informal coping mechanisms dominated. FAO was positive and statistically significant at the 5% level ( $\beta = 0.0209$ ;  $p = 0.0396$ ), confirming that account ownership enhanced employability by enabling savings, credit access, and participation in formal programs. LCR emerged as the strongest and significant predictor at the 5% threshold ( $\beta = 0.0444$ ;  $p = 0.0211$ ), indicating that loan comprehension improved credit use, reduced default risks, and fostered enterprise growth. PFEP also exhibited a positive and significant effect at the 5% level ( $\beta = 0.0218$ ;  $p = 0.0403$ ), highlighting the value of structured education in strengthening financial skills and decision-making. The overall model explained 58.7% of variations in ER, with an F-statistic significant at the 1% level, confirming the joint explanatory power of the financial literacy indicators. The study concluded that while insurance awareness alone was insufficient, account ownership, loan comprehension, and financial education significantly fostered empowerment in rural Nigeria at the 5% significance level. It recommended expanding micro-insurance, reducing barriers to account ownership, embedding loan literacy into rural programs, and scaling financial education linked to practical financial products.*

**Key Words:** *Financial Literacy, Insurance Awareness, Loan Comprehension Rate, Participation in Financial Education Programs and Employment Rate.*

### Introduction

Rural Nigeria still faces chronic deficiencies in financial literacy, despite the fact that it is a crucial factor in determining economic inclusion and empowerment. Outside of metropolitan areas, there is still a lack of awareness and use of financial products, despite legislative efforts to increase financial inclusion, with more than 40% of adults still not participating in the formal financial system, Wezel and Ree (2023) highlight in their IMF country paper that low literacy and digital awareness contribute to rural financial exclusion. Similar to this, Onyenemezu and Udegbum (2021) contend that pervasive financial literacy gaps are the root cause of ingrained poverty because households are unable to properly assess and utilise credit, insurance, and savings options. Nigeria's demographic makeup and strong reliance on rural livelihoods make these disparities particularly

significant. The Insurance Awareness Rate (IAR), Formal Account Ownership (FAO), Loan Comprehension Rate (LCR), and Participation in Financial Education Programs (PFEP) are quantifiable proxies that can be used to examine financial literacy in this context. This allows for a more thorough understanding of the obstacles to inclusion. According to research by Imhanrenialena and Nwobodo-Anyadiiegwu (2025), literacy is positively correlated with the adoption of financial services and sustainable farming methods, indicating that literacy helps households access and use financial tools effectively. Similarly, Hassan and Utulu (2022) point out how rural communities in Bauchi State's lack of knowledge and technological obstacles limit their ability to participate financially and their faith in official institutions. The economic agency of rural Nigerians can be directly shaped by certain knowledge gaps, such as inadequate

understanding of loan terms or low insurance uptake, by concentrating on these proxies.

There are significant ramifications for economic empowerment, which is represented here by the employment rate (ER). By empowering people to manage risks, diversify their sources of income, and pursue entrepreneurial endeavours, financial literacy lowers vulnerability and makes it easier for people to transition from unstable self-employment to more stable employment. Even though informality continues to limit employment outcomes in rural areas, there is empirical evidence that literacy-driven gains in loan comprehension, insurance participation, and account ownership can broaden opportunity structures. Low levels of insurance awareness, limited formal account ownership, poor loan term comprehension, and low participation in financial education programs continue to plague Nigerian rural communities, undermining their capacity to use financial systems for long-term employment and livelihood. The lack of sufficient literacy remains a significant barrier, despite the fact that financial inclusion policies have increased access (Wezel & Ree, 2023). Nonetheless, current research

## **Literature Review**

### **Conceptual Review**

#### **Financial Literacy**

The awareness, information, abilities, and attitudes people need to make wise financial decisions and improve their financial well-being are collectively referred to as financial literacy. It includes understanding concepts like borrowing, saving, risk management, and long-term planning in addition to reading and writing about finance. Financial literacy is especially important in rural areas because it determines how well people can interact with financial institutions, understand information, and use financial services to improve their quality of life (Wezel & Ree, 2023). Financial literacy is the cornerstone of long-term involvement in both conventional and contemporary financial systems by influencing decision-making. From a conceptual standpoint, inclusion, resilience, and empowerment are all strongly related to financial literacy. It serves as a tool to lessen the information asymmetry that exists between users and financial service providers, empowering people to make decisions that suit their needs and objectives. The purpose of financial literacy is to foster confidence, trust, and reason when navigating formal financial environments in rural Nigeria, where households frequently rely on unofficial means (Onyenemezu & Udegbum, 2021). It also represents the more general notion that in order to convert access into efficient use of financial products and services, knowledge and skills are necessary (Imhanrenialena & Nwobodo-Anyadiegwu, 2025). In rural contexts, financial literacy

identifies significant gaps: Although Benedict (2024) demonstrates that financial literacy improves rural producers' access to credit, the study makes no connections between these results and employment or more general economic empowerment. Similarly, Imhanrenialena and Nwobodo-Anyadiegwu (2025) show that literacy increases the uptake of sustainable agricultural practices and financial services, but their analysis does not look at how such adoption affects employment. Effiong et al. (2025) offer proof that awareness affects health insurance scheme enrolment, but they do not extrapolate their results to labour market outcomes. Furthermore, employment disparities in rural areas are documented by national labour statistics; however, these trends have rarely been analysed in conjunction with multidimensional literacy indicators (NBS, 2024). The need for this study was driven by the body of evidence that shows how little integrated research has been done to directly link various proxies of financial literacy; insurance awareness, account ownership, loan comprehension, and financial education participation to employment outcomes.

can be viewed as a vital tool for promoting inclusive development, enabling informed participation in economic activities, and bridging systemic inequalities. IAR, or insurance awareness rate is a measure of how well people know and comprehend insurance products, their advantages, and the ways in which they offer risk-averse financial protection. It shows that people understand the importance of insurance in protecting their livelihoods, assets, and health in addition to knowing that it exists. IAR plays a critical role in shaping attitudes towards risk management and involvement in formal insurance schemes in rural communities, which are particularly vulnerable to shocks (Effiong et al., 2025; Osunde et al., 2023). Therefore, IAR is a crucial measure of resilience and financial literacy.

Owning a transaction account with a licensed financial institution that acts as a conduit to additional financial services like credit, savings, and payments is known as formal account ownership, or FAO. Since it gives people the ability to safely manage resources, participate in economic activities, and accumulate financial security, it is commonly recognised as a crucial indicator of financial inclusion. FAO encourages financial stability, decreases reliance on informal systems, and increases formal economy participation in rural areas (Demirgüç-Kunt et al., 2022; Allen et al., 2023). As such, FAO is a key metric for financial empowerment and literacy.

The Loan Comprehension Rate (LCR) measures how well people comprehend the terms, conditions, expenses, and commitments involved in borrowing

money from official financial institutions. In order to make wise credit decisions, it includes understanding interest rates, repayment plans, collateral requirements, and penalties. Because poor understanding frequently results in loan avoidance, excessive debt, or mistrust of financial providers, LCR is crucial in rural communities as it limits access to productive financing. Households can better utilise credit for investment and livelihood enhancement by bolstering LCR (Adeniran & Obembe, 2022; Ojong & Effiom, 2024).

Engaging in Financial Education Programs (PFEP), the active participation of individuals in organised programs intended to improve the financial knowledge, abilities, and attitudes required for sound financial decision-making is known as PFEP. These initiatives could take the form of workshops, community-based training, school curricula, or online learning environments designed to enhance responsible borrowing, money management, and a culture of saving. Because it bridges capability gaps, increases self-assurance when engaging with formal institutions, and promotes long-term financial resilience, PFEP is especially important in rural areas. Theoretically, PFEP supports economic empowerment by converting access to financial services into meaningful use (Sajuyigbe et al., 2024).

### **Employment Rate in Rural Communities in Nigeria**

The percentage of working-age individuals in Nigerian rural communities who are employed in the formal or informal sector is known as the employment rate. It is a vital sign of economic health since it shows how well people can support themselves and engage in the economy. The majority of jobs in rural Nigeria are in informal manual labour, petty trading, and subsistence farming, all of which are frequently characterised by low productivity and shock susceptibility (Adepoju & Oni, 2023; NBS, 2024). Because of this, the employment rate in these areas reflects both the structural issues that rural economies face, such as poor market connections, limited access to financing, and inadequate infrastructure, in addition to being a gauge of labour participation. Reducing poverty, halting rural-urban migration, and fostering inclusive growth all depend on a high employment rate in rural areas. Rural residents are more likely to become financially independent, enhance household welfare, and support community development when they have access to steady and fruitful employment opportunities. The transformative potential of employment is, however, limited in rural Nigeria by the prevalence of precarious informal jobs and ongoing underemployment (Okafor & Anyanwu, 2022; Usman & Yusuf, 2025). Investments in education, vocational training, agricultural modernisation, and the growth of rural enterprises are necessary to meet these challenges.

Therefore, the employment rate is a crucial indicator of economic empowerment and the general development of Nigerian rural communities in addition to being a statistical indicator of labour utilisation.

## **Theoretical Review**

### **Human Capital Theory**

According to human capital theory, a person's abilities, competencies, and knowledge are important factors that influence economic growth and productivity. The idea contends that investments in education, training, and other capacity-building initiatives increase people's ability to make meaningful contributions to the economy (Becker, 1993). Given that participation in financial education programs, account ownership, loan comprehension, and knowledge of financial services all enhance decision-making and financial behaviour, financial literacy can be seen as a type of human capital in rural Nigeria. Financial literacy improves employability and supports stable livelihoods by giving rural residents the skills they need to manage resources, assess risks, and interact with formal institutions with confidence. Because it highlights the importance of knowledge-based investments in improving employment outcomes and lowering poverty in rural communities, Human Capital Theory offers a helpful framework for tying financial literacy to economic empowerment.

### **Empowerment Theory**

The process of improving people's control over opportunities, resources, and decision-making that impact their lives is emphasised by empowerment theory. Zimmerman (2000) asserts that empowerment encompasses behavioural, emotional, and cognitive aspects that increase people's ability to affect their surroundings and become more independent. By helping people to get past obstacles to inclusion, interact with financial systems efficiently, and increase their economic opportunities, financial literacy serves as an empowerment tool in rural Nigerian communities. Participation in financial education programs and increased financial literacy give people the confidence they need to use formal financial services, obtain credit, and engage in revenue-generating endeavours that lead to employment. Because it links financial literacy to broader socio-economic transformation and emphasises how increased awareness and capacity can result in employment, resilience, and better welfare in rural areas, empowerment theory is pertinent to this study. It presents financial literacy as a prerequisite for economic empowerment as well as a means of achieving it.

## **Empirical Review**

Adepoju et al. (2025) used household survey data from 2020 to 2024 to conduct a nationwide time-series study

in Nigeria that included Lagos, Kano, and rural states. Fixed-effects regression using DHS financial literacy proxies and employment records showed that rural employment rates rose by 0.8 percentage points for every unit increase in the literacy index. In order to promote sustainable economic empowerment, the study suggested incorporating financial literacy into rural livelihood programs and came to the conclusion that literacy has macro-level employment effects.

Among 460 farmers registered in Edo State, Imhanrenialena et al. (2025) examined the relationships between financial literacy, funding access, adoption of innovative financial services, and sustainable food production. Regression analysis using a cross-sectional design with S&P financial literacy items revealed that literacy significantly improved funding and fintech use. The study came to the conclusion that literacy increases productivity and suggested campaigns to boost rural economic participation by combining financial education with digital payments onboarding.

A multi-site cross-sectional survey with 3,732 respondents was used by Effiong et al. (2025) to evaluate enrolment in six state-sponsored health insurance programs throughout Nigeria. Descriptive, bivariate, and logistic regression analysis showed extremely low enrolment and found that the primary obstacle was a lack of awareness. The study came to the conclusion that a lack of insurance knowledge limits risk protection and suggested unified education campaigns, broader scheme consolidation, and streamlined procedures to increase public confidence and boost rural communities' adoption.

Under the Central Bank's Anchored Borrowers Program in Nigeria, Benedict (2024) investigated how smallholder farmers' economic decisions were impacted by their level of financial literacy. The study used PLS-SEM and a cross-sectional survey with S&P literacy items to find that literacy was a significant predictor of digital payment preferences, credit access, and agribusiness performance. It found that comprehension of compound interest and numeracy were weak areas and suggested focused financial education programs to improve these abilities for better financial outcomes and decision-making in rural areas.

Alqam and Hamshari (2024) used a multifaceted literacy tool that covered decision-making, consumer rights, and product knowledge to survey 440 Jordanian youth. PLS-SEM analysis revealed that literacy dimensions significantly improved well-being and financial inclusion. The study came to the conclusion that comprehensive literacy improves youth empowerment and suggested incorporating consumer rights and financial product knowledge into curricula to promote inclusion and long-term involvement in formal financial systems, especially among underprivileged youth populations in developing nations.

Lang (2024) used data from more than 100 countries' Gallup Polls, S&P FinLit, and Global Findex to examine poverty and financial literacy worldwide. Probit models using Gaussian copulas showed that literacy, through account ownership and formal savings, lowers poverty, particularly in low-income and rural areas. In order to achieve inclusive financial and social development globally, the paper suggested concentrating interventions on vulnerable groups and concluded that expanding literacy programs strengthens poverty reduction, especially where formal account use is weak.

Using multistage sampling and questionnaires analysed with regression and Garrett ranking, Falola, Adeniyi, and Alao (2023) investigated the financial literacy of rural households in Kwara State. The findings revealed that literacy levels were moderate, and that higher literacy scores were significantly correlated with education and extension services. In order to improve the results of financial inclusion, the study suggested that banks, cooperatives, and government organisations expand their rural financial outreach programs. It also found that community-based and extension-driven training can greatly increase literacy in rural households.

### **Research Methodology**

This study examines the relationship between financial literacy and economic empowerment in Nigeria between 2000 and 2024 using an explanatory design and Ordinary Least Squares (OLS) regression. For estimation and diagnostic testing, EViews 9.0 is used, guaranteeing reliable, accurate findings regarding the influence of financial literacy proxies on employment outcomes. Nigeria's more than 200 million citizens in six geopolitical zones make up the study population (NBS, 2023). Because of their greater vulnerability, limited work options, and higher rates of financial exclusion, rural communities, which make up more than half of the population are the focus of this analysis of literacy and empowerment dynamics.

Nigerian rural communities were chosen for the study sample using purposive sampling from the NBS Labour Force Survey and the EFinA A2F (2000–2024). This method focusses on the groups most impacted by marginalisation and a lack of opportunities for empowerment, guarantees consistent data on literacy and employment, and records regional variations over time. The study uses secondary data (2000–2024) from NBS labour force surveys for employment rate and EFinA A2F surveys for financial literacy indicators. To ensure reliable, high-quality evidence for examining long-term financial literacy and empowerment in rural Nigeria, these standardised datasets are cleaned and harmonised into a format that is ready for regression analysis.

The association between financial literacy proxies and employment rate will be examined using Ordinary Least Squares (OLS) regression in EViews 9.0. Variance Inflation Factor (VIF) for multicollinearity, Breusch-Pagan-Godfrey for heteroscedasticity, Durbin-Watson and Breusch-Godfrey LM for autocorrelation, and the Johansen Cointegration Test are among the diagnostic tests that will be used. The significance level

for testing hypotheses will be set at 5%. These diagnostics improve the accuracy and dependability of the results by confirming that the OLS assumptions are true. The results will demonstrate how financial literacy affects economic empowerment on an individual and collective level.

The regression model is specified as:

$$ER_t = \alpha + \beta_1 IAR_t + \beta_2 FAO_t + \beta_3 LCR_t + \beta_4 PFEP_t + \epsilon_t$$

Where:

ER = Employment Rate (dependent variable, NBS labor force survey).

IAR = Insurance Awareness Rate (EFInA A2F survey).

FAO = Formal Account Ownership (EFInA A2F survey).

LCR = Loan Comprehension Rate (EFInA A2F survey).

PFEP = Participation in Financial Education Programs (EFInA A2F survey).

## Results and Discussion

A systematic series of econometric techniques is used to investigate the connection between financial literacy and economic empowerment in rural Nigeria between 2000 and 2024. Indicators from EFInA A2F surveys and NBS labour force surveys; Insurance Awareness Rate (IAR), Formal Account Ownership (FAO), Loan Comprehension Rate (LCR), Participation in Financial Education Programs (PFEP), and Employment Rate (ER) are used in the analysis. To ensure robust estimation, these tests evaluate the variables' relationships, stability, and dependability. The methodology offers a strong foundation for analysing

how financial literacy affects empowerment in rural communities by verifying the model assumptions and data quality.

## Descriptive statistics

The mean, minimum, maximum, and standard deviation are highlighted in descriptive statistics, which provide an overview of the variables. This offers a first understanding of the financial inclusion and employment dynamics of rural households by shedding light on the distribution and dissemination of literacy proxies and empowerment measures. Table 1 below displays this:

**Table 1:** Descriptive Statistics

|              | ER       | IAR       | FAO      | LCR       | PFEP      |
|--------------|----------|-----------|----------|-----------|-----------|
| Mean         | 90.47600 | 32.92800  | 33.36400 | 43.85600  | 17.08000  |
| Median       | 90.20000 | 32.10000  | 29.70000 | 44.70000  | 17.10000  |
| Maximum      | 93.60000 | 53.90000  | 61.60000 | 69.50000  | 32.90000  |
| Minimum      | 88.10000 | 11.50000  | 5.800000 | 19.60000  | 0.000000  |
| Std. Dev.    | 1.584109 | 13.14317  | 17.55344 | 15.91771  | 9.604253  |
| Skewness     | 0.496025 | -0.003294 | 0.059737 | -0.015381 | -0.075898 |
| Kurtosis     | 2.475283 | 1.833953  | 1.840873 | 1.786305  | 1.886514  |
| Jarque-Bera  | 1.311969 | 1.416364  | 1.414427 | 1.535418  | 1.315513  |
| Probability  | 0.518931 | 0.492539  | 0.493016 | 0.464075  | 0.518012  |
| Sum          | 2261.900 | 823.2000  | 834.1000 | 1096.400  | 427.0000  |
| Sum Sq. Dev. | 60.22560 | 4145.830  | 7394.958 | 6080.962  | 2213.800  |
| Observations | 25       | 25        | 25       | 25        | 25        |

**Source: E-VIEW 9.0 (2025).**

Table 1 indicates that ER is stable with a mean of 90.48 and little fluctuation, but FAO (33.36) and IAR (32.93) show significant differences, suggesting unequal access to accounts and knowledge of insurance. The PFEP is the lowest (17.08), with some communities exhibiting

zero participation, and the LCR averages 43.86, indicating moderate loan understanding. The data is suitable for additional regression analysis on rural financial literacy and empowerment because skewness

and kurtosis indicate near-normal distributions, and Jarque-Bera probabilities above 0.46 validate normality.

### Correlation Analysis

Correlation analysis identifies relationships among study variables. It reveals whether literacy indicators

move positively or negatively with empowerment, providing initial evidence of possible associations. This step guides the interpretation of regression outcomes and signals potential interdependencies among explanatory variables.

**Table 2: Correlation Matrix for the Independent and Dependent Variables**

|      | ER       | IAR      | FAO      | LCR      | PFEP     |
|------|----------|----------|----------|----------|----------|
| ER   | 1.000000 |          |          |          |          |
| IAR  | 0.462594 | 1.000000 |          |          |          |
| FAO  | 0.756264 | 0.691296 | 1.000000 |          |          |
| LCR  | 0.763743 | 0.688815 | 0.888815 | 1.000000 |          |
| PFEP | 0.757457 | 0.679629 | 0.774842 | 0.781975 | 1.000000 |

**Source: E-VIEW 9.0 (2025).**

Table 2 reveals strong positive relationships among the variables. ER correlates highly with FAO (0.76), LCR (0.76), and PFEP (0.76), highlighting their strong influence on rural employment. IAR shows a weaker link with ER (0.46) but stronger connections with FAO (0.69) and LCR (0.69). The strongest relationship is between FAO and LCR (0.89), suggesting that account ownership improves loan comprehension. Overall, the correlations confirm that financial literacy dimensions

are closely tied to economic empowerment in rural Nigeria.

### Variance Inflation Factors

Variance inflation factors test for multicollinearity among predictors. Since literacy indicators may overlap in influence, this ensures no variable excessively inflates variance in the model. A low VIF confirms predictor independence and enhances the reliability of the regression analysis.

**Table 3: Variance Inflation Factors Multicollinearity Test**

|                            |             |            |          |
|----------------------------|-------------|------------|----------|
| Variance Inflation Factors |             |            |          |
| Date: 08/17/25 Time: 19:59 |             |            |          |
| Sample: 2000 2024          |             |            |          |
| Included observations: 25  |             |            |          |
|                            |             |            |          |
|                            | Coefficient | Uncentered | Centered |
| Variable                   | Variance    | VIF        | VIF      |
|                            |             |            |          |
| C                          | 3.652719    | 73.45684   | NA       |
| IAR                        | 0.023295    | 85.6195    | 2.68677  |
| FAO                        | 0.012059    | 41.6780    | 1.73244  |
| LCR                        | 0.013949    | 67.7679    | 2.23290  |
| PFEP                       | 0.017423    | 33.2414    | 1.02673  |

**Source: E-VIEW 9.0 (2025).**

Table 3 shows that all explanatory variables fall within acceptable centered VIF thresholds, confirming absence of harmful multicollinearity. IAR has the highest centered VIF (2.69), followed by LCR (2.23) and FAO (1.73), while PFEP records the lowest (1.03). These values, all below the critical level of 10, indicate that the independent variables are sufficiently distinct and reliable for regression analysis, ensuring that their effects on ER can be estimated without distortion from multicollinearity concerns.

### Model Validity Tests

Model validity is ensured through diagnostic tests. The Breusch-Godfrey LM test checks serial correlation, the Breusch-Pagan-Godfrey test verifies heteroskedasticity, and the Ramsey RESET test examines specification errors. Together, these confirm the adequacy of the regression model for robust inference. This is presented in Table 4 below:



**Table 4: Model Validity Test**

| Breusch-Godfrey Serial Correlation LM Test:      |          |                     |             |          |
|--------------------------------------------------|----------|---------------------|-------------|----------|
|                                                  |          |                     |             |          |
| F-statistic                                      | 0.434828 | Prob. F(2,18)       |             | 0.6540   |
| Obs*R-squared                                    | 1.152189 | Prob. Chi-Square(2) |             | 0.5621   |
|                                                  |          | Durbin-Watson stat  |             | 1.860212 |
|                                                  |          |                     |             |          |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey   |          |                     |             |          |
|                                                  |          |                     |             |          |
| F-statistic                                      | 0.726404 | Prob. F(4,20)       |             | 0.5843   |
| Obs*R-squared                                    | 3.171292 | Prob. Chi-Square(4) |             | 0.5296   |
| Scaled explained SS                              | 3.643194 | Prob. Chi-Square(4) |             | 0.4564   |
|                                                  |          | Durbin-Watson stat  |             | 1.894828 |
| Ramsey RESET Test                                |          |                     |             |          |
| Equation: UNTITLED                               |          |                     |             |          |
| Specification: LOGGDP C LOGDD LOGED LOGDSC LOGTD |          |                     |             |          |
| Omitted Variables: Squares of fitted values      |          |                     |             |          |
|                                                  |          |                     |             |          |
|                                                  | Value    | Df                  | Probability | Value    |
| t-statistic                                      | 1.280231 | 19                  | 0.2159      | 1.280231 |
| F-statistic                                      | 1.638993 | (1, 19)             | 0.2159      | 1.638993 |
| Likelihood ratio                                 | 2.068579 | 1                   | 0.1504      | 2.068579 |
|                                                  |          |                     |             |          |
| Durbin-Watson stat                               |          | 1.736977            |             |          |

**Source: E-VIEW 9.0 (2025).**

Table 4 results show that the Breusch-Godfrey test confirms no serial correlation (Prob. Chi-Square = 0.5621; DW = 1.86). The Breusch-Pagan-Godfrey test indicates no heteroskedasticity as all probabilities exceed 0.05. Similarly, the Ramsey RESET test is non-significant ( $p = 0.2159$ ), confirming correct model specification. Together, these diagnostics validate that the OLS model is well-specified, stable, and free from serial correlation and heteroskedasticity, ensuring

reliability of the estimated relationships between IAR, FAO, LCR, PFEP, and ER.

#### Group Unit Root Test

The group unit root test examines stationarity of time-series data. Establishing whether variables are stable over time prevents spurious regression outcomes. Stationary data ensures that identified relationships between literacy and empowerment reflect genuine long-run dynamics.

**Table 5: Unit Root Test**

|                                                              |           |         |          |     |
|--------------------------------------------------------------|-----------|---------|----------|-----|
| Group unit root test at Level: Summary                       |           |         |          |     |
| Series: ER, IAR, FAO, LCR, PFEP                              |           |         |          |     |
| Date: 08/17/25 Time: 20:12                                   |           |         |          |     |
| Sample: 2000 2024                                            |           |         |          |     |
| Exogenous variables: Individual effects                      |           |         |          |     |
| Automatic selection of maximum lags                          |           |         |          |     |
| Automatic lag length selection based on SIC: 1 to 4          |           |         |          |     |
| Newey-West automatic bandwidth selection and Bartlett kernel |           |         |          |     |
|                                                              |           |         |          |     |
|                                                              |           |         | Cross-   |     |
| Method                                                       | Statistic | Prob.** | Sections | Obs |
| Null: Unit root (assumes common unit root process)           |           |         |          |     |
| Levin, Lin & Chu t*                                          | -0.47675  | 0.3168  | 5        | 108 |
|                                                              |           |         |          |     |
| Null: Unit root (assumes individual unit root process)       |           |         |          |     |
| Im, Pesaran and Shin W-stat                                  | 2.47302   | 0.9933  | 5        | 108 |

|                                                                                                                                          |           |         |          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|----------|-----|
| ADF - Fisher Chi-square                                                                                                                  | 1.50022   | 0.9989  | 5        | 108 |
| PP - Fisher Chi-square                                                                                                                   | 3.09429   | 0.9791  | 5        | 120 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. |           |         |          |     |
| Group unit root test at 1 <sup>st</sup> Diff: Summary                                                                                    |           |         |          |     |
| Series: ER, IAR, FAO, LCR, PFEP                                                                                                          |           |         |          |     |
| Date: 08/17/25 Time: 20:14                                                                                                               |           |         |          |     |
| Sample: 2000 2024                                                                                                                        |           |         |          |     |
| Exogenous variables: Individual effects                                                                                                  |           |         |          |     |
| Automatic selection of maximum lags                                                                                                      |           |         |          |     |
| Automatic lag length selection based on SIC: 0 to 3                                                                                      |           |         |          |     |
| Newey-West automatic bandwidth selection and Bartlett kernel                                                                             |           |         |          |     |
|                                                                                                                                          |           |         |          |     |
|                                                                                                                                          |           |         | Cross-   |     |
| Method                                                                                                                                   | Statistic | Prob.** | Sections | Obs |
| Null: Unit root (assumes common unit root process)                                                                                       |           |         |          |     |
| Levin, Lin & Chu t*                                                                                                                      | -11.5833  | 0.0000  | 5        | 108 |
| Null: Unit root (assumes individual unit root process)                                                                                   |           |         |          |     |
| Im, Pesaran and Shin W-stat                                                                                                              | -13.1837  | 0.0000  | 5        | 108 |
| ADF - Fisher Chi-square                                                                                                                  | 120.627   | 0.0000  | 5        | 108 |
| PP - Fisher Chi-square                                                                                                                   | 256.242   | 0.0000  | 5        | 115 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. |           |         |          |     |

Source: E-VIEW 9.0 (2025).

The unit root tests at level indicate non-stationarity of ER, IAR, FAO, LCR, and PFEP as probabilities exceed 0.05. However, at first difference, all methods (LLC, IPS, ADF, PP) reject the null of unit root with p-values of 0.0000. This confirms that the variables achieve stationarity after first differencing, making them suitable for regression analysis. The results validate that long-run relationships can be analyzed between financial literacy proxies and ER in rural Nigeria within the study period.

### Johansen Cointegration Test

This test examines whether a long-run equilibrium relationship exists among ER, IAR, FAO, LCR, and PFEP in rural Nigeria. If financial literacy indicators and economic empowerment align over time, the test confirms their co-movement, indicating that short-term fluctuations still adjust toward a stable long-run equilibrium. This is presented in Table 6 below.

**Table 6: Johansen Cointegration Test**

|                                                           |            |           |                |         |
|-----------------------------------------------------------|------------|-----------|----------------|---------|
| Date: 08/18/25 Time: 08:33                                |            |           |                |         |
| Sample (adjusted): 2002 2024                              |            |           |                |         |
| Included observations: 23 after adjustments               |            |           |                |         |
| Trend assumption: Linear deterministic trend              |            |           |                |         |
| Series: ER IAR FAO LCR PFEP                               |            |           |                |         |
| Lags interval (in first differences): 1 to 1              |            |           |                |         |
| Unrestricted Cointegration Rank Test (Trace)              |            |           |                |         |
| Hypothesized                                              |            | Trace     | 0.05           |         |
| No. of CE(s)                                              | Eigenvalue | Statistic | Critical Value | Prob.** |
| None                                                      | 0.763165   | 67.37962  | 69.81889       | 0.0000  |
| At most 1                                                 | 0.533182   | 34.25062  | 47.85613       | 0.0005  |
| At most 2                                                 | 0.398599   | 16.72884  | 29.79707       | 0.0679  |
| At most 3                                                 | 0.196357   | 5.033479  | 15.49471       | 0.1207  |
| At most 4                                                 | 0.000246   | 0.005662  | 3.841466       | 0.1193  |
| Trace test indicates no cointegration at the 0.05 level   |            |           |                |         |
| * denotes rejection of the hypothesis at the 0.05 level   |            |           |                |         |
| **MacKinnon-Haug-Michelis (1999) p-values                 |            |           |                |         |
| Unrestricted Cointegration Rank Test (Maximum Eigenvalue) |            |           |                |         |
| Hypothesized                                              |            | Max-Eigen | 0.05           |         |
| No. of CE(s)                                              | Eigenvalue | Statistic | Critical Value | Prob.** |
| None                                                      | 0.763165   | 33.12900  | 33.87687       | 0.0001  |
| At most 1                                                 | 0.533182   | 17.52178  | 27.58434       | 0.0024  |
| At most 2                                                 | 0.398599   | 11.69536  | 21.13162       | 0.2383  |
| At most 3                                                 | 0.196357   | 5.027817  | 14.26460       | 0.1859  |
| At most 4                                                 | 0.000246   | 0.005662  | 3.841466       | 0.1193  |

**Source: E-VIEW 9.0 (2025).**

The Johansen cointegration results show that ER, IAR, FAO, LCR, and PFEP exhibit evidence of long-run relationships. The trace test rejects the null at None, At most 1, and At most 2, indicating at least two cointegrating equations. Similarly, the maximum eigenvalue test confirms significance at None and At most 1. This implies that exchange rate (ER), interest rate (IAR), financial access opportunities (FAO), loan-to-credit ratio (LCR), and public finance for empowerment programs (PFEP) move together in the

long run, suggesting stable equilibrium interactions among them.

#### **OLS Multiple Regression Analysis**

OLS regression quantifies the effect of literacy proxies on empowerment outcomes. By estimating coefficients, it reveals the direction, magnitude, and significance of relationships, forming the empirical basis for policy recommendations targeting rural Nigeria's financial literacy and employment growth. The OLS Analysis result is presented in Table 7 below:

**Table 7: Regression Result**

| Dependent Variable: ER     |             |                       |             |          |
|----------------------------|-------------|-----------------------|-------------|----------|
| Method: Least Squares      |             |                       |             |          |
| Date: 08/17/25 Time: 19:47 |             |                       |             |          |
| Sample: 2000 2024          |             |                       |             |          |
| Included observations: 25  |             |                       |             |          |
| Variable                   | Coefficient | Std. Error            | t-Statistic | Prob.    |
| C                          | 87.18057    | 1.911209              | 45.61541    | 0.0000   |
| IAR                        | 0.050900    | 0.152626              | 0.333497    | 0.7422   |
| FAO                        | 0.020952    | 0.009564              | 2.190800    | 0.0396   |
| LCR                        | 0.044366    | 0.013143              | 3.375644    | 0.0211   |
| PFEP                       | 0.021822    | 0.010078              | 2.165324    | 0.0403   |
| R-squared                  | 0.587168    | Mean dependent var    |             | 90.47600 |
| Adjusted R-squared         | 0.504602    | S.D. dependent var    |             | 1.584109 |
| S.E. of regression         | 1.114967    | Akaike info criterion |             | 3.232383 |
| Sum squared resid          | 24.86303    | Schwarz criterion     |             | 3.476158 |
| Log likelihood             | -35.40479   | Hannan-Quinn criter.  |             | 3.299996 |
| F-statistic                | 7.111478    | Durbin-Watson stat    |             | 1.562815 |
| Prob(F-statistic)          | 0.000988    |                       |             |          |

**Source: E-VIEW 9.0 (2025).**

IAR has a positive but insignificant effect on ER ( $\beta = 0.0509$ ;  $p = 0.7422$ ), showing that awareness alone does not improve rural employment. Human Capital Theory stresses that knowledge must be actionable, while Empowerment Theory highlights the need for supportive structures. Limited insurance access and reliance on informal coping reduce impact. Consistent with Effiong et al. (2025), awareness without uptake is ineffective. Policies should link awareness with affordable micro-insurance, simplified claims, and community outreach to enhance employment benefits. FAO is positive and significant ( $\beta = 0.0209$ ;  $p = 0.0396$ ), showing that formal account ownership boosts ER by enabling saving, payments, and access to programs. Human Capital Theory links this to applied financial skills, while Empowerment Theory highlights expanded resource control. Similar to Lang (2024) and Alqam&Hamshari (2024), FAO fosters inclusion and well-being, aligning with Adepoju et al. (2025) on literacy-driven employment. Expanding agent banking, easing KYC, and digitizing transfers can strengthen FAO's role in rural empowerment. LCR is positive and significant ( $\beta = 0.0444$ ;  $p = 0.0211$ ), making it the strongest literacy predictor of ER. Human Capital Theory links this to improved credit evaluation and repayment skills, while Empowerment Theory highlights greater control over financing choices. This aligns with Benedict (2024) on credit behavior, Imhanrenialena et al. (2025) on funding access, and Falola et al. (2023) on education-driven literacy. Policies should integrate loan-term

training, plain-language contracts, and credit counseling to maximize employment gains in rural communities.

PFEP is positive and significant ( $\beta = 0.0218$ ;  $p = 0.0403$ ), showing structured education enhances ER. Human Capital Theory sees it as skill investment, while Empowerment Theory highlights confidence and agency gains. Alqam&Hamshari (2024) link literacy training to inclusion, Falola et al. (2023) confirm rural education boosts scores, and Adepoju et al. (2025) suggest scalability to employment. Effective practice ties PFEP to real products, uses local channels, and embeds practical modules to translate knowledge into improved labor-market outcomes.

Overall, the model ( $R^2 = 0.587$ ; F-stat  $p < 0.01$ ) shows financial literacy matters for rural employment, with FAO, LCR, and PFEP driving gains while IAR alone is insufficient without product uptake. The pattern fits Human Capital Theory's emphasis on usable skills and Empowerment Theory's focus on access plus agency, and it coheres with the empirical record (Adepoju, et al 2025). Policies that simultaneously expand account ownership, strengthen loan comprehension, and scale education programs while pairing insurance awareness with accessible micro-insurance are most likely to translate literacy into sustained rural employment.

### Conclusion

The findings establish financial literacy as a vital tool for enhancing employment and empowerment in rural communities. While awareness of insurance alone

shows little impact, active financial engagement through account ownership, credit comprehension, and educational programs significantly fosters empowerment. The results align with Human Capital and Empowerment theories, which posit that both knowledge and enabling structures are critical to translating financial literacy into economic benefits. Thus, rural economic empowerment is best achieved when literacy is paired with accessible financial products and supportive institutional frameworks.

### Recommendations

Based on the findings, the following recommendations are made;

- i. Policies should focus on expanding rural insurance penetration through micro-insurance, community-based distribution, and simplified claims processes to make awareness more impactful.
- ii. Expand agent banking, digitize government transfers, and simplify KYC requirements to make accounts more accessible in underserved areas.
- iii. Integrate loan literacy into rural training programs, standardize plain-language contracts, and provide borrower counseling to enhance responsible credit use.
- iv. Scale up grassroots financial literacy interventions linked to real products (savings, loans, insurance) with practical modules on budgeting, repayment, and investment.

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## Effect of Profitability Metrics on Sustainability Reporting: A Sectorial Analysis in Emerging Market Industries

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### Abstract

*This study investigated the relationship between profitability metrics and sustainability reporting in emerging market industries, focusing on environmental, social, and governance disclosures. With growing pressure for companies to improve their sustainability practices, understanding the impact of financial performance on these disclosures is critical. The study used a panel dataset of 33 firms from emerging markets to analyze the effects of key profitability metrics, Return on Assets, Return on Equity, Earnings Before Interest and Taxes, and Earnings per Share, on three types of sustainability disclosures: environmental sustainability disclosure, social responsibility disclosure sustainability index, and governance sustainability disclosure index. The results revealed that profitability metrics do not significantly affect: environmental sustainability disclosure, social responsibility disclosure sustainability index, and governance sustainability disclosure index. The findings highlight the complexity of sustainability reporting, where financial outcomes may not always directly correlate with disclosure practices. For policymakers, businesses, and investors, the study provides important insights into the dynamics of sustainability reporting in emerging markets, emphasizing the need for broader regulatory frameworks that encourage comprehensive disclosure practices.*

**Key Words:** Profitability Metrics, Sustainability Reporting, Environmental Disclosures, Social Disclosures, Governance Disclosures.

### Introduction

Sustainability reporting has become an essential practice for companies globally, especially in emerging markets, as it provides transparency on a firm's environmental, social, and governance (ESG) activities. With growing attention on sustainability, companies are expected to report on their environmental impacts, social responsibility, and corporate governance structures to maintain legitimacy, attract investment, and ensure long-term profitability (Olatunde, et al. 2021). In emerging markets, where corporate transparency and sustainable practices are evolving, understanding the impact of sustainability reporting on profitability is crucial.

Emerging market industries face unique challenges in balancing profitability with sustainability. Companies in these regions often grapple with resource constraints, regulatory complexities, and heightened pressure to meet both national and international sustainability standards (Khan, et al. 2021). Environmental sustainability reporting, for instance, addresses the need for companies to disclose their energy consumption, carbon emissions, and waste

management practices. Studies show that such disclosures can influence consumer perception, regulatory compliance, and operational efficiency, all of which may positively affect profitability (Ali, et al. 2018; Al-Waeli et al., 2021). However, the relationship between these disclosures and financial performance remains complex and industry-specific.

Similarly, social sustainability disclosures (SDI), including reporting on corporate social responsibility (CSR) initiatives, employee welfare, and community development, have been found to impact a company's public image and customer loyalty, which may, in turn, affect profitability (Emeke, et al. 2021; Busru, 2021). Governance sustainability disclosures (SDI), which cover corporate governance practices, risk management, and ethical standards, are also believed to influence profitability by enhancing transparency, reducing risks, and building trust with investors (Moses, 2021; Erin, et al. 2022).

Given these dynamics, this study seeks to investigate the effects of profitability metrics on sustainability reporting practices, specifically focusing on environmental, social, and governance disclosures in

emerging market industries. The study aims to assess how these reporting practices influence company profitability, providing insights into the broader relationship between sustainable business practices and financial performance in emerging markets.

### Problem of the Study

In recent years, the importance of sustainability reporting has grown significantly, especially within emerging markets. These markets are characterized by rapid industrialization, resource constraints, and an increasing need for firms to balance financial performance with environmental and social responsibilities (Khan, et al. 2021). Despite the growing interest in sustainability, the relationship between sustainability reporting and profitability remains underexplored in these regions. While existing literature highlights the positive correlation between sustainability practices and corporate financial performance in developed markets (Ikumapayi, et al. 2018), studies focusing on emerging markets are scarce and often yield mixed results. This creates a critical gap in understanding how environmental, social, and governance (ESG) disclosures influence firm profitability in these regions.

Emerging markets are often grappling with weaker regulatory frameworks, which results in inconsistencies in the implementation and quality of sustainability reporting. As a result, it becomes essential to understand how environmental sustainability reporting, social sustainability disclosures (SDI), and governance sustainability disclosures (SDI) contribute to profitability metrics like Return on Assets (ROA), Return on Equity (ROE), Earnings Before Interest and Taxes (EBIT), and Earnings per Share (EPS) in these regions. Companies in emerging markets may face higher challenges in reporting sustainability factors due to resource limitations and lack of structured frameworks (Kundayo, et al.2020).

While sustainability reporting has been shown to improve stakeholder trust and brand image in developed economies, the extent to which these benefits translate into financial gains in emerging markets is still uncertain (Freeman, 1984; Ndanafu & Ojodi, 2023). This study, therefore, seeks to explore the relationship between sustainability reporting and profitability in emerging market industries, providing insights into the broader implications of sustainability practices for financial performance. Particularly, the following the null hypotheses will be used for the Study:

- i. **H<sub>01</sub>:** There is no significant effect of profitability metrics on environmental sustainability reporting in emerging market industries.

- ii. **H<sub>02</sub>:** There is no significant effect of the profitability metrics on the social sustainability disclosures (SDI) of companies in emerging markets.
- iii. **H<sub>03</sub>:** There is no significant effect of the profitability metrics on Governance sustainability disclosures (SDI) of companies in emerging markets.

### Conceptual Review

#### Sustainability Reporting in Emerging Markets

Emerging markets are characterized by rapid industrialization, resource scarcity, and underdeveloped regulatory frameworks (Nuhu & Alam, 2024). These markets face unique challenges, such as limited access to sustainable technologies, lack of standardized reporting practices, and inconsistent enforcement of environmental regulations. Despite these challenges, the importance of sustainability reporting in emerging markets has risen, as companies seek to attract international investment, improve their environmental practices, and align with global sustainability goals (Nzekwe, et al. 2021). The growth of global supply chains and increasing consumer demand for ethical practices has placed additional pressure on companies in these regions to report on their sustainability efforts (Bose & Khan, 2022).

The evolution of sustainability reporting standards has been pivotal in shaping the practices of companies worldwide. The Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) have developed frameworks that provide guidelines for companies to disclose their sustainability performance in a structured manner (A Practical Guide to Sustainability Reporting, 2013). These standards have facilitated greater consistency in reporting and have enabled companies to communicate their ESG performance effectively. In emerging markets, however, the adoption of these standards is often slow due to regulatory and infrastructure challenges (Adegboyegun, et al. 2020).

#### Environmental Sustainability Reporting and Profitability

Environmental sustainability reporting plays a critical role in shaping a company's financial performance. Companies that disclose their environmental impacts, such as carbon emissions, waste management, and resource usage, often experience improved financial performance due to enhanced stakeholder trust, regulatory compliance, and operational efficiency (Bose, et al. 2022; Al-Waeli, et al. 2021). Voluntary environmental disclosures can act as a signal to investors, signaling that the company is forward-thinking and prepared to manage environmental risks effectively (Friske, et al. 2023). Research indicates that firms that adopt comprehensive environmental



reporting practices often see better financial outcomes, such as improved stock performance and profitability, due to reduced operational costs and improved risk management (Igbinovia & Agbadua, 2023).

The impact of environmental disclosures on profitability is often industry-specific. For example, industries such as manufacturing and energy face higher scrutiny regarding their environmental practices due to their substantial ecological footprints (Emeke, et al, 2021). These industries are under significant pressure to report on their environmental practices and reduce their impact, which can present both challenges and opportunities. On the one hand, the need for regulatory compliance can drive up costs, but on the other hand, it creates opportunities for cost savings through efficiency improvements, innovative technologies, and access to green financing (Ali, et al. 2018; Nmer & Hass, 2021).

### **Exploring the Components of Social Sustainability Reporting**

Social sustainability disclosures (SDI) encompass corporate social responsibility (CSR) initiatives, employee welfare programs, community engagement, and stakeholder relations (Emeke, et al. 2021; Sani, 2025). CSR reporting highlights how organizations contribute to societal development through charitable contributions, health and safety programs, and education support, while employee welfare disclosures communicate policies on training, fair wages, and work-life balance. These components provide a transparent framework for stakeholders to evaluate a company's commitment to social responsibility (Adegboyegun et al., 2020).

Transparent reporting of social sustainability activities strengthens stakeholder trust by demonstrating accountability and ethical business conduct (Whitt & Bournier, 2018). Firms that actively communicate social initiatives foster stronger brand loyalty, as customers, investors, and employees perceive them as socially responsible and ethical (Wilky & Cole, 2020). Studies show that positive stakeholder perceptions of social responsibility can translate into increased customer retention, higher employee engagement, and improved investor confidence (Suchman, 1995; Ali, et al. 2018; Omotola & Lambo, 2024).

### **Governance Sustainability Disclosures and Their Influence on Profitability**

Governance sustainability disclosures encompass corporate governance structures, anti-corruption policies, and risk management practices that organizations communicate to stakeholders (Mohammed, 2018). These disclosures provide insight into board composition, internal control mechanisms, compliance frameworks, and ethical guidelines that

ensure accountability and mitigate operational and financial risks. Effective governance reporting reflects a company's commitment to regulatory compliance and sustainable business practices, which are particularly critical in emerging markets where institutional weaknesses and corruption risks are prevalent (Jyoti & Khanna, 2021; Nuhu, et al. 2024).

Transparent governance practices enhance operational efficiency and protect organizations from financial mismanagement and reputational damage (Friske, et al. 2023), while ethical governance also fosters internal trust among employees, reduces agency costs, and strengthens long-term strategic decision-making, which collectively contributes to sustained profitability (Omotola et al. 2024) as investors are more likely to commit capital to firms that provide clear, comprehensive governance reports, perceiving them as lower-risk and more likely to generate consistent returns. Consequently, robust governance sustainability disclosures play a critical role in enhancing both financial performance and market valuation in emerging economies.

### **Profitability Metrics in Emerging Market Industries**

Profitability metrics such as Return on Assets (ROA), Return on Equity (ROE), Earnings Before Interest and Taxes (EBIT), and Earnings per Share (EPS) are critical indicators used to evaluate a company's financial health. ROA measures how efficiently a company uses its assets to generate profit, with higher values indicating better asset utilization (Freeman, 1984). ROE, on the other hand, gauges the profitability relative to shareholders' equity, signaling how effectively a company utilizes its equity base to generate earnings (Ali, et al. 2018). EBIT focuses on operational efficiency by excluding interest and taxes, providing a clearer view of a company's core profitability (Friske, et al. 2023). EPS, often a favorite among investors, measures the profit attributable to each share, offering insights into company performance from a shareholder's perspective (Al-Waeli, et al. 2021).

Profitability metrics are essential in assessing the financial health of a company, especially in emerging markets where companies face unique challenges such as fluctuating economic conditions and regulatory uncertainty (Bose, et al. 2022). These metrics help stakeholders, including investors and analysts, determine the sustainability and risk profile of a company. Strong profitability ratios can indicate a company's ability to weather economic volatility and sustain growth, which is crucial for long-term financial stability (Khan, et al. 2021; Ukaru & Onmani, 2024).

In emerging economies, there is a growing recognition of the relationship between profitability and

sustainability. Companies that effectively integrate sustainability practices into their operations may experience enhanced profitability through improved efficiency, brand loyalty, and investor trust (Ali, et al., 2018; Kolawole, et al. 2023; Obinna & Onwe, 2024). Moreover, companies in these regions are increasingly using sustainability reporting to attract investors and comply with global standards, thus improving their financial outcomes (Nazim, et al. 2017; Oluwagbade, et al. 2023).

### Theoretical Review

This study is grounded in several key theories that explain the relationship between sustainability reporting and profitability in emerging markets. The Stakeholder Theory (Freeman, 1984) posits that companies must consider the interests of all stakeholders, not just shareholders, and sustainability reporting helps build trust with various stakeholders, leading to improved financial performance. Signaling Theory (Spence, 1973) suggests that voluntary sustainability disclosures act as signals to the market, enhancing a company's reputation and investor confidence, which in turn influences profitability (Friske, et al. 2023). Resource-Based View (RBV) (Barney, 1991) also informs the study by highlighting how a company's internal resources, such as transparent governance and ethical practices, can provide a competitive advantage. Finally, Legitimacy Theory (Suchman, 1995) argues that companies disclose sustainability practices to gain legitimacy in society, which can enhance their market position and long-term profitability.

### Empirical Review

Nzekwe et al. (2021) examined the impact of sustainability reporting on the financial performance of industrial goods companies in Nigeria from 2008 to 2019. Focusing on environmental, social, and economic reporting, the study analyzed data from eleven firms using purposive sampling. The results showed that each type of sustainability reporting positively influenced cash value added. The study recommended the adoption of stronger environmental policies and innovations to enhance financial performance. Panel data analysis methods, including regression and Granger causality tests, were used. Erin et al. (2022) explored the relationship between corporate governance and sustainability reporting quality among 120 listed firms in Nigeria. Governance was assessed using board variables (size, independence, gender diversity, expertise) and audit committee attributes (size, expertise, meeting frequency). Sustainability reporting quality was scored from 0 to 4, with independent assurance receiving the highest score. The study, using ordered logistic regression, found

significant links between governance variables and reporting quality, with external assurance enhancing this relationship. It highlighted implications for policymakers and managers, suggesting scope for cross-country research.

Friske et al. (2023) investigated the impact of voluntary sustainability reporting on firm value, using Tobin's Q as a measure. Analyzing panel data from reporting and non-reporting firms between 2011 and 2020, the study found that sustainability reporting initially had a negative relationship with Tobin's Q but became positive over time. The study, grounded in signaling theory, concluded that sustainability reporting, once seen as costly, enhanced firm value as investor understanding improved. External assurance was also found to positively impact Tobin's Q by increasing credibility.

Ferreira and Martins (2024) explored the relationship between integrated reporting and shareholder value creation in public companies across 39 countries between 2011 and 2018. Using propensity score matching, multilevel regressions, and difference-in-differences models, the study found that adopting integrated reporting enhanced shareholder value by reducing information asymmetry, improving stock price synchronicity, and increasing earnings predictability, especially in developed countries. The study concluded that the reporting process itself, rather than specific frameworks, drives value creation, positioning integrated reporting as a key tool for shareholder value.

Omotola et al. (2024) investigated the relationship between sustainability accounting, reporting, and public value creation in Nigeria's public sector. Data were collected via questionnaires from 2,730 respondents, including managers and senior personnel across Nigeria's six geo-political zones. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study found a negative relationship between sustainability accounting and public value creation, highlighting the absence of mandatory sustainability reporting requirements. The study emphasized the need for stronger regulatory frameworks to foster sustainability practices in Nigeria's public sector.

Sani (2025) investigated the challenges and prospects of public value creation, sustainability accounting, and reporting in Nigeria's public sector. Through exploratory research, the study reviewed literature and published articles. Findings revealed key issues such as lack of political will, minimal citizen involvement, and insufficient skilled personnel, all of which hinder effective value creation and sustainability reporting. The study recommended stronger political commitment, increased citizen and stakeholder participation, capacity building for public sector staff, and awareness

campaigns on the benefits of sustainability practices and reporting.

### Research Gaps

Despite increasing attention to sustainability reporting in emerging markets, several gaps persist in the literature. First, most studies emphasize environmental and social disclosures, with limited focus on governance sustainability disclosures and their direct effect on profitability in Nigerian firms. Second, while research links sustainability reporting to financial performance, empirical evidence on the interaction between governance practices, investor confidence, and long-term profitability in emerging economies remains sparse. Finally, the role of transparency and ethical practices as mediators between governance disclosures and firm performance has not been sufficiently explored, creating a need for context-specific studies in Nigerian listed companies to fill these gaps.

### Research Methodology

#### Research Design and sample size

The study employed an ex-post facto research design to investigate sample units over a defined period, enabling the examination of changes, effects, and behavioral patterns over time. The population included 46 listed manufacturing companies on the Nigerian Exchange Group (NGX) as of December 2024, with a sample of 33 firms selected from sectors including Natural Resources, Industrial Goods, Consumer Goods, Conglomerates, Healthcare, and Agriculture. Secondary data, validated by external auditors, was used, and the pooled panel technique was applied to manage missing data and analyze relationships effectively.

#### Model Specifications

The model for this study will be stated in econometrics terms below as;

$$ESGSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. I}$$

$$SRDSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. II}$$

$$GOVSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. III}$$

Where;

ESGSDI = Environmentally Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on material, energy, water, biodiversity, emission/greenhouse gas, waste management, product services and compliance to laws.

SRDSDI = Social Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on community, donation, employee, health and safety and customer/complaints.

GOVSDI = Governance Sustainable Disclosure index (measured as measures the extent of corporate Governance, Social, and Environmental (GSE) information disclosure by companies related to their GSE performance.

ROA = Return on Asset: measured as profit after tax divided by total asset (%)

ROE = Return on Equity: measured as profit after tax divided by total equity (%)

EBIT = Ebit Margin: measured as earnings before interest and taxes divided by sales (%)

EPS = Earnings Per Share: measured as net profit after tax divided by number of ordinary shares

FS = Firm Size (Measured as the natural logarithm of total assets of firm  $i$  in year  $t$ )

$f$  = functional relationship between dependent and independent variables

$\varepsilon_t$  = error term

$i$  = firm identifier

$t$  = time variable (10 Years)

$\alpha_0$  is the intercept of the regression.

$\beta_1 - \beta_5$  are the co-efficient of the regression equation.

The Apriori expectation:  $\beta_1 - \beta_5$  is lesser or greater than 0.

## Analysis and Discussion of Results

### Descriptive Statistics Analysis and Discussion

**Table 1: Summary of Descriptive for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE**

| VARIABLES | OBS | MEAN     | STD. DEV | MIN       | MAX      |
|-----------|-----|----------|----------|-----------|----------|
| ESGSDI    | 330 | .5404361 | .5249065 | -.9811688 | 3.484753 |
| SRDSDI    | 330 | .3212424 | .1661745 | 0         | .79      |
| GOVSDI    | 330 | .4002121 | .1922217 | 0         | .83      |
| ROA       | 330 | 4.45339  | 15.88686 | -71.3574  | 176.2669 |
| ROE       | 330 | 5.906927 | 106.0372 | -989.3803 | 905.423  |
| EBIT      | 330 | 23.93526 | 315.4186 | -624.4804 | 5655.464 |
| EPS       | 330 | 4.141648 | 18.67017 | -100.2626 | 202.5645 |
| FSIZE     | 330 | 16.93317 | 2.079749 | 12.83807  | 22.09412 |

Source: Regression Output, 2025.

The descriptive statistics for the variables in the study provide an overview of the distribution and variability of the data. ESGSDI (Environmental, Social, and Governance Sustainability Disclosure Index) has a mean of 0.54 with a high standard deviation of 0.52, suggesting significant variability in the level of sustainability disclosures across the sample. The minimum and maximum values of -0.98 and 3.48 indicate a wide range in the degree of ESG reporting among firms. SRDSDI (Social Responsibility Disclosure Sustainability Index) shows a mean of 0.32, with a standard deviation of 0.17, implying moderate

variation in social responsibility disclosures, and the maximum value of 0.79 suggests a limited number of firms reporting extensively on social sustainability.

ROA, ROE, EBIT, and EPS display considerable variability, particularly ROE, which has a large standard deviation of 106.04, indicating significant profit fluctuations among firms. FSIZE (Firm Size) has a mean of 16.93 and a standard deviation of 2.08, suggesting moderate variation in firm sizes across the sample. Overall, these descriptive statistics indicate a diverse sample with substantial variation in both sustainability reporting and financial performance.

### Normality Test

**Table 2: Shapiro-Wilk W test for normal data for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE**

| VARIABLES | OBS | W       | V       | Z      | PROB>Z  |
|-----------|-----|---------|---------|--------|---------|
| ESGSDI    | 330 | 0.86244 | 31.896  | 8.165  | 0.00000 |
| SRDSDI    | 330 | 0.99305 | 1.610   | 1.124  | 0.13057 |
| GOVSDI    | 330 | 0.96681 | 7.697   | 4.812  | 0.00000 |
| ROA       | 330 | 0.64588 | 82.108  | 10.394 | 0.00000 |
| ROE       | 330 | 0.30626 | 160.855 | 11.980 | 0.00000 |
| EBIT      | 330 | 0.07159 | 215.266 | 12.667 | 0.00000 |
| EPS       | 330 | 0.39663 | 139.899 | 11.651 | 0.00000 |
| FSIZE     | 330 | 0.97773 | 5.163   | 3.871  | 0.00005 |

Source: Regression Output, 2025.

The Shapiro-Wilk W test results for normality indicate that most of the variables, including ESGSDI, GOVSDI, ROA, ROE, EBIT, and EPS, significantly deviate from normality, as their p-values are below 0.05 ( $p < 0.00000$ ). This suggests that these variables are not normally distributed. However, SRDSDI and FSIZE show p-values greater than 0.05 (0.13057 and

0.00005, respectively), with SRDSDI not significantly deviating from normality, while FSIZE also fails to meet the assumption of normality. The non-normality in many financial and sustainability variables may warrant transformations or the use of non-parametric tests in subsequent analyses.

## Correlation Analysis

**Table 3: Summary of Spearman Correlation Matrix for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE, stats, stats(rho p) star(0.05)**

|               | ESGSDI   | SRDSDI  | GOVSDI   | ROA      | ROE     | EBIT   | EPS     | FSIZE  |
|---------------|----------|---------|----------|----------|---------|--------|---------|--------|
| <b>ESGSDI</b> | 1.0000   |         |          |          |         |        |         |        |
| <b>SRDSDI</b> | 0.1633*  | 1.0000  |          |          |         |        |         |        |
|               | 0.0004   |         |          |          |         |        |         |        |
| <b>GOVSDI</b> | 0.1768   | 0.6975* | 1.0000   |          |         |        |         |        |
|               | 0.0017   | 0.0000  |          |          |         |        |         |        |
| <b>ROA</b>    | 0.0176   | -0.0667 | -0.1093* | 1.0000   |         |        |         |        |
|               | 0.7503   | 0.2269  | 0.0472   |          |         |        |         |        |
| <b>ROE</b>    | -0.1067  | 0.0471  | 0.0268   | 0.0119   | 1.0000  |        |         |        |
|               | 0.0527   | 0.3942  | 0.6280   | 0.8301   |         |        |         |        |
| <b>EBIT</b>   | -0.0996  | 0.0155  | -0.0035  | -0.1022  | 0.0995  | 1.0000 |         |        |
|               | 0.0707   | 0.7796  | 0.9488   | 0.0637   | 0.0710  |        |         |        |
| <b>EPS</b>    | -0.0494  | 0.0631  | 0.0552   | -0.0031  | 0.1709* | 0.0005 | 1.0000  |        |
|               | 0.3709   | 0.2533  | 0.3174   | 0.9551   | 0.0018  | 0.9923 |         |        |
| <b>FSIZE</b>  | -0.1342* | -0.0278 | -0.1447* | -0.1108* | 0.1960* | 0.0091 | 0.5033* | 1.0000 |
|               | 0.0147   | 0.6153  | 0.0085   | 0.0444   | 0.0003  | 0.8699 | 0.0000  |        |

Source: Regression Output, 2025.

## Result of Multicollinearity Test Using Variance Inflation Factor (VIF)g

**Table 4: VIF Test Result**

| MODELS   | VARIABLES     | VIF   | 1/VIF | MEAN VIF |
|----------|---------------|-------|-------|----------|
| <b>1</b> | <b>ESGSDI</b> | FSIZE | 1.02  | 0.979420 |
|          |               | EPS   | 1.02  | 0.981551 |
| <b>2</b> | <b>SRDSDI</b> | ROA   | 1.00  | 0.995295 |
|          |               | ROE   | 1.00  | 0.996127 |
| <b>3</b> | <b>GOVSDI</b> | EBIT  | 1.00  | 0.999656 |

Source: Regression Output, 2025

## Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

**Table 5: Breusch and Pagan Lagrangian Multiplier Tests fitted values**

| MODELS   | VARIABLE      | CHI2(1) | PROB > CHI2 |
|----------|---------------|---------|-------------|
| <b>1</b> | <b>ESGSDI</b> | 6.31    | 0.0120      |
| <b>2</b> | <b>SRDSDI</b> | 1.28    | 0.2580      |
| <b>3</b> | <b>GOVSDI</b> | 0.13    | 0.7210      |

Source: Regression Output, 2025.

## Levin-Lin-Chu Panel Unit Root Test

**Table 6: Diagnostic Tests Results for all the variables at First Differencing**

| Test   | Variable | Level/1st Diff. [1(1)] | Unadjusted t | Adjusted t | p-Value | Stationarity Conclusion |
|--------|----------|------------------------|--------------|------------|---------|-------------------------|
| ESGSDI | DESGSDI  | First Difference       | -12.6223     | -3.9027    | 0.0000  | Stationary              |
| SRDSDI | DSRDSDI  | First Difference       | -12.1416     | -4.0228    | 0.0000  | Stationary              |
| GOVSDI | DGOVSDI  | First Difference       | -14.1230     | -6.6017    | 0.0000  | Stationary              |
| ROA    | DROA     | First Difference       | -19.4847     | -10.4046   | 0.0000  | Stationary              |
| ROE    | DROE     | First Difference       | -17.3456     | -8.6270    | 0.0000  | Stationary              |
| EBIT   | DEBIT    | First Difference       | -17.6658     | -9.0103    | 0.0000  | Stationary              |
| EPS    | DEPS     | First Difference       | -16.3616     | -6.7525    | 0.0000  | Stationary              |
| FSIZE  | DFSIZE   | First Difference       | -13.6143     | -6.6386    | 0.0000  | Stationary              |

Source: Regression Output, 2025

The Levin-Lin-Chu (LLC) panel unit root test results indicate that ESGSDI, GOVSDI, ROA, ROE, EBIT, and EPS are stationary at level, as their p-values are below 0.05 (0.0000), suggesting they do not contain a unit root and are suitable for further analysis without differencing. However, SRDSDI, FSIZE, and EPS are non-stationary at level, with p-values of 0.3131 and

0.5110, indicating the need for first differencing to achieve stationarity. However, after first differencing, all variables, including SRDSDI, FSIZE, GOVSDI, ROA, ROE, EBIT, EPS, and FSIZE, become stationary with p-values of 0.0000, confirming that they are free from unit roots and can be used for further regression analysis.

## Hypotheses Testing for the Model I

**Table 7a: Summary PCSE for DESGSDI DROA DROE DEBIT DEPS and DFSIZE**

| DESGSDI      | COEF.     | Panel-Corrected STD. ERR. | z     | P> z   |
|--------------|-----------|---------------------------|-------|--------|
| DROA         | -.0010466 | .0008741                  | -1.20 | 0.231  |
| DROE         | .0000578  | .000068                   | 0.85  | 0.396  |
| DEBIT        | -.0000244 | .0000263                  | -0.93 | 0.354  |
| DEPS         | .0001007  | .0013209                  | 0.08  | 0.939  |
| DFSIZE       | .1757749  | .0724723                  | 2.43  | 0.015  |
| _CONS        | -.012005  | .023353                   | -0.51 | 0.607  |
| N            |           |                           |       | 297    |
| R-squared    |           |                           |       | 0.0147 |
| Wald chi2(5) |           |                           |       | 9.24   |
| Prob > chi2  |           |                           |       | 0.0998 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model I indicate that the variables DROA, DROE, DEBIT, and DEPS do not significantly influence DESGSDI (Environmental Sustainability Disclosure Index) as their p-values are greater than 0.05 (0.231, 0.396, 0.354, and 0.939, respectively). This suggests that changes in profitability metrics such as ROA, ROE, and EBIT, along with EPS, do not have a strong relationship with environmental disclosures.

However, DFSIZE (Firm Size) has a statistically significant positive effect on DESGSDI with a coefficient of 0.1757 and p-value of 0.015, indicating that larger firms are more likely to report environmental sustainability disclosures. The R-squared value of 0.0147 suggests that the model explains a small portion of the variation in DESGSDI. The Wald chi-squared test ( $p = 0.0998$ ) indicates that, collectively, the variables are not highly significant.

### Hypotheses Testing for the Model II

**Table 7b: Summary PCSE for DSRDSI DROA DROE DEBIT DEPS and DFSIZE**

| DSRDSI                | COEF.     | Panel-Corrected |       |        |
|-----------------------|-----------|-----------------|-------|--------|
|                       |           | STD. ERR.       | z     | P> z   |
| <b>DROA</b>           | .0001547  | .0002616        | 0.59  | 0.554  |
| <b>DROE</b>           | .0000305  | .0000224        | 1.36  | 0.175  |
| <b>DEBIT</b>          | 3.90e-07  | 7.08e-06        | 0.06  | 0.956  |
| <b>DEPS</b>           | -.0001336 | .0004612        | -0.29 | 0.772  |
| <b>DFSIZE</b>         | .0347136  | .0232946        | 1.49  | 0.136  |
| <b>_CONS</b>          | -.0006151 | .0060337        | -0.10 | 0.919  |
| <b>N</b>              |           |                 |       | 297    |
| <b>R-squared</b>      |           |                 |       | 0.0068 |
| <b>Wald chi2(5)</b>   |           |                 |       | 5.49   |
| <b>Prob &gt; chi2</b> |           |                 |       | 0.3592 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model II indicate that none of the profitability metrics (DROA, DROE, DEBIT, DEPS) significantly affect DSRDSI (Social Responsibility Disclosure Sustainability Index), as all p-values exceed 0.05 (0.554, 0.175, 0.956, and 0.772, respectively).

This suggests that changes in profitability do not strongly influence social sustainability disclosures. The R-squared value of 0.0068 suggests that the model explains very little variation in social sustainability disclosures.

### Hypotheses Testing for the Model III

**Table 7c: Summary PCSE for DGOVSDI DROA DROE DEBIT DEPS and DFSIZE**

| DGOVSDI               | COEF.     | Panel-Corrected |       |        |
|-----------------------|-----------|-----------------|-------|--------|
|                       |           | STD. ERR.       | z     | P> z   |
| <b>DROA</b>           | .0006196  | .0006985        | 0.89  | 0.375  |
| <b>DROE</b>           | -.0000533 | .0000377        | -1.41 | 0.157  |
| <b>DEBIT</b>          | 9.53e-06  | .0000331        | 0.29  | 0.773  |
| <b>DEPS</b>           | .0004599  | .0003977        | 1.16  | 0.247  |
| <b>DFSIZE</b>         | .0225629  | .0299752        | 0.75  | 0.452  |
| <b>_CONS</b>          | -.0042591 | .0104903        | -0.41 | 0.685  |
| <b>N</b>              |           |                 |       | 297    |
| <b>R-squared</b>      |           |                 |       | 0.0142 |
| <b>Wald chi2(5)</b>   |           |                 |       | 9.10   |
| <b>Prob &gt; chi2</b> |           |                 |       | 0.1050 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model III show that none of the profitability metrics

(DROA, DROE, DEBIT, DEPS) significantly influence DGOVSDI (Governance Sustainability Disclosure Index), as all p-values are above 0.05 (0.375, 0.157, 0.773, and 0.247, respectively). This indicates that profitability metrics do not have a strong impact on governance sustainability disclosures. DFSIZE (Firm Size) also does not have a statistically significant effect on DGOVSDI (p = 0.452). The R-squared value of 0.0142 suggests that the model explains a very small proportion of the

variation in governance disclosures. The Wald chi-squared statistic of 9.10 (p = 0.1050) further indicates that the model is not statistically significant, and the explanatory variables do not collectively influence governance sustainability disclosures in the sample.

### Discussion of Findings

The results of the hypotheses testing across the three models indicate varied impacts of profitability metrics on sustainability disclosures. In Model I (environmental sustainability disclosure index, DESGSDI), profitability metrics such as ROA, ROE, EBIT, and EPS show no significant relationship with environmental disclosures, as indicated by their high

p-values (0.231, 0.396, 0.354, and 0.939, respectively). However, DFSIZE (firm size) has a significant positive effect on DESGSDI ( $p = 0.015$ ), suggesting that larger firms tend to report more on environmental sustainability, possibly due to better resources and regulatory pressure (Khan, et al. 2021; Ali, et al. 2018). The R-squared value of 0.0147 suggests that the model explains only a small portion of the variation in environmental sustainability disclosures.

In Model II (social responsibility disclosure sustainability index, DSRDSI), none of the profitability metrics or firm size show a significant relationship with social disclosures, as all p-values exceed 0.05. The R-squared value of 0.0068 and the Wald chi-squared result of 5.49 ( $p = 0.3592$ ) indicate that the model is not significant in explaining social sustainability disclosures.

In Model III (governance sustainability disclosure index, DGOVSDI), similar results are found, with no significant effects from ROA, ROE, EBIT, EPS, or DFSIZE on governance disclosures. The R-squared value of 0.0142 and the Wald chi-squared statistic of 9.10 ( $p = 0.1050$ ) indicate that governance disclosures are not strongly influenced by profitability metrics in this study.

These findings align with previous research, which suggests that in emerging markets, profitability may not always correlate directly with sustainability reporting due to varying regulatory environments and organizational priorities (Bose, et al. 2022; Nmer, et al. 2021).

## Summary, Conclusion and Recommendations

### Summary of Findings

- i. For Environmental Sustainability Reporting, the analysis shows no significant effect of profitability metrics (ROA, ROE, EBIT, EPS) on DESGSDI (environmental sustainability disclosure). Therefore, the null hypothesis is accepted.
- ii. For Social Sustainability Disclosures, Profitability metrics and firm size have no significant impact on DSRDSI (social sustainability disclosure). The null hypothesis is accepted.
- iii.  $H_{03}$  (Governance Sustainability Disclosures): Profitability metrics and firm size do not significantly affect DGOVSDI

(governance sustainability disclosure). The null hypothesis is accepted.

### Conclusion

This study concludes that profitability metrics for the study which includes ROA, ROE, EBIT, and EPS, do not significantly impact environmental, social, or governance sustainability disclosures (DESGSDI, DSRDSI, DGOVSDI) in emerging market industries. The findings suggest that in emerging markets, sustainability disclosures are influenced by factors other than profitability, particularly organizational size. These results highlight the complexity of sustainability reporting and the need for further investigation into other potential drivers within these markets.

### Recommendations

- i. Policy-makers should develop clearer sustainability reporting standards to encourage greater transparency and uniformity in disclosures across industries.
- ii. Companies in emerging markets should invest in improving their sustainability reporting practices, particularly in the environmental sector, to align with global standards and attract investors.
- iii. Future research should explore other factors, such as regulatory pressures and corporate culture, that may influence sustainability disclosures in emerging market industries.
- iv. Investors should consider firm size and governance practices when assessing sustainability performance, as these factors appear more impactful than profitability metrics.

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## Emotional Branding and Consumer Purchase Decision of Indomie Nigeria.

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### Abstract

*The study examined the effect of emotional branding on consumer purchase decision of Indomie Nigeria. The specific objectives are to: ascertain the effects of storytelling on consumer purchase decision assess the effect of customer centrism on consumer purchase decision and determine the effect of service personalization on consumer purchase decision. The study adopted the descriptive survey research design method specifically, a cross sectional survey design. The population of the study consists of 551 persons to whom the research was generalized. From the population, a workable sample size of 231 was derived. The study adopted the simple random sampling technique. The study used structured questionnaire as instrument of data collection. To establish the reliability of the instrument, a test-retest method was used. The descriptive statistics, correlation and multiple regression analysis were used to analyze the data collected. The data collected was analyzed by using the statistical package for social sciences (SPSS) software version 25.0. Finding showed that story telling ( $\beta = 0.134$ ,  $p = 0.005 < 0.05$ ), customer centrism ( $\beta = 0.198$ ,  $p = 0.002 < 0.05$ ), and service personalization ( $\beta = 0.143$ ,  $p = 0.004 < 0.05$ ), have significant positive effect consumer purchase decision. Findings showed that emotional branding practices were responsible for 53% of the changes in consumer purchase decision. The study concluded that emotional branding has significant and positive effects on consumer purchase decision. The study recommended amongst others that when making decisions on brand selection, marketers should take into account multiple data factors. These include the manager's area of expertise within the sector, the extent of their audience engagement, the platform they operate on, and the overall reach they possess. The study demonstrated that how the emotional brand is mentioned verbally by reputable personality creates brand image.*

**Keywords:** Emotional Branding, Consumer Purchase Decision, Storytelling, Customer Centrism, Service Personalization

### Introduction

In today's world of competition, competitors spend a lot of money on branding. Emotional branding often aims to get the customer's attention, and it also uses branding to outperform competitors by gaining a competitive advantage. There are various methods that marketers can use in their branding to achieve brand objectives. In addition to these tricks, embracing emotion in branding has always been an indispensable tool for building

and maintaining strong brand equality (Kamran & Siddiqui, 2019). Brands that have emotional values & messages are more likely to associate the consumer with branding. Normally, when consumers are exposed to branding, a portion of their long-term memory is activated, thereby stimulating their buying behavior (Ramsaran, Hanuman, & Sathan, 2022). Marketers use emotional branding elements such as love, humor, happiness and excitement in advertisements. These feelings have the potential to

attract customer attention and retain them connected with the brand. As people grow, they devote more assets and make more dynamic contributions to managing and managing their emotions (Shahid, Bilal, & Majid, 2023).

Emotional branding is a compelling strategy harnessing human emotions to forge robust connections between consumers and brands or products. Its multifaceted influence on consumer behaviour (Kshitiz Sharma, Pratyusha Kodhati, Suma Sukhavasi, 2022) unveils the profound impact emotions wield on purchase decisions. Research reveals the intricate interplay between rationality and emotions, notably in social settings, where choices are influenced. Emotions are pivotal in consumers' decision-making processes (Vishal Soodan, Akhilesh Chandra Pandey, 2021) emphasizing the need to comprehend audience emotions for effective branding.

Brand storytelling aims to create empathy between a brand and its audience by connecting the company's values with those of its customers. Establishing an emotional connection with the audience is crucial for effectively conveying compelling brand narratives and reinforcing customer retention. This particular advertising approach has a tendency to elicit emotional responses from consumers, particularly when integrated into narratives that aim to enhance the customer experience, so fostering brand recognition and establishing a robust brand value (Teraiya, Namboodiri, & Jayswal, 2023).

### **Statement of the Problem**

In current competitive and complex marketing situations in the consumer goods sector, many firms are facing severe challenges in motivating and retaining its customers. Many of these brand features an emotional expression that attracts the consumer because of their liking for a particular product or service. If a brand contains an emotional expression, it will succeed in trying to attract the customer. The diversified population in Delta state and her rich cultural background create a unique setting for the intersection of storytelling and fast moving consumer goods companies. The distinctive traits of the region provide marketers with a chance to fulfil both the physical and emotional needs of consumers. Brand storytelling is

becoming crucial in a saturated market, enabling organizations to differentiate themselves by creating storylines that connect with local beliefs and values. The ideas, vision statement, history, or origin of a brand are all parts of its story. Companies can illustrate to customers how their offerings can make a difference by telling tales about and customers are able to form an emotional connection with brands through stories because they provide a framework for integrating brand identification.

Consequently, increasing competition along with the relative similarity of fast moving consumer products and services has changed customers' behaviour. In this way firms can avoid the harmful consequences of turning away customers and improve their long-term relationships with them. Especially in competitive market space, the importance of service personalization is due to the nature of customer perceptions about a particular brand. Despite the importance of this issue, there is little research on its impact on decision-making processes in the field of service personalization. Since emotions change people's decisions, it is important to discuss how branding changes consumers' purchasing behaviour. Therefore, present study aims to study the impact of emotional branding on consumers purchase intention of Indomie brands. Hence, the study could fill the empirical gap in literature and there is an emerging need to conduct the study.

### **Research Objectives**

This main objective of this study to examine the effect of emotional branding on consumer purchase decision of Indomie Nigeria. The specific objectives are to:

- i. examine the effect of storytelling on consumer purchase decision of Indomie Nigeria
- ii. determine the effect of customer centrisms on consumer purchase decision of Indomie Nigeria
- iii. ascertain the effect of service personalization on consumer purchase decision of Indomie Nigeria

The research questions and hypotheses are in line with the research objective

This study will provide a better understanding of the nuanced ways in which emotional branding appeals can be harnessed to build brand loyalty, engage consumers, and drive business success within this specific sector, it will be useful to future researchers and the government. The study was carried out in Abraka Delta State and the unit of analysis were the consumers of Indomie brands residing in Abraka.

## **Review of Related Literature**

### **Emotional Branding**

Branding is just an example of how to reach the consumer by generating emotional relationships, however, the concept of emotional branding not only involves branding through emotions, but also generating feelings in products or making the brand visible (Titz, 2019). Brand awareness is the essential component of brand equity. Brand awareness describes people's perception and cognitive reaction to a circumstance or event Eboh & Edeme (2024). Emotional branding was defined by Consoli (2019) as the ability to communicate and deliver specific messages through various techniques that evoke feelings and emotions.

On the other hand, Deshwal (2022) defined the concept of emotional branding and advertising efforts that use emotion in moving customers 'feelings and memories when purchasing, meaning that it indulges in influencing customers' emotions such as stirring up happiness, sadness, anger and fear in order to obtain the customer's response and interaction. From another perspective, Drugău-Constantin (2018) defined the concept of emotional branding as the ability to communicate powerfully through the use of different techniques that evoke feelings by adopting an emotional branding strategy that focuses on diverse issues to convey an emotional branding message. Babaei, Casalo and Flavian (2017) saw that emotional branding messages aim to satisfy the psychological desires of customers, such as making them feel smart, beautiful, and elegant, or any feeling that touches self-esteem and self-confidence, in addition to other passions that may be negative, such as fear, sadness and panic that in turn affect the purchase decision. And repeat purchases. Emotional branding is an example of how to reach the consumer through creating emotional relationships, but the concept of emotional branding

not only includes promoting a brand and reaching customers through emotions, but also generating feelings in products in order to make the brand visible.

### **Storytelling**

Storytelling can be regarded as a transformative experience for the recipient, wherein the act of embarking on this experiential journey evokes novel emotions and ultimately leads to the phenomenon of persuasion or even behavioural change (Aaker, Gerbinsky & Vohs, 2012). The utilization of narratives and the act of narrating are crucial in attaining a comprehensive comprehension of consumer psychology (Escalas, 2024). The impact of storytelling marketing on consumer purchase behaviour; the act of storytelling elicits a sense of consumer participation in the experiential aspects associated with the utilized product. Story telling is a tool to promote a product by relying more on the power of the story behind the process of making a product until the product is finished and ready to be marketed by prioritizing feelings to involve the emotions of potential buyers in making a product purchase decision, with the hope that from the story experience, consumers are able to market by word of mouth, (Kaufman, 2023). Perceived quality enables a business to generate purchasing reasons for their customers and build a strong component to differentiate and position its product or service Eboh and Edeme (2024). In building the image of a brand and its philosophy, story-telling is considered capable of translating what a product hopes to bridge the technical aspects of the production process until it becomes a product that is ready to be launched to the market, storytelling has become a good medium to translate all the manufacturer's longings. Building emotions and feelings from potential buyers, towards a product and its attached brand, so it can be concluded that through story telling a product can have a soul and life. In the end, storytelling has become part of today's marketing strategy because it is considered capable of building prospective buyers' emotions in determining purchasing decisions, (Fongo, Fanggidae & Fanggidae, 2019).

### **Customer Centric**

The literature on customer-centric strategies within the realm of marketing management is extensive and multifaceted, reflecting the growing recognition of the pivotal role that customers play in shaping business outcomes. Recent research by Rust et al. (2020) has emphasized the evolving nature of customer expectations, driven by advancements in technology and shifts in societal values. In today's hyperconnected world, consumers demand seamless and personalized experiences across all touchpoints, from initial awareness to post-purchase support. As such, organizations must adopt agile and responsive strategies that prioritize flexibility, adaptability, and continuous innovation (Grewal, Roggeveen & Norlfalt, 2021). The proliferation of digital platforms and social media has empowered consumers with unprecedented access to information, amplifying their voices and influence in the marketplace (Hollebeek, Voorhees & Vannieuwenhuyze, 2019).

### **Service Personalization**

Service personalization is identified as providing the appropriate item and consumer service to the appropriate consumer at the correct time (Sunikka & Bragge 2022). It was commonly used to refer to segmentation, targeting, and profitability, while some studies use it to refer to one-on-one marketing. Businesses utilize service personalization as a way to save costs, increase accessibility, and adjust products (McCarthy, 2021). Service personalization is a component of a firm's customer relationship management whereby the company receives consumer data from a process of interaction between consumers and brands, and the process of gathering data involves learning relationships (Peppers, 2019). Therefore, according to Murthi and Sarkar (2023), service personalization is a way of gaining knowledge regarding consumers' requirements, correlating products to those preferences, and analyzing businesses' attempts to meet those needs. Service personalization could be used online and is built into the system to make website layouts more attractive (Peppers, 2019).

According to Adomavicius and Tuzhilin (2015), service personalization is a cycle of Understanding-Delivering-Measuring that correlates with three-

phase personalization conceptualization: understand what consumers need, match what consumers require with available options, and assess the results of prior phases (Murthi & Sarkar, 2023). Also, personalization is considered as an effective marketing communication system formed from a two-way system, the ability to regulate answers from each part in the process of communication, a data application, and an individualized communication connection (Peltier, 2023). The service personalized experience in online shopping can be made more personalized, which has the potential to improve consumer satisfaction and the effectiveness of consumer interactions. Trade effectiveness and tailored product suggestions for suitable consumers are both believed to have substantial potential (Shaw, 2023).

### **Consumer Purchase Decision**

Consumer buying interest is related to the desire to choose and consumer products or services where interest arises because it is influenced by the quality and strength of the product and even the information obtained by consumers. Usually this interest is influenced by transactional, referential and exploratory (Algiffary, Wahab, Shihab & Widiyanti, 2020; Mustika, 2023). In buying interest there are decisions that must be made by potential consumers. This decision can be continued to buy or cancel. Consumer decisions are also related to the choices that potential consumers have to make regarding the products and services offered, where this is influenced by the period, place, product choice, brand, supplier, quantity and method of payment (Peter, & Olson, 1990; Kotler and Keller, 2016). Connected to the focus of story-telling marketing products that explain a manufacturing process, methods, time and ongoing issues from the basic ingredients of mocktail products, namely from salak seeds, affect consumers in determining attitudes, deciding to buy and at the same time recommending this product to others.

### **Theoretical Review**

This work is anchored on the Aristotle's rhetorical theory.

### **Aristotle's Rhetorical Theory**

Aristotle defined rhetoric as the ability to discern the persuasive techniques applicable in a given context, which he classified into logos (logical argument), ethos (ethical proof), and pathos (emotional proof) (Borchers, 2015). Logos emphasizes the utilisation of logical reasoning in the statements made by speakers. Logos is an essential tool that enables buyers to make an objective assessment by examining the textual elements in a green brand narrative, demonstrating the credibility of a green brand. The use of pathos appeals to the target consumers by aligning with their ideas and wants, thereby producing a sense of cheerfulness. Ethos refers to the linguistic choices made by speakers to showcase their credibility, goodwill, or behaviour. Pathos is a rhetorical strategy that aims to evoke strong emotions or sensations in the listener (Bonet & Sauquet, 2010).

In order to persuade two parties with differing perspectives to reach common ground, it is essential to utilise the principles of logos, ethos, and pathos (Panigyrakis, Panopoulos, & Koronaki, 2020). Ethos pertains to the trustworthiness, dependability, and assurance that buyers derive from a green brand's professional knowledge and green business certifications as presented in the brand's narrative (Higgins & Walker, 2012; Chu, Deng, & Chuang, 2014). Essentially, ethos is essential for ensuring the genuineness of a green brand. The concurrent usage of the three methods of persuasion improves the effectiveness of communication (Yang, Lee, Lee, & Koo, 2018). Aristotle's rhetorical theory has been utilised in many fields such as advertising, industrial communication, and e-commerce marketing (Murthy & Gosal, 2016; Yang et al. 2018). Contemporary rhetorical analysis primarily examines and assesses modern marketing strategies, rather than engaging in the criticism of old marketing controversies. Employing the three techniques of persuasion in brand storytelling aids in effectively captivating consumers and addressing their concerns (Huang, Zhuang, Li, & Gao, 2022). Brand sincerity is said to arise from the value-expressive attributes of a brand.

### **Empirical Review**

Akbar (2024) examined the significance of customer-centric strategies in marketing management and their implications for

organizational success. Adopting a literature review approach, this research synthesizes insights from various disciplines to elucidate the multifaceted nature of customer centricity. The research design employs a qualitative approach, drawing on existing scholarship to elucidate key concepts and frameworks in customer centricity. The findings highlight the paramount importance of prioritizing customer needs and preferences, aligning organizational culture and processes with customer goals, and leveraging technological innovations to enhance customer experiences. The discussion underscores the challenges and opportunities presented by the digitalization of commerce, emphasizing the need for organizations to adapt and innovate in response to changing consumer behaviors and market dynamics. The implications of this study extend to both theory and practice, offering valuable insights for academics, practitioners, and policymakers alike. By embracing a customer-centric mindset and integrating interdisciplinary perspectives, organizations can develop robust strategies that drive sustainable competitive advantage in today's dynamic markets. Onobrakpeya and Onyenanu (2024) explored the effect of brand storytelling on customer retention in non-alcoholic beverage industry in Delta state, Nigeria. This study used a cross-sectional survey research approach. The study focused on customers of non-alcoholic beverage companies in Delta state. The Cochran formula was used to calculate the sample size of 384. The study used the judgmental sampling technique. The researchers designed a structured questionnaire to collect data directly from customers. The test-retest reliability method was employed to determine the instrument's reliability. The data collected for the study were analysed using frequencies, percentages, correlation and multiple regression analysis to arrive at a conclusion. Findings showed that the dimensions of brand storytelling explained 46% of the variations in customer retention. Genuine brand stories, brand emotional connection and consistent brand narrative has significant positive effect on customer retention. The study concluded that brand storytelling has a significant positive effect on customer retention in Delta state non-alcoholic beverage industry. The study recommended amongst others that firms



should regularly review and update their narrative to align with evolving consumer preferences and market trends while maintaining the core essence of the brand. This consistency not only reinforces the brand identity but also helps consumers easily recognize and remember the non-alcoholic beverages in a competitive market

Yuang and Abhijit (2023) examined the influence of personalized search engine (SE) advertising on consumers' trust and purchase intentions in the context of Hong Kong. With the growing emphasis on personalized advertising strategies, understanding their impact on consumer behavior is crucial for marketers and advertisers. The study will adopt a quantitative research approach, using an online survey to collect data from a sample of Hong Kong consumers. The survey will measure participants' exposure to personalized SE advertising, their levels of trust in the advertisements, and their purchase intentions. Data analysis will involve statistical techniques, such as regression analysis, to identify the relationship between personalized SE advertising, trust, and purchase intentions. The findings of this study will contribute to the existing literature on personalized advertising and consumer behavior, providing insights into the effectiveness of personalized SE advertising in influencing trust and purchase intentions among Hong Kong consumers.

## Methodology

### Research Design

The study employed cross sectional survey research design method which is descriptive in nature and Descriptive survey research design method was preferred for this study because it facilitated the collection for a considerable amount of data quickly, efficiently and accurately.

### Population of the Study

The target population comprised of 574 (purposive) consumers of Indomie. The procedure of drawing samples from the population is known as sampling. To be precise, the sample size of this study consists of two hundred and thirty one (231) members

(consumers) of the organization under study operating in Abraka, Delta State

### Sample Size Determination

The formula developed by Taro Yamane offers a streamlined approach for determining the appropriate sample size. Additionally, it was employed for the aim of determining an optimal sample size based on the size of the population and a predetermined desired margin of error. It is given as:

$$n = \frac{N}{1 + N(e^2)}$$

Where n = sample size.

N = population.

e = level of significance.

Therefore the sample size of 231 was derived thus:  $n = 547 / 1 + 547(0.05)^2$

$$n = 547 / 1 + 1.3675$$

$$n = 547 / 2.3675$$

$$n = 231.$$

A sample size of 231 was obtained from the population using Taro Yamane's formula.

### Sampling Technique

The study adopted stratified sampling techniques to minimize the degree of bias of the respondents' opinion.

A five likert questionnaire was used to collect quantitative data from the respondents. The questionnaire had closed-ended questions divided into sections that represent the different variables of the study.

The researcher adopted a questionnaire survey method to collect primary data from consumers of Indomie, located in Abraka, Delta State. The questionnaire was given to Marketing professionals and other field experts, to enhance the instrument's validity, the researcher sought expert opinion by consulting other experts in respect to content validity. The study data underwent analysis using the statistical package for social sciences (SPSS) software, specifically version 25.

## Results and Discussion

**Table 1 Response Rate**

| Pattern focused | Number administered | Number returned | Unused copies | Number used | Response rate |
|-----------------|---------------------|-----------------|---------------|-------------|---------------|
| Employees       | 231                 | 227             | 5             | 222         | 96%           |

Source: Distributed Questionnaire

Among the total of 231 distributed copies of questionnaire, a substantial majority of 227 copies of questionnaire were successfully retrieved. However, a small fraction of 5 copies of questionnaire were found to be incomplete, leaving a final count of 222

fully completed and usable copies of questionnaire. Consequently, the analysis conducted in this chapter was based on the 96% response rate of the data collected.

**Table 2 Analysis of Respondents Profile**

| S/N | Event                                                                     | Frequency              | Percentage (%)        |
|-----|---------------------------------------------------------------------------|------------------------|-----------------------|
| 1   | Gender:<br>Male<br>Female<br>Total                                        | 110<br>112<br>222      | 50<br>50<br>100       |
| 2   | Age Range:<br>Below 30 years<br>31-40 years<br>41years and above<br>Total | 85<br>76<br>61<br>222  | 38<br>34<br>28<br>100 |
| 3   | Marital Status:<br>Single<br>Married<br>Total                             | 107<br>115<br>222      | 48<br>52<br>100       |
| 4   | Educational Qualification<br>OND/NCE<br>HND/B.Sc<br>Master<br>Total       | 86<br>123<br>13<br>222 | 39<br>55<br>6<br>100  |

Source: Field Survey, 2025.

The table above presents the background characteristics of the diverse respondents. The data revealed that the respondents were evenly distributed in terms of gender, with 50% of the sample being male and the remaining 50% being female. The data on the age distribution of the respondents indicates that 38% of the participants were below the age of 34. Additionally, 34% of the respondents fell within the age range of 31-40 years,

while 28% of the participants were above the age of 41. The analysis of the respondents' marital composition revealed that 48% of the participants were categorised as single, and the remaining 52% were classified as married. Regarding the educational background of the sample, it was observed that 39% of the respondents possessed OND/NCE qualifications. Additionally, the findings revealed that 55% of the respondents held

HND/B.Sc. degrees, whereas 6% of the remaining respondents possessed master's degrees.

In this section, analysis was conducted on the data collected to draw a conclusion and create generalizations. Additionally, the hypotheses proposed in the previous chapter were tested.

#### Analysis of other Research Data

**Table 3 Inter-Correlations and Descriptive Statistics for Study Variables**

| Variable                      | 1      | 2       | 3     | 4 | N   |
|-------------------------------|--------|---------|-------|---|-----|
| 1. Storytelling               | 1      |         |       |   | 222 |
| 2. Customer Centristm         | 0.160* | 1       |       |   | 222 |
| 3. Service Personalization    | 0.018  | 0.303** | 1     |   | 222 |
| 4. Customer Purchase Decision | 0.133* | 0.569** | 0.131 | 1 | 222 |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 4 The guideline for Pearson correlation coefficients**

| S/N | Coefficient value | Strength of association     |
|-----|-------------------|-----------------------------|
| 1   | $< r < 0.3$       | Small correlation           |
| 2   | $0.3 < r < 0.5$   | Medium/moderate correlation |
| 3   | $r > 0.5$         | Large/strong correlation    |

Source: Based on Cohen (1988)

Table 4.3 showed the inter-correlations and descriptive statistics for study variables. The correlation model exhibited the extent of valuable relationship that exists among the variables in this study. Story telling showed a positive correlation coefficient with consumer purchase decision (0.286\*\*) which means that influencer reach is a good measure of emotional branding practices. Customer centristm showed a moderate positive correlation coefficient with consumer purchase

decision (0.460\*\*) which implies that customer centristm is a moderate and good measure of emotional branding practices.

Service personalization showed a positive correlation coefficient with consumer purchase decision (0.112\*) but extant literature showed that service personalization effect is a strong and good measure of emotional branding practices.

**Table 5 Regression Analysis of Emotional Branding and Consumer Purchase Decision Coefficients<sup>a</sup>**

| Model                   | Unstandardized Coefficients |            | Standardized Coefficients |       |      | Collinearity Statistics |       |
|-------------------------|-----------------------------|------------|---------------------------|-------|------|-------------------------|-------|
|                         | B                           | Std. Error | Beta                      | T     | Sig. | Tolerance               | VIF   |
| 1 (Constant)            | .995                        | 2.300      |                           | .433  | .666 |                         |       |
| Story Telling           | .228                        | .080       | .134                      | 2.842 | .005 | .952                    | 1.051 |
| Customer Centristm      | .195                        | .061       | .198                      | 3.187 | .002 | .544                    | 1.839 |
| Service Personalization | .118                        | .041       | .143                      | 2.889 | .004 | .855                    | 1.170 |

a. Dependent Variable: **Consumer Purchase Intention**

The model below shows the study hypotheses formulation:

$$Y = \beta_0 + \beta_1 ST + \beta_2 CE + \beta_3 BA + e \dots \dots \dots (iii)$$

$$BP = .995 + (0.228 \times ST) + (0.195 \times CC) + (0.118 \times SP)$$

Table 5 showed that story telling has significant and positive effect on consumer purchase decision ( $\beta$

=0.134,  $p=0.005 < 0.05$ ), customer centrisim has significant and positive effect on consumer purchase decision ( $\beta = 0.198$ ,  $p=0.002 < 0.05$ ), service

personalization has significant effect on consumer purchase decision ( $\beta = 0.143$ ,  $p=0.004 < 0.05$ ).

**Table 6 Fitness of the Model (Analysis of Variance)**

| ANOVA <sup>a</sup> |            |                |     |             |        |                   |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | Df  | Mean Square | F      | Sig.              |
| 1                  | Regression | 374.676        | 5   | 74.935      | 51.888 | .000 <sup>b</sup> |
|                    | Residual   | 311.941        | 216 | 1.444       |        |                   |
|                    | Total      | 686.617        | 221 |             |        |                   |

a. Dependent Variable: Brand performance

b. Predictors: (Constant), Story Telling, Customer Centrisim, Service personalization

In table 6 the *F*-ratio measures how well the total regression model fits the data. According to the table,  $F= 51.888$ ,  $0.000 < 0.05$ , the elements of emotional branding practices strongly predict consumer

purchase decision. This has the consequence that the regression model fits the data well and is extremely significant for the research.

**Table7 Model Summary**

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .739 <sup>a</sup> | .546     | .535              | 1.202                      |

a. Predictors: (Constant), Story Telling, Customer Centrisim, Service personalization

The R Square value in Table 4.6 indicates how much the emotional branding components contributed to changes in consumer purchase decision. According to this value, emotional branding practices are responsible for 55% of these changes. The R Square calculates the percentage of the dependent variable's variance that can be accounted for by changes in the predictor variable.

### Test of Research Hypotheses

Since the *p*-value critical is at 0.05 (5%) i.e. the level of significance is lesser than the calculated level of significance ( $0.005 < 0.05$ ) in table 4.4, the null hypothesis was rejected while the alternate hypothesis was accepted. This implies that adoption of storytelling does have significant effect on consumer purchase decision of Indomie customer centrisim does not have significant effect on consumer purchase decision of Indomie Table 4.4 showed that the calculated level of significance, which is ( $0.002 < 0.05$ ), is less than the *p*-value of 5%.Based on this result, the null hypothesis was rejected and the alternate hypothesis

was accepted implying that customer centrisim does have significant effect on consumer purchase decision of Indomie

The level of significance that was calculated in table 4.4 is lesser than the established *p*-value ( $0.004 < 0.05$ ), therefore the null hypothesis was rejected while the alternate hypothesis was accepted which states that there is significant effect between service personalization and consumer purchase decision of Indomie

### Discussion of findings

In accordance with the data analysis done in chapter four and the review of the related literature in chapter two, the discussion of findings of this study is presented below.

Table 4 showed that story telling has significant and positive effect on consumer purchase decision ( $\beta = 0.134$ ,  $p=0.005 < 0.05$ ).Test of H1 showed that story telling has significant and positive effects on consumer purchase decision ( $0.005 < 0.05$ ). Table 4 showed that customer centrisim has significant and positive effect on consumer purchase decision ( $\beta$

=0.198,  $p=0.002 < 0.05$ ). Test of H2 showed that customer engagement has significant positive effects on consumer purchase decision ( $0.002 < 0.05$ ). The attitudes, information adoption, and behavioural intents of customers can be influenced by the quality of information (Hussain, Song, & Niu, 2020). The impact of low-quality information, characterised by its inaccuracy, incompleteness, and lack of realism, can significantly influence consumers' perception outcomes and subsequent behavioural choices, thereby leading to detrimental consequences.

Table 4 showed that customer centricism has significant and positive effect on consumer purchase decision ( $\beta = 0.143$ ,  $p=0.004 < 0.05$ ). Test of H2 showed that customer centricism has significant positive effects on consumer purchase decision ( $0.004 < 0.05$ ). This findings agrees with Akbar (2024) examined the significance of customer-centric strategies in marketing management and their implications for organizational success. Adopting a literature review approach, this research synthesizes insights from various disciplines to elucidate the multifaceted nature of customer centricity.

Service personalization was found to have significant effect in consumer purchase decision ( $\beta = 0.252$ ,  $p=0.000 < 0.05$ ). Test of H3 showed that service personalization has significant positive effects on consumer purchase decision ( $0.006 < 0.05$ ). This discovery aligns with Catbagan, Torres and Castaño (2022) provided information to financial institutions, particularly the banking sector that nowadays is going through a diverse change in strategic approach.

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- Conclusion**
- The main objective of the study examined emotional branding and consumer purchase decision of Indomie Nigeria using data obtained through structured questionnaire distributed to the customers of Indomie Nigeria. After analyzing the collected data from 231 respondents, the study concluded that the dimensions of emotional branding had significant effects on consumer purchase decision. The study further concluded that emotional branding practices have significant and positive effects on consumer purchase decision, the results of the regression analysis shows that the dimension of emotional branding practices identified in this study contributes significantly to consumer purchase decision.
- Recommendations**
- After close examination and analysis of the research findings, the following recommendations are suggested:
- i. Managers of fast moving consumer goods firms should continue to encourage competencies to promote emotional branding campaign and assigning tasks to the right individuals and to monitor the brand management process of their products and support services.
  - ii. Firms should try to exercise discernment when selecting their collaboration partners, taking into account their personal brand and the expectations of their audience. It is crucial for them to align themselves with brands that they can genuinely promote.
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## Understanding Digital Inclusion and its Implications for Public Service Delivery in Nigeria.

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### Abstract

*This study critically examines the understanding of digital inclusion and its implication to public service delivery in Nigeria. The study adopted an historical design and made use of thematic analysis for the rich empirical qualitative data from several literature. The research was underpinned on e-governance, digital divide and public value theory respectively as a lens of digital innovation and inclusion and they impact public service delivery in Nigeria. The study finds that digital inclusion has significantly transformed public service delivery in Nigeria, particularly through platforms such as NIMC, JAMB, FIRS, and NIS. These innovations have improved efficiency, reduced bureaucratic bottlenecks, enhanced transparency, and broadened access to government services. However, the uneven distribution of ICT infrastructure, persistent digital illiteracy, and affordability barriers reveal that the benefits of digital inclusion are not evenly felt across Nigeria. While urban populations benefit more, rural and disadvantaged citizens remain at risk of exclusion, raising equity and inclusiveness concerns. The therefore, recommended that Digital Infrastructure should be Expand, Digital Policy Implementation should be sstrengthenens and there should be Public-Private Partnerships in areas of digital innovations to increase accessibility.*

**Key words:** Digital Inclusion, Digital Innovations, Digital Public Service Delivery

### Introduction

One of the core responsibilities of a government and its institution is to provide effective and high-quality services to its citizens, regardless of their status, age, religion, residential location, or other factors. Nigeria, as a state situated in the West African zone, is the most populous state in Africa with over 200million citizens. By this implication, the government is expected to provide quality and effective services to the vast universe. It becomes more cumbersome to rely on traditional methods of service delivery, such as physical office space, letter writing, physical filling of forms, and dissemination of vital information through newspapers, making applications through physical office space, because such an act has led to slow and ineffective service delivery to Nigerians and most especially the rural populace. Public service is the apparatus of government that is deployed to transcend governmental policies, programmes and responsibilities to the populace. At the same time, the delivery is a conveyor belt through which all citizens feel the government's presence, responsibilities, policies, and programmes. This state cuts across the board in terms of urban and rural dwellers.

To achieve a widespread quality, effective and timely government service delivery to its citizens,

there was a need for a paradigm shift from traditional mechanisms of rendering services to a digital perspective. This paradigm shift will bring holistic inclusion in areas of public service delivery in the Nigerian populace. Digital inclusion in public service delivery is viewed as a government service that is delivered to citizens through innovative technologies, such as governmental e-portals, mobile apps, or SMS, aimed at spreading effective and timely service delivery to both urban and rural populations. Digital technologies aim to enhance efficiency and service quality by reducing time wastage, reaching a wider number of citizens at a reduced cost, and can lead to increased transparency, enabling seamless organisational cross-service delivery, such as from NIMC to JAMB to higher institutions and to NYSC in Nigeria. Digital inclusion breaks the barriers of accessibility. Nigerians have experienced poor service delivery in the past, for instance, the registration and correction of national identification cards at physically designated centres, adolescents staying late in JAMB registration centres to obtain their JAMB registration, and individuals queuing to sort out tax-related issues. This phenomenon has led to loss of valuable lives, properties, time and resources. Therefore, it is essential to comprehend digital inclusion and its implications for public



service delivery in Nigeria, in order to determine whether it has a positive or negative impact.

### Statement of the Problem

Digital inclusion has become a cornerstone of modern governance, enabling states to improve efficiency, transparency, and citizen engagement in public service delivery to the majority of their universe. The Nigerian state is aggressively pursuing a digital innovation and inclusive future to deliver public services to its vast population by launching a suite of e-government platforms, mobile apps, and SMS/USSD platforms designed to streamline services, enhance transparency, and curb corruption. In recent years, Nigeria has made notable strides in deploying digital technologies across public service institutions, including the Federal Inland Revenue Service (FIRS), the Nigeria Immigration Service (NIS), and the National Identity Management Commission (NIMC). These agencies have introduced e-tax platforms, online passport applications, and the National Identification Number (NIN) registration system as part of the federal government's digital transformation agenda for public service delivery. However, the realities of digital inclusion in Nigeria reveal a complex and uneven landscape where structural, infrastructural, and socio-economic barriers continue to impede effective service delivery. A key challenge is the persistent digital divide. Despite government investments, a significant proportion of citizens, particularly in rural and underserved communities, lack reliable internet connectivity, digital literacy, or access to affordable ICT infrastructure. This results in exclusion from critical services, such as e-filing tax returns, registering for the NIN, or e-passport registration, thereby undermining the principle of equal access to public services.

Moreover, the limited capacity among citizens to navigate digital platforms often leads to reliance on intermediaries, which reintroduces corruption, delays, and inefficiencies that digital reforms were meant to eliminate, thereby demonstrating a lack of understanding of the role of digital inclusion and quality service delivery in Nigeria. Equally troubling is the trust deficit between citizens and public institutions. Many Nigerians perceive digital platforms as unreliable due to recurring system breakdowns, lengthy downtimes, and bureaucratic bottlenecks. For example, the frequent collapse of the NIMC portal has frustrated citizens seeking identity registration. At the same time, inconsistent online tax payment systems in FIRS have discouraged compliance, and incomplete USSD transactions by JAMB users. These challenges erode public confidence in the government's ability to deliver inclusive, citizen-centered services, contradicting the goals of e-governance and public value creation. Furthermore, while digital transformation initiatives are often celebrated at the policy level, their actual impact on service quality, accountability, and citizen satisfaction remains under-researched. There is

insufficient empirical evidence on how digital inclusion or the lack thereof shapes citizens' access to efficient public services in Nigeria. This gap is significant, given that digital innovations are only meaningful when they generate equitable public value, empower citizens, and reinforce legitimacy in governance. Thus, the central problem is that although Nigeria has embraced digital innovations in public administration, structural inequalities, infrastructural gaps, low digital literacy, and weak institutional frameworks continue to hinder inclusive service delivery. Unless these challenges are critically examined, digital governance risks reinforcing exclusion, widening inequalities, and weakening citizens' trust in public institutions rather than fulfilling its promise of efficient, transparent, and equitable governance.

### Research Objective

The broad objective of this study is to examine the understanding of digital inclusion and its implications on public service delivery in Nigeria.

The specific objectives are to:

1. Examine the extent to which digital portals (NIMC and JAMB) have enhanced accessibility and efficiency of public service delivery by the Nigerian populace.
2. Analyse the role of mobile tools (USSD codes and SMS platforms) in promoting Inclusive Public service delivery.
3. Investigate the impact of the FIRS digital tax payment system on public service delivery.
4. Evaluate the contribution of the Nigeria Immigration Service (NIS) online service platforms in improving efficiency, responsiveness, and citizen satisfaction with public services.

### Research Question

1. To what extent does the adoption of e-government portals (such as NIMC and JAMB platforms) enhance accessibility and efficiency in public service delivery in Nigeria?
2. How do mobile governance tools (USSD codes and SMS platforms) promote inclusiveness and extend public services to rural and underserved populations?
3. In what ways do digital payment systems introduced by the Federal Inland Revenue Service (FIRS) influence transparency and accountability in public service delivery?
4. How does the online service platform of the Nigeria Immigration Service (NIS) contribute to efficiency, responsiveness, and citizen satisfaction with government services?

### Conceptual Review

#### Digital Inclusion

Digital inclusion is born out of Digital innovation, which involves the systematic application of scientific knowledge to create new or improved products, processes, or services. This process

focuses on practical implementation and problem-solving to meet specific technical challenges or enhance existing systems. It comprises several stages, each critical to ensuring that the innovation is effective and valuable (Adeyemi, 2023). The innovation process begins with identifying specific technical challenges or phenomena within a society, as well as possible areas of improvement. This involves analysing current systems, understanding their limitations, and pinpointing opportunities where scientific advancements can make a significant impact. Most of the debate on digitalisation and inclusiveness has centred on the degree to which countries worldwide have affordable access to various digital tools and their usage (UNCTAD, 2020). Digitalisation is a complex socio-technical apparatus and set of procedures for adopting and utilising digital technologies and innovations by individuals, organisations, and society as a whole. Digital inclusion is a set of public policies that relate to the installation, administration, expansion, and utilisation of innovative technology that cuts across a country's geographical area. Digital inclusion helps to create an informed society and seamless service delivery to citizens of a given country. GOV. The UK opined that digital inclusion is a facet of social inclusion, and it provides the proper access to the digital world for intellectual development and promotes spaces for significant cultural practice that allows individuals to be digitally literate. It further stated that digital inclusion does not only imply being technically capable of acting in cyberspace, but also being capable of creating and producing meanings and feelings within it. Therefore, digital inclusion refers to the ability to access, adapt, and create new knowledge using innovative technology deployment for customer satisfaction. The expansion of digital applications and platforms can be utilised for development purposes and in addressing societal problems, including those related to achieving the Sustainable Development Goals. It can improve economic and social outcomes and be a force for quality service delivery. The infrastructure provided by platforms can enable more effective connections, transactions, exchanges of information and networking and ease of doing business (UNCTD, 2020).

Digital inclusion refers to the use of information and communication technology to facilitate transparency, efficiency, accountability, and effectiveness in the infrastructural and collaborative exchanges within state, municipal, and local governments, thereby empowering citizens through access to and application of information (Bansal, Sharma, & Sood, 2012). Bansal et al. (2012) state that "Agencies of government adopt digital inclusion for communication and information technologies with the ability to transform the relations between businesses, citizens and different bodies of government." Digital inclusion refers to the process of ensuring that individuals and communities,

particularly those who are marginalised or disadvantaged, have access to and can effectively use information and communication technologies (ICTs). It goes beyond the mere provision of devices and internet connectivity; it also encompasses the development of digital literacy skills, affordability of services, accessibility for people with disabilities, and the creation of relevant content that meets the needs of diverse populations (van Dijk, 2020). By addressing these dimensions, digital inclusion seeks to bridge the digital divide and create equal opportunities for participation in the digital economy and society (Warschauer, 2004). At its core, digital inclusion is both a developmental and a social justice issue. In today's knowledge-driven world, access to digital tools is critical for education, healthcare, financial inclusion, governance, and economic empowerment (World Bank, 2021). When certain groups are excluded—whether due to poverty, geography, gender, age, or disability—the gap in opportunities widens, reinforcing inequality. Therefore, promoting digital inclusion is essential for fostering inclusive growth, enhancing service delivery, and ensuring that no one is left behind in the rapidly evolving digital era.

### **Media of digital inclusion**

There are various media of digital inclusion in Nigeria that ensure services are digitally transmitted to the populace. They include:

1. **Mobile Telephony and Internet Services:** The spread of mobile phones, exceptionally affordable smartphones, has become the most significant medium for digital inclusion in Nigeria. With over 220 million active mobile subscribers and increasing 4G and 5G penetration, mobile connectivity remains the primary channel through which Nigerians access the internet, e-governance services, banking, and social platforms.
2. **National Identification and E-Government Platforms:** Platforms such as the National Identity Number (NIN) system, Bank Verification Number (BVN), and government portals like the Corporate Affairs Commission (CAC) online registration platform are mediums that enable digital identity, access to services, and inclusion in the formal economy.
3. **Digital Financial Services:** tax profiling platform, Mobile banking, Point of Sale (PoS) terminals, and fintech applications have become central to financial inclusion. They provide millions of unbanked and underbanked Nigerians with access to digital payments, savings, and credit.
4. **Educational Platforms and E-Learning Tools:** Digital inclusion is also promoted through online learning platforms (such as Edmodo, Google Classroom, and Nigerian-specific platforms like uLesson). These media enhance access to education for students in urban and rural areas, especially after the COVID-19 pandemic highlighted the role of ICT in education.

5. Community ICT Centres and Public Access Points: Government and NGOs have established ICT hubs, innovation centres, and community internet access points to promote skills training and digital literacy. Initiatives such as NITDA's ICT innovation hubs and state-sponsored technology villages (e.g., Lagos' Eko Innovation Centre) fall within this category.

6. Broadcast and Social Media Platforms: While traditional broadcast media remain influential, social media platforms like WhatsApp, Facebook, Twitter (X), and TikTok serve as powerful mediums of digital inclusion, enabling communication, business promotion, civic engagement, and citizen mobilisation across Nigeria.

In summary, these various mediums of digital inclusion in Nigeria are designed to deliver services to the entire population in both urban and rural settlements.

### **Public Service Delivery**

It is essential to have an understanding of the term 'service delivery' before examining public service delivery. Service Delivery, therefore, according to Kpolovie (2003), is a unique system that enables business success and supports the development of business strategy for achieving different levels of performance, including customer retention, customer satisfaction, and overall profitability. The central notion for a target market is to address the question of "who" the main customers or intended beneficiaries are, and "what" customers can achieve. Service delivery refers to the process of delivering services to consumers or customers within a specific area. Public service delivery refers to the services rendered to citizens by government institutions, ministries, departments, and agencies. Public service delivery is the fundamental reason for the existence of government, and its primary role is to deliver effective and efficient services which the private sector may not have the capacity to offer or offer them at very high prices to the citizens (Egugbo, 2020). Public service delivery is sacrosanct as it is a representation of the basic structure of nation-building. It serves as a nexus and bond between the government and citizens, promoting the values of the nation among its citizens (Walle and Scott, cited in Shittu, 2020). According to Ogunna, cited in Shittu (2020), the desire to satisfy the public through the implementation of public policies, enforcement of laws, and realisation of public welfare culminates in effective public service delivery. Service delivery in the public sector in Nigeria is used as machinery for the implementation of government programmes and policies to the populace, which may include health, education, citizenship registration, security, and other social amenities. The concept presupposes that, in public service, there is a contractual relationship between the customer (the public) and the service provider (government agency) which obliges the latter to render service to the former in the most satisfactory way, be it in terms of utility, quality,

convenience, timelines, cost, courtesy, communication or otherwise.

### **Brief History of the National Identity Management Commission (NIMC)**

The National Identity Management Commission (NIMC) was established by the NIMC Act No. 23 of 2007, replacing the earlier Directorate of National Civic Registration (DNCR) that operated a flawed national ID scheme from the late 1970s (Wikipedia, 2025). NIMC's mandate, as outlined in the Act, includes creating and managing a secure national identity database, integrating existing identity systems, issuing unique National Identification Numbers (NIN), and subsequently issuing the chip-based General Multipurpose Card (GMPC).

Since its inception, NIMC has implemented a series of digital innovations to enhance identity management and service delivery (NIMC.gov.ng). These include the launch of the NIN enrollment exercise in 2010, the issuance of the multipurpose e-ID card in 2013, and a pilot e-ID scheme in 2014, in partnership with Mastercard and Cryptovision, to enable identification and payment functionalities (Techpoint, 2020). More recently, NIMC has introduced digital tools such as the NIMC mobile app for NIN verification and SIM linkage, contactless enrolment solutions, and tokenisation of identity data—advances that have strengthened Nigeria's digital identity ecosystem. These efforts form part of a broader shift toward creating a modern, interoperable identity infrastructure, including partnerships with the Secure Identity Alliance and overseeing the OSIA initiative to promote open identity standards and Secure Identity Alliance. NIMC's ongoing drive to expand enrolment, decentralise services, and integrate its system with other national databases underscores its evolving role in driving e-governance, security, and service inclusion in Nigeria.

### **Brief History of the Federal Inland Revenue Service (FIRS)**

The Federal Inland Revenue Service (FIRS) originated from the colonial Inland Revenue Department of Anglophone West Africa, which was later localised into the Nigerian Inland Revenue Department in 1943. In 1958, the Federal Board of Inland Revenue (FBIR) was established under the Income Tax Ordinance, and in 1993, the FIRS became its operational arm. The FIRS Establishment Act of 2007 gave it autonomy, while the 2025 Nigeria Revenue Service Act further rebranded and strengthened its powers (Wikipedia, 2025).

Over time, FIRS introduced digital innovations to enhance efficiency and compliance. These include Tax Identification Numbers (TINs), the Integrated Tax Administration System (ITAS), and e-TaxPay platforms, which allow taxpayers to file returns and make payments online. More recently, the service has deployed automation tools and data analytics for

monitoring compliance, aiming to expand Nigeria's tax base and improve transparency (Eze, 2020). Thus, FIRS has evolved from a manual colonial-era tax unit into a digitally driven revenue agency at the heart of Nigeria's fiscal sustainability. Its adoption of ICT reflects both the global shift toward e-governance and Nigeria's domestic demand for accountability in taxation (Odukoya, Adekeye, & Okunlola, 2018).

### **Brief History of the Nigeria Immigration Service (NIS)**

The Nigeria Immigration Service (NIS) was established in 1958, following its separation from the Nigeria Police Force. It became a statutory department under the Ministry of Internal Affairs in 1963, and in 1992, it attained para-military status with its head redesignated as the Comptroller General of Immigration. The Immigration Act of 2015 later strengthened its legal framework and expanded its mandate in migration management. NIS has pioneered several digital innovations in Africa. It introduced the Machine Readable Passport (MRP) in 1998, launched the Combined Expatriate Residence Permit and Aliens Card (CERPAC) in 2001, and became the first country in Africa to issue e-Passports in 2007, aligned with ICAO standards. It has also implemented online application and e-payment systems for visas and passports, mobile passport intervention units, and biometric verification for enhanced border security (Immigration.gov.ng). Today, NIS plays a central role in Nigeria's digital identity and migration management, symbolising the country's effort to integrate technology into governance while ensuring national security and global compliance in travel documentation (UNDP, 2023).

### **The History of JAMB:**

The Joint Admissions and Matriculation Board (JAMB) was established in 1978 by the Federal Military Government of Nigeria through Decree No. 2 of 1978 (later amended by Decree No. 33 of 1989). Its creation responded to the inefficiencies of the admission process in Nigeria's higher institutions, which had become fragmented and burdensome (Owolabi, 2014). The Joint Admissions and Matriculation Board (JAMB) occupies a central place in Nigeria's educational landscape as the institution responsible for regulating entry into higher institutions. Its history is not only the story of an administrative body, but also a reflection of Nigeria's attempt to manage equity, standardisation, and efficiency in a diverse and competitive society. The vision of JAMB was to create a fair, transparent, and standardised system for allocating spaces in Nigerian universities. The board's mandate included conducting entrance examinations, collating results, and placing qualified candidates into tertiary institutions based on merit, catchment area, and federal character principles (Adeyemi, 2019).

Over time, JAMB's role expanded. Initially focused on universities, it was later mandated to oversee admissions into polytechnics, monotechnics, and colleges of education. This expansion reinforced its centrality in Nigeria's educational system and broadened its impact on human capital development. However, its journey has not been without challenges. Issues such as examination malpractice, technical failures, and criticisms over fairness and transparency have often tested the credibility of the board. Still, JAMB has shown resilience by adopting reforms, including biometric registration, computer-based testing (CBT), and digital verification systems. These innovations reflect its ongoing commitment to modernisation in line with global standards (Eze, 2020). Today, JAMB is more than an examination board; it represents a rite of passage for millions of Nigerian youths. For many families, preparing for and writing the JAMB examination has become a shared cultural experience, filled with anxiety, hope, and aspirations. In this way, the history of JAMB is deeply human: it is about the dreams of young Nigerians striving for opportunity, the efforts of parents making sacrifices, and the state's role in ensuring that access to education remains structured and equitable.

### **Examination of Digitalisation in Nigeria's Public Service Delivery**

Before the introduction of digital innovations in the Nigerian public service delivery system, there was terrible service delivery characterised by ineffectiveness, corruption, delays, partial service rendering and excessive human interface. According to Magbadelo (2020), there is service delivery failure in the Nigerian public service, which is an indication of bureaucratic delays in processing requisite approval. Public service in Nigeria is akin to inefficiency, corruption and poor service delivery from the educational, health, finance, and security institutions, respectively. The ineptitude and delay have their root in bureaucratic management dimensions. Ajibade and Ibieta (2016) observed that the introduction of reforms in the public service by the administrations of Olusegun Obasanjo (1999-2007) and Yardua/Goodluck Jonathan failed to achieve the objective of quality service delivery. In the words of Ajibade and Ibieta (2016), the efficiency of the Nigerian public service has been put to the test, and it has experienced a series of economic, political and structural transformations by various regimes and administrations in the country at one time or another. The Nigerian public has faced numerous challenges in service delivery since the country's independence in 1960. Nigeria, like any other developing nation, has reviewed its service delivery procedures and processes to enhance performance and productivity in the public sector. The Federal Ministry of Communications and Digital Economy developed four (4) key goals to drive the adoption of e-government across all Ministries, Departments and Agencies, which in turn enhance

service delivery, transparency, accountability and good governance. Consequently, the E-Government Department began the implementation of the following initiatives: - National E-Government Master Plan: This is a roadmap for the adoption of e-government best practices, by all Federal Government Ministries, Departments and Agencies (MDAs) developed in collaboration with the Government of Korea to further promote the fundamentality of e-governance to the nation which aligns with the government's direction of leveraging technology for public service delivery. - Government Service Portal (GSP): This is a platform ([services.gov.ng](http://services.gov.ng)) developed for the provision of easy access to government services. This has enabled the citizens, businesses and foreigners to access public services through a one-stop government portal easily. Also, it has led to a significant improvement in the government processes and effective and efficient service delivery. - Government Contact Centre (GCC): The Centre provides access for citizens, notwithstanding their location, level of literacy or language, to get government services/information through calls. The aim is to provide citizen orientation and simplicity, enabling them to communicate with the government in a convenient, straightforward, electronic, and barrier-free manner. This has resulted in the employment of a good number of citizens, as well as enhanced their participation in public service. - Open Data Portal: This is an online platform ([data.gov.ng](http://data.gov.ng)) where government MDAs' data/information that is not sensitive is made available for public consumption. This enhances transparency and guarantees inclusiveness in service delivery. - Electronic Document Management System (EDMS): This is one of the ways the government has demonstrated its commitment to digitalisation. The Electronic Document Management System was developed with a view to moving all government documents online. In other words, it was an effort to deepen the application of ICT in all public endeavours. Consequently, there is increased information security, cost reduction and improved access to information among others.

The NIMC Digital innovations have streamlined the identity registration and verification processes. This has led to increased efficiency and speed in providing identity 135 services. Citizens can obtain their National Identification Numbers (NIN) and National ID cards more quickly, enhancing their overall experience. Innovations such as biometric data collection (fingerprint and facial recognition) have significantly improved the accuracy and security of identity data. Biometric technology reduces the risk of fraudulent identity registrations and identity theft, safeguarding citizens' personal information. (Oyedemi, 2018). Biometric technology has significantly simplified and expedited the process of identity registration and verification. Traditional methods, often reliant on paper documentation and manual checks, are time-consuming and prone to errors.

In contrast, biometrics uses unique physical characteristics such as fingerprints, facial features, and iris patterns to quickly and accurately identify individuals (Theophilus, 2023). The Nigerian government introduced several reforms and strategies to mitigate ineffective service delivery in the public bureaucracy. Service delivery assumes a contractual relationship between citizens and the public service, obliging the latter to deliver services to the former in the most satisfactory manner, in terms of utility, quality, convenience, timeliness, and communication (Ahmed in Egugbo, 2020). Therefore, most government institutions are transitioning from traditional methods of service delivery to digital innovations as observed by JAMB, FIRS, NIS and NIMC. The above, therefore, brings into focus the need to investigate the understanding of various digital innovations in Nigeria's public service aimed at delivering quality services.

### **Opportunities of Digital Inclusion on Public Service Delivery in Nigeria**

Digital inclusion offers transformative opportunities for enhancing public service delivery in Nigeria, enabling greater efficiency, accessibility, and accountability. One significant opportunity is to improve efficiency and transparency in governance. With digital tools, public institutions such as the Federal Inland Revenue Service (FIRS) and the National Identity Management Commission (NIMC) have automated service processes, reducing bureaucratic delays and opportunities for corruption (Ndubuaku & Eze, 2020). E-filing of taxes and electronic identification systems provide faster service delivery while building public trust. Digital inclusion enhances citizen access to government services. Platforms such as online portals for passport applications at the Nigeria Immigration Service (NIS), eNaira for digital payments, and digital health services extend government programs to wider populations, including those in rural and underserved areas. By breaking geographical barriers, digital tools ensure more inclusive governance.

Digital inclusion provides opportunities for data-driven decision-making in public service delivery. With digital records, biometric systems, and big data analytics, agencies can plan more effectively, allocate resources efficiently, and tailor services to meet citizens' needs. For instance, the integration of National Identification Numbers (NIN) with banking and telecom databases has improved planning for social intervention programs (Adeleke & Yusuf, 2022). It can also create room for participatory governance and citizen engagement. Social media platforms, e-participation tools, and mobile feedback apps enable citizens to interact directly with government institutions, lodge complaints, and demand accountability. This two-way communication strengthens democracy and ensures services are more citizen-centred. Ultimately, digital inclusion facilitates inter-agency collaboration and the integration of services. Digital identity

frameworks, electronic payment systems, and centralised platforms reduce duplication of efforts across ministries, departments, and agencies. This fosters “whole-of-government” service delivery, ensuring citizens interact with government more seamlessly.

### **Challenges of Digital Inclusion in Nigeria**

The ability of individuals and communities to access and effectively use information and communication technologies (ICTs) faces significant hurdles in Nigeria despite the growing adoption of digital tools. One key challenge is the infrastructure deficit. Rural and underserved areas still lack adequate broadband connectivity, reliable electricity, and affordable internet access. According to the Nigerian Communications Commission (NCC), broadband penetration was only about 45% as of early 2023, far below the government's target of 70% by 2025 (NCC, 2023; World Bank, 2021). This digital divide limits rural populations from fully benefiting from e-governance, online education, and financial inclusion services (Adeleke & Yusuf, 2022). Another major challenge is affordability and cost barriers. Although Nigeria has one of the largest telecom markets in Africa, the cost of internet data, smart devices, and ICT services remains high relative to average income levels. Many citizens still find smartphones and laptops unaffordable, while data costs exceed the UN Broadband Commission's recommendation of 2% of monthly income (GSMA, 2022). This economic barrier notably excludes low-income households, women, and persons with disabilities, perpetuating inequalities (Oladipo & Isola, 2021).

Digital literacy and skills gaps also hinder inclusion. While younger Nigerians are more tech-savvy, large segments of the population lack the basic digital skills needed to use ICT tools effectively. This affects job opportunities, financial transactions, and access to government e-services (Adeleke & Yusuf, 2022). Schools and training institutions often lack resources to integrate digital literacy into curricula, thereby reinforcing generational and regional gaps (Okunola, Rowley, & Johnson, 2017). Institutional and policy challenges further exacerbate the problem. However, the National Digital Economy Policy (2020–2030) aims to promote digital inclusion, but implementation gaps, corruption, and fragmented ICT initiatives hinder progress. Inconsistent regulations, weak data protection frameworks, and limited public-private collaboration undermine trust and efficiency in the digital ecosystem (Ndubuaku & Eze, 2020). Finally, social and cultural barriers persist. Gender inequality means that women in rural areas are less likely to own mobile phones or access the internet compared to men. Persons with disabilities also face exclusion due to limited accessibility features in ICT infrastructure and platforms (GSMA, 2022). Such exclusion deepens socio-economic inequalities and limits national development outcomes.

### **Impact of Digital Inclusion JAMB Services in Nigeria (SMS/USSD)**

The adoption of digital innovation at various levels of JAMB's primary responsibility, ranging from candidates' registrations and profiling, examinations, results checking and admission into the higher institutions, has seamlessly shown a level of inclusiveness of the general populace irrespective of geographical location. Digitalisation increased the speed of JAMB operations and enabled solutions that facilitate the processing and maintenance of large volumes of information, including student, management, facility management, library, staff details, and examination organisation. According to Sudip and Angshu (2013), the adoption of digitalisation in the educational system incorporates data and processes of an educational Institution into a unified system, making the process uncomplicated, well-organised and error-proof. This is designed to make the system user-friendly, time-saving, and cost-saving as well. Most of the software providers enable their clients to choose from the available modules to meet their needs (Kpolivie, 2014). The Joint Admission and Matriculation Board (JAMB) in recent times has been known for its outstanding role and also adopting digital operations in achieving its goals, and this has been of great benefit to the body, but with a few challenges standing as hindrances to the realisation of its full goals. One primary aim of JAMB is to promote autonomy, innovation, and academic reforms in institutions of higher learning, and also to undertake institutional restructuring to improve efficiency, relevance, and creativity in examinations and higher education (Kular, Gatenby Rees, Soane, and Truss, 2008). The JAMB digitalisation was created to facilitate the various activities between management and candidates. The adoption of digital innovations in JAMB makes it easy for people, both in urban and rural areas, to secure online payment, check results, assess new policies, etc. It is now possible for all students to view their Unified Tertiary Matriculation Examination (UTME) results within a few hours after taking their respective examinations. All these were impossible in the past when their operations were manually operated. The adoption of e-governance by JAMB has gradually reduced information asymmetry that most fraudsters often capitalise on to defraud candidates. It has prevented age falsification because it synchronises with NIMC, prevents delays in registration centres and banks, and brings transparency and accountability.

### **NICM Digital Inclusiveness and Public Service Delivery**

Digital innovation and inclusion significantly impacted the performance of the National Identity Management Commission (NIMC) in its pursuit of service delivery and objectives in Nigeria. Digital innovations and inclusion, such as biometric identification systems, digital registration, profile correction, and digital generation of identity cards,

have streamlined the enrollment processes in both urban and rural communities. This reduces the time and resources required for capturing and verifying identity information, resulting in the faster issuance of national identification numbers (NINs) and cards. **Enhanced Accuracy and Security:** The advanced technologies improve the accuracy and security of identity data managed by NIMC. Biometric authentication methods reduce the likelihood of identity fraud and duplication. Secure databases and encryption technologies protect personal information, ensuring compliance with data protection regulations and enhancing public trust.

It also increased coverage and accessibility: the digital innovations and inclusion enable NIMC to extend its services to remote and underserved areas. Mobile registration units equipped with biometric devices reach populations that previously had limited access to identity services. Digital platforms for registration and verification facilitate easier interaction with citizens, including online and mobile channels. **Improved Service Delivery:** By leveraging technology, NIMC can improve overall service delivery to citizens. Automated processes reduce administrative bottlenecks, allowing staff to focus on higher-value tasks such as customer support and quality assurance. Integration with other government agencies and service providers enables seamless verification of identities for various purposes, such as voting, healthcare access, and financial services.

### **Impact of Digital Innovation and Inclusion in Public Service Delivery of the Nigeria Immigration Service (NIS)**

Digital innovation and inclusion have significantly transformed the operations of the Nigeria Immigration Service (NIS), improving how citizens access essential services. One notable impact is the streamlining of passport application and processing systems. The introduction of the online passport application portal has reduced the burden of physical visits, minimised bureaucratic bottlenecks, and cut down waiting time for citizens. This has not only improved service efficiency but also reduced opportunities for corruption often associated with manual processing (Adebayo & Ojo, 2021; NIS, 2023). Another important impact is the enhancement of border management and security. The adoption of biometric technologies and e-passports has strengthened identity verification processes, making it more difficult for fraudulent activities such as identity theft or illegal migration to thrive. Through digital inclusion, Nigerian citizens benefit from greater protection and credibility of their travel documents, aligning with international standards set by the International Civil Aviation Organisation (ICAO) (World Bank, 2021; Okunola, Rowley, & Johnson, 2017).

Digital innovations have also promoted greater accessibility to NIS services across Nigeria and the diaspora. Citizens in remote areas can now initiate applications and track progress online without

frequent travel to NIS offices. Similarly, Nigerians abroad can apply for passport renewal through Nigerian missions, enabled by integrated digital platforms. This inclusivity helps reduce geographical inequalities in service delivery (Oladipo & Isola, 2021).

Furthermore, digitalisation has improved transparency and accountability in the NIS. Online payment systems for passports and permits ensure more secure transactions, reducing cash handling and the risks of exploitation by intermediaries. This shift fosters citizen trust in the institution and aligns with broader government reforms in e-governance (Ndubuaku & Eze, 2020). Finally, the digital transformation of NIS supports better inter-agency collaboration and data-driven governance. The integration of the National Identity Management Commission's (NIMC) National Identification Number (NIN) with passport applications allows for more accurate citizen records, which aids in national planning, security, and social service delivery. Citizens ultimately benefit from more seamless, efficient, and reliable public services (GSMA, 2022).

### **Impact of Digital Innovation and Inclusion in Public Service Delivery of the Federal Inland Revenue Service (FIRS)**

Digital innovation has profoundly transformed the Federal Inland Revenue Service (FIRS), reshaping how Nigerian citizens and businesses interact with the tax system. One significant impact is the automation of tax administration through the Integrated Tax Administration System (ITAS). This digital platform enables taxpayers to register, file returns, and make payments electronically, reducing the inefficiencies of manual processes and minimising human contact that often creates opportunities for corruption (Adeleke & Yusuf, 2022; FIRS, 2023). By leveraging digital inclusion, citizens now experience more transparent, timely, and user-friendly tax services. Another important impact of digitalisation in FIRS is the expansion of the tax net and promotion of financial inclusion. Digital platforms allow more citizens and businesses—particularly in the informal sector—to be captured in the tax system through online identification and e-filing. This has helped broaden the tax base while giving citizens access to a more equitable and accountable tax regime (Ndubuaku & Eze, 2020). Through innovations like the e-TaxPay system, even small and medium enterprises (SMEs) can now meet their tax obligations seamlessly (World Bank, 2021). Digital inclusion also strengthens revenue mobilisation and national development. With real-time monitoring of tax payments and compliance, FIRS has increased efficiency in revenue collection, thereby providing the government with more resources to fund public infrastructure, education, and health services. Citizens benefit indirectly through the improved fiscal capacity of the state to meet developmental obligations. Additionally, digital platforms have enhanced accountability and trust

between citizens and the government. Online tax payment systems reduce the need for direct cash handling, thereby curbing corruption and enhancing accountability in the management of tax revenues. This transparency fosters greater taxpayer confidence, which is critical for voluntary compliance (Oladipo & Isola, 2021). Finally, digital inclusion in FIRS has facilitated better inter-agency collaboration. For instance, the integration of taxpayer data with the National Identity Management Commission (NIMC) and financial institutions has enabled more accurate verification, thereby reducing cases of tax evasion. This integration ensures that citizens experience a more streamlined and coordinated approach to public service delivery (GSMA, 2022).

### **Implications of Digital Inclusion for Citizens in Nigeria**

Digital inclusion carries broad implications for Nigerian citizens in the context of public service delivery. These implications can be viewed from both positive and cautionary perspectives. One key implication is improved accessibility of government services. Digital platforms such as the Federal Inland Revenue Service's (FIRS) e-filing system and the Nigeria Immigration Service's (NIS) online passport application portal have reduced geographical and bureaucratic barriers. Citizens in rural areas and Nigerians in the diaspora can now access services without frequent physical visits to offices, thereby saving cost and time.

The promotion of transparency and accountability in governance is another implication. By digitising payments and applications, agencies reduce opportunities for cash handling and corruption. Citizens experience greater trust in government when transactions are traceable, receipts are digitalised, and service standards are clearer (Ndubuaku & Eze, 2020). This fosters a more accountable governance system and increases voluntary compliance, particularly in areas like taxation.

Digital inclusion also contributes to citizen empowerment through participation. Platforms for feedback, digital surveys, and social media engagement allow citizens to demand better services and hold leaders accountable. This interactive communication reshapes the relationship between the state and its people, making governance more citizen-centred (Oladipo & Isola, 2021). Furthermore, digital innovation supports the economic empowerment of citizens. As more individuals are brought into the digital tax net, or registered with a National Identification Number (NIN), they gain formal recognition that enables access to financial services, social benefits, and government programs. This strengthens the social contract by linking digital identity to social protection schemes (World Bank, 2021). However, there are also cautionary implications. Digital exclusion of marginalised groups—such as the poor, elderly, and those in rural areas with low literacy—could deepen social inequality. Citizens without access to digital tools

risk being excluded from critical services, thereby reinforcing existing structural disparities (Okunola, Rowley, & Johnson, 2017). Similarly, concerns about data privacy and cybercrime mean that while services are more accessible, citizens may face risks of identity theft or financial fraud if digital platforms are not adequately secured (GSMA, 2022). Overall, the implications of digital inclusion for Nigerian citizens are dual: it can foster empowerment, accessibility, and trust in governance, while also creating new risks of exclusion and insecurity. Addressing these risks through inclusive policies and strong data protection frameworks will determine whether digital innovations truly translate into improved service delivery for all.

### **Citizens' Thrust in Digital Inclusion and Public Service Delivery in Nigeria**

Digital inclusion has become a central demand of Nigerian citizens in their quest for improved public service delivery. With the growing adoption of ICTs in government institutions such as the Federal Inland Revenue Service (FIRS), the Nigeria Immigration Service (NIS), and the National Identity Management Commission (NIMC), citizens are increasingly aware that efficient, transparent, and inclusive digital systems can significantly enhance their access to essential services. Their thrust, therefore, revolves around ensuring that these digital platforms truly empower rather than marginalise citizens, by breaking down barriers to service accessibility (Ndubuaku & Eze, 2020). One of the foremost expectations of citizens is the removal of bureaucratic bottlenecks through digital reforms. Nigerians have long struggled with slow, manual, and often corrupt service processes in public agencies. For example, passport applications previously required long queues and multiple visits to NIS offices. With the introduction of online application portals, citizens now expect shorter processing times and reduced physical contact with officials. This reflects a strong citizen thrust for greater efficiency, where technology eliminates unnecessary delays and improves convenience (Olatunji, 2019). Another thrust lies in equitable access to digital services. Citizens are aware that digital platforms can exacerbate inequality if they are designed without considering Nigeria's infrastructural disparities. Rural populations often lack stable electricity, internet coverage, or digital literacy, which hinders their participation in digital governance. Citizens, therefore, demand inclusive policies that extend affordable internet, establish service centres in underserved areas, and provide literacy programs to ensure that all Nigerians can benefit equally from digital initiatives (Okunola, Rowley, & Johnson, 2017).

Citizens also emphasise the need for user-friendly platforms that reflect their realities. Many online systems introduced by government agencies are often complex, slow, and prone to errors, making them difficult for average Nigerians to navigate. As such,



citizens expect platforms to be simplified, mobile-friendly, and designed in local languages to accommodate diverse literacy levels. This thrust reflects a growing recognition that technology should serve citizens rather than complicate their experiences (Adeleke & Yusuf, 2022). In addition to accessibility, citizens' trust firmly centres on the trust and reliability of digital systems. Nigerians have experienced repeated breakdowns of online platforms, such as the NIMC registration portal or FIRS tax payment systems, which undermine confidence in digital reforms. For citizens, digital inclusion must guarantee consistency, functionality, and security. They expect that government agencies will invest in infrastructure that minimises system failures, protects data privacy, and delivers services seamlessly without disruption (Ndubuaku & Eze, 2020). Citizens also perceive digital inclusion as a tool for enhancing accountability and reducing corruption. Manual processes in Nigeria's public institutions have historically been plagued by bribery and rent-seeking behaviours. For instance, passport applicants often reported being asked for unofficial payments to speed up processing. By digitising these processes, citizens expect technology to limit human interference, thereby reducing corruption. Their thrust is that e-platforms must provide transparent tracking mechanisms and automated workflows that minimise opportunities for manipulation (Olatunji, 2019). Another key aspect of citizens' thrust is value for money. Citizens often complain that public services, even when digitalised, still come at a high cost compared to the quality delivered. For example, fees for passports, tax filings, or NIN registration are seen as burdensome, especially when platforms fail to function effectively. Therefore, citizens expect that digital inclusion will deliver not only efficiency but also quality and fairness, aligning with the Public Value Theory, which emphasises that public services should improve societal well-being (Moore, 1995). Citizens also demand responsiveness from public institutions. For many, the essence of digital inclusion is not merely the presence of online portals but the extent to which these platforms respond to their needs. Citizens demand responsive feedback mechanisms, customer support services, and grievance redress systems that ensure digital platforms are not static but interactive and adaptive. This expectation reflects the citizen-centred philosophy of e-governance (Heeks, 2006). Beyond efficiency, equity, and trust, citizens aspire for digital inclusion to strengthen legitimacy and social contract obligations between government and governed. When digital platforms succeed in simplifying access, ensuring fairness, and improving transparency, they reinforce citizens' trust in government institutions. Conversely, when platforms collapse or exclude marginalised groups, citizens perceive the government as failing in its duty to serve. Thus, citizens strive for digital inclusion to embody a genuine commitment to governance that is inclusive, transparent, and accountable (Adeleke & Yusuf,

2022). Furthermore, citizens increasingly link digital inclusion to global competitiveness. Nigerians recognise that efficient digital governance is a hallmark of modern states, enabling smoother trade, mobility, and international credibility. Citizens, therefore, expect that reforms in agencies like NIS and FIRS will not only improve domestic service delivery but also align Nigeria with global standards of digital governance, where citizens can seamlessly access documents and transact internationally (Okunola et al., 2017). An often-overlooked thrust of citizens is the desire for inclusivity in policy design and implementation. Many digital initiatives in Nigeria are top-down, with little citizen input. Citizens now demand participatory governance where their voices inform the design of digital platforms to ensure relevance, inclusiveness, and sustainability. This expectation aligns with the democratic ideal that public value is maximised when citizens are active participants in governance innovations (Moore, 1995).

Conclusively, Nigerian citizens' expectations of digital inclusion and public service delivery are multifaceted, encompassing efficiency, equity, accountability, reliability, and legitimacy. Citizens want digital platforms to simplify processes, reduce corruption, bridge inequalities, and deliver genuine public value. They demand not just technological change but institutional reforms that prioritise citizen needs and reinforce trust in government. Meeting these thrusts is essential if Nigeria is to harness digital inclusion as a valid driver of good governance and inclusive development.

### Theoretical Framework

The study adopts the e-governance, digital divide and public value theory respectively as a lens of the research. These three theories provide a robust lens for analysing digital inclusion in Nigeria's public service delivery. E-Governance Theory emphasises efficiency and transparency, Digital Divide Theory warns of inequalities and exclusion, and Public Value Theory ensures that reforms ultimately benefit citizens and strengthen legitimacy. The combined framework allows this study to critically examine not only the efficiency gains of digital inclusion but also its equity and social implications for Nigerian citizens.

### E-Governance Theory

E-Governance Theory emerged from the works of Richard Heeks (2006), who conceptualised e-governance as the use of ICTs to improve governance processes, efficiency, and service delivery. The theory is built on three central principles:

1. Efficiency – ICT improves administrative processes by reducing cost, time, and redundancy.
2. Transparency and Accountability – digitisation reduces human interference, making transactions more open and less prone to corruption.

3. Citizen-Centred Service Delivery – ICT tools create more accessible platforms that empower citizens to interact with government services more conveniently (Heeks, 2006). This theory applies directly to digital inclusion in Nigeria because initiatives like the Federal Inland Revenue Service's (FIRS) Integrated Tax Administration System (ITAS) and the Nigeria Immigration Service's (NIS) online passport system demonstrate how ICT can enhance efficiency and transparency. Through digital inclusion, citizens can access government services more easily, regardless of their location, aligning with the citizen-centred focus of e-governance.

### Digital Divide Theory

The concept of the digital divide was popularised by Jan van Dijk (2006), who highlighted structural inequalities in access to and use of digital technologies. The theory argues that social and economic inequalities shape digital access. It identifies four key divides:

1. Motivational Access – willingness of individuals to use ICT.
2. Material Access – availability of devices and connectivity.
3. Skills Access – the capacity to effectively use digital tools.
4. Usage Access – the actual benefits derived from ICT engagement.

This theory is vital for understanding the uneven impact of digital inclusion in Nigeria. While urban elites may benefit from FIRS e-filing systems or NIS biometric passports, citizens in rural areas often lack internet access or digital literacy, leaving them excluded. The theory highlights that without addressing infrastructural gaps and literacy barriers, digital innovations may reinforce inequality rather than solve it.

### Public Value Theory

Public Value Theory was proposed by Mark H. Moore (1995) in his seminal work *Creating Public Value*. The theory posits that public institutions must go beyond efficiency and legality to create value for citizens. Its core principles include:

1. Service Quality and Equity – public services should be fair, inclusive, and beneficial to all.
2. Legitimacy and Trust – public organisations must secure citizen trust by being accountable and transparent.
3. Citizen-Centred Outcomes – services should improve the lives of citizens, not just internal administrative performance.

Public Value Theory explains the normative dimension of digital inclusion in Nigeria. While digital innovation increases efficiency, its accurate measure is whether citizens find value in the services. For instance, FIRS's ITAS system must not only raise revenue but also create trust among taxpayers; NIS's digital passports should not only modernise

travel documents but also enhance fairness and accessibility for all Nigerians. This theory stresses that digital inclusion should empower citizens and strengthen their trust in public institutions.

### Research Methodology

This study adopts a historical research design grounded exclusively in documentary analysis. The purpose is to critically investigate the understanding of digital innovation and inclusion, as well as the extent of its implications on service delivery to Nigerians. The study draws its data from secondary data, which includes: scholarly literature, newspapers, Policy and Administrative Reports. The study employs a qualitative content analysis approach, utilising thematic analysis.

### Conclusion

The research conducted a qualitative study to understand digital inclusion and its implications for public service delivery in Nigeria, examining key government institutions such as JAMB, NIMC, NIS, and FIRS, as well as their digital innovations and inclusion, and the implications for service delivery to Nigerians. The study establishes that digital inclusion has significantly transformed public service delivery in Nigeria, particularly through platforms such as NIMC, JAMB, FIRS, and NIS. These innovations have improved efficiency, reduced bureaucratic bottlenecks, enhanced transparency, and broadened access to government services. Citizens now enjoy faster processes in areas such as tax filing, passport applications, and educational admissions, reflecting a shift from traditional, paper-based models to more technology-driven systems. However, the uneven distribution of ICT infrastructure, persistent digital illiteracy, and affordability barriers reveal that the benefits of digital inclusion are not evenly felt across Nigeria. While urban populations benefit more, rural and disadvantaged citizens remain at risk of exclusion, raising equity and inclusiveness concerns. Thus, digital inclusion has created both opportunities for empowerment and risks of deepening inequality, underscoring the need for deliberate policies that strike a balance between efficiency and social justice.

### Recommendations

1. **Expand Digital Infrastructure:** The Government should invest in nationwide broadband penetration, stable electricity supply, and affordable internet to bridge the rural-urban digital divide.
2. **Promote Digital Literacy:** Tailored programs should be developed to improve ICT skills among marginalised groups such as women, the elderly, and rural dwellers to ensure equitable participation.
3. **Strengthen Digital Policy Implementation:** Agencies must ensure that digital policies are harmonised across MDAs, with stronger regulatory frameworks to prevent duplication and fragmentation.

4. **Enhance Inclusiveness:** Platforms must be designed with accessibility features to accommodate persons with disabilities and those with low literacy levels.
5. **Safeguard Data Privacy and Security:** Stronger cybersecurity measures and data protection frameworks are crucial for protecting citizens against identity theft and fraud.
6. **Public-Private Partnerships:** Collaboration with private ICT companies, telecom operators, and fintechs can accelerate the growth and innovation of digital infrastructure.
7. **Citizen-Centred Reforms:** Digital initiatives should prioritise citizen satisfaction, trust, and inclusiveness, aligning with the principles of public value theory.

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## Role of the Central Bank of Nigeria (CBN) in Maintaining Economic Stability

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### Abstract

*This study investigates the role of the Central Bank of Nigeria (CBN) in maintaining economic stability through the use of monetary policy instruments, with a specific focus on their impact on inflation. The monetary policy variables examined include the Monetary Policy Rate (MP), Money Supply (MS), Exchange Rate (ER), and Credit to the Private Sector (CP), while inflation (IF) serves as the dependent variable. The study adopted an ex post facto research design, which is suitable for analyzing existing phenomena by using historical data to examine causal relationships. Secondary annual time series data spanning from 2001 to 2023 were obtained from the Central Bank of Nigeria Statistical Bulletin and other documented sources. The econometric analysis employed descriptive statistics, correlation, multicollinearity testing, Johansen cointegration test, and Ordinary Least Squares (OLS) regression. Results from the cointegration test revealed a long-term equilibrium relationship among the variables. In the short run, however, only the exchange rate had a statistically significant and positive impact on inflation, suggesting the dominance of external factors in driving domestic price levels. The monetary policy rate, money supply, and credit to the private sector showed no significant short-run effects. The findings partially align with the Cost-Push and Quantity Theories of inflation but challenge the traditional Monetarist and Interest Rate theories within Nigeria's context. The study recommends strengthening monetary transmission mechanisms, enhancing exchange rate stability, and improving the efficiency of credit allocation. Contributions to knowledge and suggestions for further studies are also discussed.*

**Key words:** Central Banks, Monetary, Policy

### Introduction

The Central Bank of Nigeria (CBN) plays a pivotal role in ensuring economic stability through the implementation of monetary policies. As the apex financial institution, the CBN is responsible for formulating and executing policies aimed at stabilizing the economy, controlling inflation, ensuring exchange rate stability, and fostering economic growth. The monetary policy objectives of the CBN are guided by the need to achieve macroeconomic stability (Akpan, 2020). The CBN employs several monetary policy instruments to regulate the economy, categorized into direct and indirect tools. Direct instruments which include: credit ceiling, selective credit control and moral suasion. Indirect instruments consist of: open market operations (OMO), monetary policy rate (MPR), cash reserve ratio (CRR), liquidity ratio and foreign exchange policy.

Inflation management is a key responsibility of the CBN. Through monetary policy, the CBN adjusts the MPR to either encourage or discourage borrowing. OMO is another tool used to mop up excess liquidity or inject funds into the economy. The CRR and liquidity

ratio are also used to control money supply and implements foreign exchange interventions to prevent imported inflation (Adeyemi & Ibrahim, 2020). Likewise, the CBN employs various mechanisms to stabilize the Naira including: managing the Foreign Exchange Market (FXM) to ensure smooth supply and demand balance, implementing exchange rate policies, such as devaluation or revaluation when necessary and using forex reserves to intervene in the market to curb excessive depreciation.

A stable banking system is crucial for economic stability. The CBN ensures this through setting regulations to ensure financial institutions maintain sound risk management, conducting periodic inspections of banks to prevent financial crises and providing liquidity support to distressed banks to prevent systemic collapse (Okolie et al., 2025). The CBN supports economic growth and job creation by: implementing intervention programs such as the Agricultural Credit Guarantee Scheme and Small and Medium Enterprises Development Fund, encouraging credit availability to the private sector through policies that lower interest rates and supporting financial

inclusion initiatives to expand access to banking services (Amadi & Okeke, 2019).

Despite its efforts, the CBN faces several challenges, including: Weak infrastructure and policy inconsistencies which hinder monetary transmission. A significant portion of the economy operates outside formal financial channels, limiting policy effectiveness. Pressure from the government can affect policy independence, fluctuations in global oil prices impact Nigeria's forex reserves and exchange rate stability (Aroghene & Obiekea, 2025). Persistent inflation, partly due to fiscal indiscipline, poses challenges for monetary control.

The interplay between monetary policy rate, money supply, exchange rate, and credit to the private sector is crucial in determining economic stability. If mismanaged, they can result in inflation, exchange rate crises, credit booms and busts, and overall macroeconomic instability. In order to examine the role of the Central Bank of Nigeria in Maintaining Economic Stability through monetary policies, the study made use of monetary policy rate, money supply, exchange rate, and credit to the private sector as independent variables while inflation rate was used to gauge the level of economic stability in Nigeria.

## **Conceptual Review**

### **Monetary Policy Rate (MPR) and Inflation**

The Monetary Policy Rate (MPR) is the benchmark interest rate set by a country's Central Bank, such as the Central Bank of Nigeria (CBN). It influences the cost of borrowing and the return on savings. Changes in the MPR affect Inflation (Olowookere et al., 2019). A high MPR discourages borrowing, reducing money supply and curbing inflation. If the MPR is higher than those of other countries, it may attract foreign investments in financial assets, increasing foreign currency inflows and stabilizing the exchange rate. Conversely, a low MPR encourages borrowing, increasing spending and potential inflation. A lower MPR promotes investment and expansion of businesses by making credit cheaper. Companies and individuals borrow more to finance investments, consumption and aggregate Demand (Daramola et al., 2021; Imene, 2023). when demand rises faster than supply, prices increase, leading to demand-pull inflation.

### **Money supply and Inflation**

Money supply refers to the total amount of money circulating in an economy. It includes: M1 (Narrow Money), Physical cash and demand deposits. M2 (Broad Money): Includes M1 plus savings and time deposits. M3 refers to M2 plus large-scale financial instruments. A rapid increase in the money supply, if not matched by economic productivity, can lead to inflation due to excess liquidity chasing fewer goods

(Ehiedu & Chime, 2021). Central Banks regulate money supply through tools such as: Open Market Operations (OMO): Buying and selling government securities. Reserve Requirements: The proportion of deposits banks must keep without lending. Monetary Policy Rate (MPR): Adjusting interest rates to influence borrowing and spending. If the Central Bank increases money supply without corresponding economic output, Currency Depreciates. More money in circulation leads to reduced currency value and imported Inflation. A weak currency makes imports more expensive, raising production costs and consumer prices and capital flight as Foreign investors may withdraw capital due to exchange rate instability, leading to financial instability (Imene & Ikenga, 2023).

### **Exchange Rate and Inflation**

The exchange rate is the price of one currency in terms of another. It affects economic stability in form of Depreciation of Currency. If the local currency depreciates, imported goods become more expensive, leading to imported inflation (Eggon & Ajidani, 2020). If banks extend too much credit without proper risk assessment, it can lead to asset bubbles (e.g., in real estate or stock markets) and A sudden correction in asset prices can result in financial instability and economic downturns.

### **Credit to the Private Sector and Inflation**

Credit to the Private Sector refers to the total amount of credit provided to businesses and individuals by financial institutions. It influences Economic Growth. More credit availability leads to increased investment, job creation, and economic expansion (Bello & Yusuf (2020). Excess credit can result in excessive spending, pushing demand beyond supply capacity and lead to inflation. When credit are given excessively without strict regulations, it can result in bad loans, leading to financial crises.

## **Theoretical Framework**

### **Cost-Push Inflation Theory**

John Maynard Keynes (1936) explained inflation as resulting from rising production costs particularly wages, raw materials, and import prices which are passed on to consumers in the form of higher prices. A key driver of cost-push inflation in open economies like Nigeria is exchange rate depreciation, which increases the cost of imported goods and inputs. The theory, confirmed that a depreciating naira raises import costs, thereby contributing to domestic inflation. This supports the notion that exchange rate instability is a major source of inflationary pressure in Nigeria.

### **Demand-Pull Inflation Theory**

John Maynard Keynes argues that inflation arises when aggregate demand in an economy exceeds aggregate

supply. Increased consumer spending, investment, or government expenditure, especially when financed through increased credit or money creation, puts upward pressure on prices. Credit to the Private Sector (CP) and Money Supply (MS) are linked to this theory. They reflect liquidity and purchasing power in the economy. According to the theory, both should have a positive and significant effect on inflation. Demand-pull pressures may be less influential in Nigeria's inflation dynamics over short periods, possibly due to supply-side constraints or inefficiencies in credit utilization. This would be verified by the results of the research.

### **Monetarist Theory**

The Monetarist Theory of developed by economists Friedman (1963), emphasizes that inflation is always and everywhere a monetary phenomenon. The theory asserts that sustained inflation is caused by a persistent increase in the money supply beyond the rate of real economic growth. It advocates for strict control of money supply as the primary means to achieve price stability. However, Nigeria's inflation may be driven by other factors in the immediate term, such as exchange rate volatility or structural inefficiencies. This partially supports the monetarist theory but also indicates limitations in its short-run applicability.

### **Empirical Review**

Erediauwa & Olawoye (2024) assessed the effectiveness of Nigeria's monetary policy post-COVID-19. Their study focused on Nigeria's post-pandemic monetary policy and its impact on inflation. They analyzed monetary policy variables and inflation rates using empirical analysis. The findings suggest that Nigeria's monetary policy faces challenges in effectively controlling inflation in the post-COVID-19 era. Ozili (2024) identified success factors for an effective inflation-targeting monetary policy regime in Nigeria. The study explored Nigeria's inflation-targeting framework, considering inflation rates and monetary policy strategies. Through an analytical study, the author concluded that effective inflation targeting in Nigeria requires specific success factors. Eggon & Ajidani (2020) investigated the impact of monetary policy on inflation in Nigeria from 1985 to 2019. The study analyzed Nigeria's historical monetary policy impact using variables such as the monetary policy rate, foreign exchange rate, and inflation. Applying Vector Autoregressive Analysis, the authors found that both the monetary policy rate and foreign exchange rate negatively impact inflation. Galadima et al. (2020) examined the impact of monetary policy variables on core inflation in Nigeria from 2007 to 2019. The study focused on Nigeria's core inflation analysis and considered variables like liquidity ratio, monetary

policy rate, broad money supply, treasury bill rate, and core inflation rate. Using econometric analysis, the findings revealed that monetary policy variables significantly impact core inflation. Spring-Ragain (2024) explored how emerging economies use counter cyclical monetary policies to manage economic crises and fluctuations in dominant currencies. The study analyzed interest rates, foreign exchange interventions, capital controls, GDP, inflation, and exchange rates. Through theoretical and econometric analysis, the study concluded that countercyclical monetary policies are essential for stabilizing emerging economies during crises. Ajayi & Olayemi (2020) examined the effect of monetary policy on inflation in Nigeria. Context and Scope were monetary policy and inflation dynamics. Variables used include Interest rate, inflation. The econometric analysis found a significant negative impact of interest rates on inflation. Aroghene And Agbamu (2024) in the research evaluation of factors influencing industrial production using OLS show that inflation and VATAX had insignificant influence but exchange rate had a positive significant influence on MAPROD. They recommended that economic policies aimed at controlling inflation, as lower and stable inflation is generally favorable for economic stability and growth. Olowookere et al. (2019) analyzed the relationship between money supply and inflation, concluding that excessive money supply growth contributes to inflationary pressures. Money supply, inflation were used as variables. Time series regression shows that Excessive money supply growth contributes to inflationary pressures. When Erhijakpor and Aroghene (2023) evaluated what determines economic resilience in Nigeria they found that FDI and TROP both have positive influence on growth. They further recommend enforcement of policies that allow for trade openness. Ehiedu (2022) in his work of deficit financing and sustainable growth in a small open economy using fully modified least square shows exchange rate has substantial effect on deficient financing and growth.

### **Gap in Literature**

While Erediauwa & Olawoye, (2024) assessed post-pandemic monetary policy effectiveness, there is still limited research on how inflation drivers have shifted in response to global supply chain disruptions, fiscal stimulus measures, and changing consumption patterns post-COVID-19. Balogun et al. (2018) investigated fiscal and monetary policy coordination, but there is still a need for more research on how government monetary policies through (monetary policy rate, money supply, exchange rate, and credit to the private sector) interact to shape economic stability in Nigeria.

### **Research Design**

The ex post facto research design was used. The economy of Nigeria is the geographical scope of the study. Base on availability, uniformity and timeframe, the aggregate time series data obtain from Central Bank of Nigeria was used. The published annual reports and accounts of Central Bank of Nigeria Statistical Bulletin for the financial period of spanning through 2001 through 2023 were used to measure the dependent variable and the independent variables. Similarly, the library, the review of different articles, papers and relevant previous studies was consulted. The data used for this study is already existing. They were sought electronic from official CBN website. The econometric views version 9.0. was the statistical package used for the study. It is one among the statistical packages used in quantitative research in the social sciences. The different estimations method used for the study are: descriptive statistics, correlation analysis, multicollinearity, Johansen cointegration test and normality test. While ordinary least square was used to

test the hypotheses raised in the study. The regression model is stated as:

$$IF = f(MP, MS, ER, CP) \quad \text{equation}$$

(1)

$$IF = \beta_0 + \beta_1 MP + \beta_2 MS + \beta_3 ER + \beta_4 CP + \varepsilon \quad \text{equation}$$

(2)

Where:

$\beta_0$  = Intercept

IF = Inflation Rate

MP = Monetary Policy Rate,

MS = Money Supply

ER = Exchange Rate

CP = Credit to the Private Sector

$\beta_1 - \beta_4$  = Coefficient of the Independent Variables.

$\varepsilon$  = Error Term

A Priori Expectations

MP: Negative relationship with inflation.

MS, ER, CP: Positive relationship with inflation.

## Results and Discussion

**Table 1: Descriptive Statistics**

|              | IF       | MP        | MS        | ER       | CP        |
|--------------|----------|-----------|-----------|----------|-----------|
| Mean         | 13.73205 | 12.83333  | 22.19708  | 217.8057 | 24.19208  |
| Median       | 12.00000 | 13.00000  | 17.34500  | 155.5864 | 19.46500  |
| Maximum      | 28.92000 | 20.50000  | 60.84000  | 647.2670 | 90.76000  |
| Minimum      | 6.600000 | 6.000000  | -2.010000 | 102.1052 | -3.810000 |
| Std. Dev.    | 5.300973 | 3.333514  | 17.30664  | 133.9999 | 21.53794  |
| Skewness     | 1.201656 | -0.007685 | 0.831009  | 1.654649 | 1.313077  |
| Kurtosis     | 4.235748 | 3.481654  | 2.820038  | 5.413671 | 4.924819  |
| Jarque-Bera  | 7.302979 | 0.232227  | 2.794687  | 16.77726 | 10.60162  |
| Probability  | 0.025952 | 0.890374  | 0.247253  | 0.000227 | 0.004988  |
| Observations | 24       | 24        | 24        | 24       | 24        |

Source: Authors' computation, 2025.

The descriptive statistics in Table 1, provide an overview of the distribution and characteristics of the dataset. Inflation (IF) has a mean of 13.73%, a maximum of 28.92%, and a minimum of 6.60%, with positive skewness (1.20) and leptokurtic distribution (kurtosis = 4.23), indicating occasional high inflation spikes. Also, Monetary Policy Rate (MP) shows relative stability with a mean of 12.83%, a narrow range (6.00% to 20.50%), and near symmetry in distribution. Money Supply (MS) has a wide dispersion

(std. dev. = 17.31) and values ranging from -2.01 to 60.84, implying high variability in liquidity conditions. Correspondingly Exchange Rate (ER) also shows high volatility (std. dev. = 134.00), indicating significant fluctuations in Nigeria's foreign exchange regime. Credit to the Private Sector (CP) ranges from -3.81 to 90.76 with a positive skew, suggesting growth in credit provision over time.

**Table 2: Correlation Analysis**

|    | IF       | MP       | MS       | ER        | CP       |
|----|----------|----------|----------|-----------|----------|
| IF | 1.000000 |          |          |           |          |
| MP | 0.458000 | 1.000000 |          |           |          |
| MS | 0.380584 | 0.233671 | 1.000000 |           |          |
| ER | 0.638043 | 0.259500 | 0.123222 | 1.000000  |          |
| CP | 0.066000 | 0.037806 | 0.726463 | -0.120583 | 1.000000 |

Source: Authors' computation, 2025.

The correlation matrix in Table 2 shows: Inflation (IF) is positively correlated with MP (0.458), MS (0.381), and ER (0.638), consistent with a priori expectations. CP shows a very weak positive correlation with IF

(0.066), suggesting minimal linear association. Notably, MS and CP are strongly correlated (0.726), raising concerns for potential multicollinearity.

**Table 3: Multicollinearity Test**

Variance Inflation Factors

Date: 05/18/25 Time: 14:30

Sample: 2001 2023

Included observations: 24

| Variable | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
|----------|-------------------------|-------------------|-----------------|
| C        | 11.38794                | 18.63261          | NA              |
| MP       | 0.065565                | 18.81015          | 1.142413        |
| MS       | 0.005284                | 6.740894          | 2.481441        |
| ER       | 4.14E-05                | 4.374632          | 1.164441        |
| CP       | 0.003275                | 5.518752          | 2.382365        |

Source: Authors' computation, 2025.

Variance Inflation Factor (VIF) values in Table 3 indicate all centered VIFs are below 5, suggesting no severe multicollinearity. The highest centered VIF is

for MS (2.48) and CP (2.38), both below the critical threshold of 10, so the regression results are reliable in this regard.

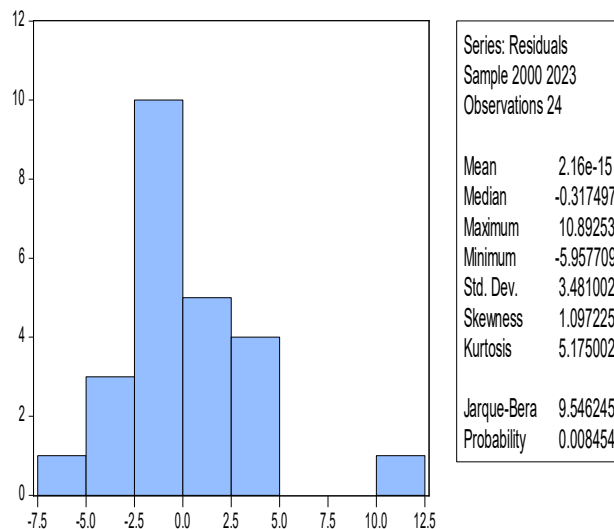


**Figure 1: Normality Test**

Source: Author' Computation, 2025.

Figure 1 normality test shows data are not normality distributed. We will considered another test like the Johansen test before the least square estimation.



**Table 4: Johansen Cointegration Test**

Date: 05/18/25 Time: 14:24

Sample (adjusted): 2002 2023

Included observations: 22 after adjustments

Trend assumption: Linear deterministic trend

Series: IF MP MS ER CP

Lags interval (in first differences): 1 to 1

## Unrestricted Cointegration Rank Test (Trace)

| Hypothesized<br>No. of CE(s) | Eigenvalue | Trace<br>Statistic | 0.05<br>Critical Value | Prob.** |
|------------------------------|------------|--------------------|------------------------|---------|
| None *                       | 0.786163   | 87.75702           | 69.81889               | 0.0010  |
| At most 1 *                  | 0.760744   | 53.82111           | 47.85613               | 0.0124  |
| At most 2                    | 0.369201   | 22.35627           | 29.79707               | 0.2791  |
| At most 3                    | 0.269012   | 12.21939           | 15.49471               | 0.1467  |
| At most 4 *                  | 0.214998   | 5.325514           | 3.841466               | 0.0210  |

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

## Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| Hypothesized<br>No. of CE(s) | Eigenvalue | Max-Eigen<br>Statistic | 0.05<br>Critical Value | Prob.** |
|------------------------------|------------|------------------------|------------------------|---------|
| None *                       | 0.786163   | 33.93590               | 33.87687               | 0.0492  |
| At most 1 *                  | 0.760744   | 31.46485               | 27.58434               | 0.0150  |
| At most 2                    | 0.369201   | 10.13688               | 21.13162               | 0.7317  |
| At most 3                    | 0.269012   | 6.893873               | 14.26460               | 0.5018  |
| At most 4 *                  | 0.214998   | 5.325514               | 3.841466               | 0.0210  |

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

The Johansen cointegration test in Table 4 was conducted to determine the existence of long-run equilibrium relationships among the study variables. The results from both the Trace and Maximum Eigenvalue statistics provide consistent evidence of cointegration among the variables. Specifically, the Trace statistic indicates the rejection of the null hypothesis of no cointegrating equations at the 5% level, up to the case of two cointegrating relationships. The test reveals that the calculated Trace values (87.75702 and 53.82111) exceed their corresponding critical values (69.81889 and 47.85613) at the 5% significance level. Similarly, the Maximum Eigenvalue statistic confirms this finding by rejecting the null hypothesis of no cointegration up to the second equation, as the calculated statistics (33.93590 and 31.46485) are greater than their critical values (33.87687 and 27.58434) respectively. These results imply that there exist two cointegrating vectors among

the variables under consideration. Although short-run fluctuations may occur due to policy changes or external shocks, the existence of cointegration indicates that deviations from the long-run equilibrium are temporary and that the variables tend to adjust towards equilibrium over time.

**Table 5: Regression Result**

Dependent Variable: IF

Method: Least Squares

Date: 05/18/25 Time: 14:22

Sample: 2001 2023

Included observations: 24

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 2.716290    | 3.374603              | 0.804922    | 0.4308   |
| MP                 | 0.389233    | 0.256057              | 1.520101    | 0.1450   |
| MS                 | 0.113148    | 0.072689              | 1.556608    | 0.1361   |
| ER                 | 0.020212    | 0.006431              | 3.142829    | 0.0054   |
| CP                 | -0.036920   | 0.057230              | -0.645104   | 0.5266   |
| R-squared          | 0.568781    | Mean dependent var    |             | 13.73205 |
| Adjusted R-squared | 0.477999    | S.D. dependent var    |             | 5.300973 |
| S.E. of regression | 3.829935    | Akaike info criterion |             | 5.706625 |
| Sum squared resid  | 278.6997    | Schwarz criterion     |             | 5.952053 |
| Log likelihood     | -63.47950   | Hannan-Quinn criter.  |             | 5.771737 |
| F-statistic        | 6.265295    | Durbin-Watson stat    |             | 1.856784 |
| Prob(F-statistic)  | 0.002168    |                       |             |          |

**Source: Author' Computation, 2025.**

The results from table 4.6 shows that  $IF_t = 2.716 + 0.389MP_t + 0.113MS_t + 0.020ER_t - 0.037CP_t + \epsilon_t$

Where:

Exchange Rate (ER) is statistically significant ( $p = 0.0054$ ) and has a positive coefficient (0.020), confirming that exchange rate depreciation raises inflation in the short run. Monetary Policy Rate (MP) and Money Supply (MS) have positive but statistically insignificant effects, implying their influence on inflation is weak. Credit to Private Sector (CP) has a negative but insignificant coefficient (-0.037), contrary to expectations, suggesting that credit expansion may not immediately translate to inflationary pressure, possibly due to structural inefficiencies or absorptive capacity constraints. The R-squared value of 0.5688 implies that about 57% of the variation in inflation is explained by the model, and the F-statistic is significant ( $p = 0.0022$ ), validating the joint significance of the explanatory variables. The Durbin-Watson statistic (1.86) indicates no serious autocorrelation.

### Conclusion

The study concludes that while the Central Bank of Nigeria plays a critical role in economic stability, the effectiveness of its monetary policy tools is limited in the short run, except for the exchange rate which significantly impacts inflation. The weak transmission of monetary policy rate and money supply effects suggests that structural and institutional bottlenecks may be impeding the efficacy of traditional monetary tools. A stable

exchange rate mechanism emerges as the most impactful variable in achieving inflation control, underlining the importance of foreign exchange management in Nigeria's monetary policy framework.

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## Forensic Accounting Mechanisms as Determinants of Financial Fraud Control in Nigeria.

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### **Abstract**

*This study investigates whether forensic accounting mechanisms serve as major determinants of financial fraud control in Nigeria. Survey research design involving two hundred and twenty(220) respondents, who are professional accountants, management staff, and practicing auditors of commercial banks in Warri metropolis, Delta State, Nigeria was used. The main data collection instrument is the questionnaire and data obtained were analyzed using both descriptive (mean, standard deviation, minimum value, maximum value, kurtosis, skewness and Pearson correlation), and inferential statistics (multiple regression). The dependent variable is fraud control while the independent variable is forensic accounting mechanisms (proxied by forensic litigation support and expert testimony). The regression model offers strong evidence that forensic accounting services, especially litigation support and expert testimony play significant roles in enhancing financial fraud control. With a high  $R^2$  and statistically significant coefficients, the model is both reliable and informative for decision-making in corporate governance, compliance, and risk management contexts. The study recommends that commercial banks can enhance their control over financial fraud by investing more in forensic litigation support services, possibly followed by strengthening their use of expert testimony. The study contributes to the existing body of knowledge by reinforcing the significance of forensic accounting mechanism (forensic litigation support and expert testimony) in financial fraud control in the Nigerian context, particularly for commercial banks in Nigeria.*

**Keywords:** Forensic accounting; Fraud control; Litigation support; Expert testimony; Nigeria

**JEL Classification:** M41; M42

### **Introduction**

The economic stability of the majority of emerging countries, including Nigeria, has been severely impacted by the surge in financial fraud. Fraudulent activities have infiltrated the banking industry, government, and private sectors in Nigeria, for example. In order to combat financial fraud, forensic accounting - an investigative method that blends accounting, auditing, and legal knowledge has become essential. Since traditional auditing techniques are frequently inadequate in addressing the increasing sophistication of fraudulent operations, research emphasises the urgent need for efficient fraud detection and prevention tools (Anthony & Gavine, 2022).

Although forensic accounting is still relatively new in Nigeria, its use is becoming more and more well-known because of how well it reduces fraud and improves financial reporting. Research shows that by using analytical methods beyond routine audits, forensic accounting greatly enhances the detection of fraudulent activity (Fatoki, 2023). This strategy is especially helpful in the fight against economic crimes and corruption, which continue to be

problems even with anti-graft organisations in place. The use of forensic accounting techniques has helped the Nigerian banking industry, which is frequently the focus of fraudulent schemes. According to this field's research, forensic accounting improves fraud detection, control, prevention, and management, which benefits financial institutions' integrity and performance (Agboare, 2021). More so, the integration of forensic expertise with the use of advanced technologies such as biometric authentication has further strengthened forensic accounting as a mechanism in controlling financial fraud.

According to Akande, Benjamin, and Umukoro (2024), forensic accounting is a crucial tool in the public sector, especially in regions with high rates of financial mismanagement and corruption. The relevance of forensic accounting in strengthening internal controls, identifying fraud in public organisations, and aiding in the prosecution of financial crimes is highlighted by studies (Abeki, 2023; Agboare, 2021; Adesina et al., 2020). It has been demonstrated that using forensic accounting procedures in government operations improves

financial transparency and lowers fraudulent activity (Amahi, 2023). Despite its potential, Nigerian forensic accounting confronts a number of obstacles, such as a lack of specialised training, low awareness, and an insufficient regulatory framework. According to Adam, Zakari, and Bello (2023), forensic accounting offers a strong method for preventing financial crime by providing notable enhancements in internal controls, financial reporting, and fraud detection. But in order to realise its potential to revolutionise the financial landscape, the government, trade associations, and educational institutions must work together to remove current obstacles and encourage its application in a variety of industries.

Anthony and Gavine (2022) observed that financial fraud is still a major problem in Nigeria, eroding both public confidence and economic growth. Systemic inefficiencies, corruption, and a lack of technical expertise have limited the effectiveness of anti-corruption organisations like the Independent Corrupt Practices Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC), despite their creation. More advanced mechanisms, such as forensic accounting, are required since traditional auditing methods frequently fall short in identifying and stopping complex financial crimes. Therefore, by combining accounting, auditing, and investigative abilities, forensic accounting has been recognised as a vital instrument for thwarting financial fraud (Obafemi, 2021). Its acceptance in Nigeria is still in its early stages, though, and there are still a lot of knowledge, training, and institutional support deficiencies.

The issue is made worse by the fact that many public and commercial organisations are unable to successfully apply forensic accounting techniques, as Olaoye (2020) correctly noted. Therefore, the difficulties also exist in the public sector, where pervasive corruption and lax internal controls foster an atmosphere that encourages fraud. Research has shown that although forensic accounting can enhance fraud detection and control and strengthen internal controls, its use is constrained by a shortage of qualified forensic accountants and inadequate legal frameworks to facilitate its incorporation into public institutions (Amahi, 2023). Financial crimes like insider trading, fund embezzlement, and cyber fraud are still common in Nigeria's banking industry and result in significant financial losses.

Insufficient investments in technology and human capital development have impeded the use of forensic accounting procedures, such as expert testimony and litigation support, which have demonstrated efficacy in identifying and addressing financial fraud (Micah, Adinnu & Ibitomi, 2023). Additionally, Nigeria lacks established forensic accounting education and training programs, which hinders the ability to efficiently investigate and prosecute financial crimes and permits fraudulent activities to continue. Furthermore, a major obstacle

is the lack of strong regulatory standard and guidance for forensic accounting procedures. Organisations find it difficult to apply forensic accounting successfully in the absence of clear policies, which leaves financial systems open to abuse (Ubesie, Ibezim & Cyriacus, 2023). Policymakers, professional associations, academic institutions, and researchers must work together to address these problems and create a framework that encourages the broad application of forensic accounting techniques as instruments for financial fraud controls in Nigeria. Because of this, this study was conducted to find out how much forensic accounting influences financial fraud controls in Nigeria.

## **Review of Related Literature**

### **Conceptualization of Forensic Accounting**

Globally, forensic accounting has become a vital weapon in the fight against financial fraud and corruption. In order to evaluate financial data for use in court cases and fraud detection, it integrates accounting, auditing, and investigative methods (Madu-Chima, Egbunike & Okoro, 2020). Many nations have adopted forensic accounting procedures to improve financial accountability and transparency as a result of the growth in financial crises like Enron and WorldCom (Okoye, Okoro & Salubi, 2017). Globally, forensic accounting has been included into anti-fraud policies and corporate governance frameworks in a number of industries, such as public administration, banking, and insurance. According to studies (Ogwiji, 2023; Victory, Promise & Mike, 2022), forensic accounting is essential for enhancing financial reporting and fortifying internal controls, especially in developed nations where technological tools like artificial intelligence (AI) and data mining have been used to identify irregularities in financial transactions.

Although forensic accounting is still in its infancy in Nigeria, its ability to combat financial crimes and systemic corruption is becoming more widely acknowledged. Robust fraud detection measures are necessary since the nation has long grappled with financial irregularities, mismanagement, and embezzlement. One practical way to lessen these difficulties, especially in the public sector, is through forensic accounting (Olaoye, 2020). Its efficacy in identifying and stopping fraud in Nigerian banks and government entities has been demonstrated by empirical research. For example, forensic accounting procedures greatly lower fraud and improve operational efficiency, according to a study by Agboare (2021); yet, their widespread usage in Nigeria is hindered by a lack of qualified personnel and insufficient legal frameworks.

Due to a lack of formalised forensic accounting education, low funding, and low awareness, the Nigerian government has made a concerted effort to integrate forensic accounting into its anti-corruption agencies, including the Economic and Financial

Crimes Commission (EFCC). Nevertheless, the practice is still underutilised (Anthony & Gavine, 2022). Furthermore, in order to address the lack of qualified experts, Nigerian colleges are increasingly calling for forensic accounting training and curriculum development. In order to standardise forensic accounting procedures in Nigeria, academics have underlined the necessity of statutory recognitions and a regulatory framework (Ogwiji, 2023). Fighting financial crimes has benefited greatly from forensic accounting, especially in Nigeria's public sector where corruption and fraud are pervasive.

Research indicates that forensic accounting mechanisms such as litigation support and expert testimony significantly improve fraud detection, control and prevention in public institutions (Amahi, 2023; Aminat, Ezekiel & Obafemi, 2023). Even while forensic accounting is now widely acknowledged as a crucial instrument for financial responsibility, fraud management, and prevention, its application in Nigeria is still in its infancy. Leveraging its full potential requires addressing obstacles such as a lack of legal assistance, a lack of knowledge, and a lack of integration into governance institutions. Nigeria may use forensic accounting to fight financial crimes and advance economic stability by raising awareness and developing its competence.

### **Financial Fraud Control**

In Nigeria, financial fraud is still a major problem that affects a number of industries, such as public administration, banking, and insurance. Because of the liquid nature of its assets, fraudulent activities pose a constant threat to the Nigerian banking industry in particular. Effective internal control systems are essential for lowering financial fraud, according to studies. Fraudulent activities in Nigerian banks have been shown to be considerably reduced by internal controls like strict risk management guidelines, segregation of duties, and deterrent mechanisms (Abeki, 2023). Because of poor regulatory monitoring and internal controls, fraud still affects financial institutions in spite of these measures (Adebayo & Ilesanmi, 2020). According to research, banks frequently struggle to put strong fraud prevention frameworks into place, which has caused the public's faith in them to decline. To bridge these gaps, actions including forensic audits and the creation of forensic accounting departments within businesses have been suggested (Adesina et al., 2020).

Corruption, embezzlement, and financial mismanagement are still common in the public sector. Although there are financial control measures in place, systemic inefficiencies and inadequate monitoring limit their efficacy, according to a study conducted on local governments in Nigeria. Therefore, improving financial accountability requires bolstering these controls and implementing

frequent audits (Adebayo & Ilesanmi, 2020). According to a study by Anthony and Gavine (2022), forensic accounting greatly strengthens internal controls, raises the calibre of financial reporting, and helps detect fraud. Nevertheless, the implementation and use of forensic accounting in Nigeria's public and private sectors are severely hampered by a shortage of qualified forensic accountants and a lack of understanding of its significance.

The banking sector in Nigeria is also becoming increasingly concerned about cyber fraud, which is made worse by the expanding use of e-payment platforms. According to A by Fatoki (2023), insufficient supervision of electronic transactions, staff collaboration, and weak security frameworks are the main causes of cyber fraud. Cybercrime in Nigeria can be considerably decreased by putting policies like multi-factor authentication, cybersecurity audits, and staff training into place. Nigeria has made progress in combating financial fraud by implementing internal controls and legal frameworks, but there are still many obstacles to overcome. Long-term fraud management requires bolstering forensic accounting, improving cybersecurity, and making sure anti-fraud regulations are strictly monitored and enforced.

### **Litigation Support and Expert Testimony**

Litigation support and expert testimony are to vital mechanism of forensic accounting. In order to effectively combat financial fraud, forensic accounting relies heavily on expert witness and litigation support. Particularly in a nation where financial crimes are widespread, these forensic accounting techniques are crucial to the discovery, management, resolution, and legal prosecution of fraud. Litigation support according to Madu-Chima et al. (2020), include offering thorough financial assessments and supporting documentation to facilitate court processes. To identify intricate fraud schemes, track down financial transactions, and communicate results in a way that juries and judges can comprehend, forensic accountants collaborate closely with legal teams. Research has demonstrated that litigation support services greatly improve the capacity to identify and prosecute financial crimes (Madu-Chima et al., 2020; Akande et al., 2024).

By offering unbiased and reliable financial evidence, forensic accountants' expert testimony supports court proceedings. According to research, expert witnesses are essential for proving the scope of fraud, tracing the sources and destinations of embezzled money, and teaching judges about forensic accounting principles. Their testimony frequently results in asset recoveries and convictions, which greatly discourages similar fraud in the future (Amahi, 2023). Litigation support has been shown to be successful in lowering financial crimes. Additionally, litigation support facilitates the prosecution of financial fraud cases. According to research, forensic accounting

services are essential for resolving cases of fraud that remain unresolved since they offer investigation skills and actionable proof (Aminat et al., 2023; Fatoki, 2023). This method encourages accountability in public organisations and financial organisations while also speeding up legal proceedings.

Even though expert testimony and litigation support have greatly enhanced Nigeria's ability to combat fraud, issues like forensic accountants' insufficient training and lack of knowledge about their role in litigation still exist. Studies suggest creating specialised forensic accounting departments inside governmental organisations and financial organisations, as well as incorporating forensic accounting into legal and financial education programs, to address these problems (Obafemi, 2021). Expert testimony and litigation support have been crucial in Nigeria's fight against financial fraud, helping to identify, prosecute, and stop intricate fraud schemes (Micah et al., 2023). These forensic accounting techniques will be even more helpful in bolstering financial accountability and transparency if their reach and scope are increased.

### **Theoretical Framework**

The stakeholders hypothesis, which highlights the significance of balancing the interests of all parties impacted by an organization's activities, including shareholders, employees, consumers, and the larger community, served as the foundation for this study. Stakeholder participation is essential for enhancing accountability, transparency, and fraud management in the context of forensic accounting and financial fraud control. According to Ogwiji (2023), there is broad agreement among stakeholders—including accountants, auditors, and business managers—about how well forensic accounting works to identify and prevent financial crime.

According to Ubesie et al. (2023), stakeholders believe that forensic accounting plays a crucial role in improving the calibre of internal control systems, fraud detection techniques, and financial reporting. According to the research, stakeholders agree that forensic accounting is an essential tool for preventing fraud in both public and private institutions. Therefore, cooperation between different stakeholders, such as governmental organisations, regulatory agencies, and company management, is necessary for forensic accounting. Stakeholders have a crucial role in establishing policies and guaranteeing the execution of strong internal controls that stop financial malfeasance, claim Madu-Chima et al. (2020). Prior studies (Okoye, et al, 2017; Yakubu, et al, 2022; Adam, et al, 2023) have highlighted the role of stakeholders in advocating for forensic accounting as a standard practice in corporate governance and fraud prevention

One major obstacle is the lack of a statutory framework for forensic accounting. Legislative

support has been sought by stakeholders to institutionalise forensic accounting, requiring both public and private organisations to use forensic accountants for fraud investigations and financial reporting (Adesina et al., 2020). By doing this, business operations would be in line with stakeholder interests and openness and accountability would be guaranteed. By improving fraud identification and prevention, forensic accounting techniques help all parties involved. Forensic accountants, for instance, are essential in identifying intricate fraud schemes and supporting parties involved in court cases. These initiatives preserve job security for workers, safeguard shareholder investments, and increase public confidence in business organisations (Anthony & Gavine, 2022).

Stakeholders must also support cutting-edge technologies in fraud detection and engage in forensic accountant training and capacity building if they want to fully utilise forensic accounting. To create best practices and standardise forensic accounting procedures in Nigeria, cooperation between professional accounting associations and regulatory organisations is also crucial (Agboare, 2021). The stakeholders' idea emphasises how forensic accounting in financial fraud control requires a team effort. In addition to improving fraud prevention, forensic accounting fosters transparency and confidence in Nigeria's financial institutions by bringing all stakeholders' interests into alignment.

### **Methodology**

The study employed a survey research approach, which was judged suitable for the investigation's goals. Because it made it possible to employ a carefully chosen sample of participants to represent a larger population, this research design is ideal for the study. Therefore, a thorough grasp of how forensic accounting mechanisms such as expert evidence and litigation support determine financial fraud control across Nigerian commercial banks was made possible by the use of survey design. Accountants, management personnel, and active auditors from a few chosen commercial banks in Warri, Delta State, made up the study's population. This approach seeks to provide valuable insights into how forensic accounting mechanisms can be effectively used to enhance financial fraud control and strengthen internal controls among commercial banks in Nigeria. A sample of 222 respondents was obtained out of the number of accountants, management staff, and practicing auditors of commercial banks in Warri, Delta State. The sample size was arrived at using convenience sampling technique. Structured questionnaire was used as the main data collection instrument and the questionnaire was designed to elicit information on forensic accounting mechanisms (litigation support and expert testimony) and financial fraud control using 5-point Likert-scale questions.

Furthermore, data collected were compiled and analyzed by means of descriptive (mean, standard deviation, minimum value, maximum value, kurtosis, skewness and Pearson correlation), and inferential statistics (multiple regression). The dependent

variable is fraud control while the independent variable is forensic accounting mechanisms (proxied by forensic litigation support and expert testimony); the following empirical models were estimated using the dependent and independent variables of the study:

$$Y = F(\text{Flits}, \text{Fextet}) \quad \text{eq. 1}$$

$$\text{Ffc} = \alpha_0 + \alpha_1 \text{Aflits}_i + \alpha_2 \text{Fextet}_i + \varepsilon_i \quad \text{eq. 2}$$

Where: Ffc is Financial fraud control; Flits is Forensic litigation support; Fextet is Forensic expert testimony;  $\varepsilon$  is Error term; i is Individual. Data entry was done using Microsoft Excel while data analysis was carried out using STATA 13.0

## Results

In this study, a sample of 222 respondents was obtained; however, only 220 copies of the administered questionnaires were fully retrieved;

hence, the analysis was based on the 220 copies of fully retrieved questionnaire, representing about 99 percent response rates of the administered research instrument.

**Table 1: Descriptive Statistics**

| Variable | Mean  | Std. Dev. | Min. Val. | Max Val | Skewness | Kurtosis |
|----------|-------|-----------|-----------|---------|----------|----------|
| Ffc      | 4.393 | 0.657     | 1.000     | 5.000   | -2.827   | 11.313   |
| Aflits   | 4.607 | 0.706     | 1.000     | 5.000   | -3.845   | 16.182   |
| Fextet   | 4.444 | 0.581     | 1.000     | 5.000   | -3.889   | 16.451   |

Source: Researcher's Computation (2025)

Table 1 is the descriptive statistics of the variables. All three variables have means close to 5, the maximum possible value, indicating that on average, participants rated these variables highly. Aflits has the highest mean (4.607), followed by Fextet (4.444) and FFC (4.393). This implies that Aflits was perceived the most positively, on average. The standard deviations range from 0.581 (Fextet) to 0.706 (Aflits), suggesting relatively low variability in responses - most participants gave similar ratings. Fextet has the lowest variability, meaning its ratings are most tightly clustered around the mean. All variables have a range from 1.000 to 5.000, indicating that the full scale was used by at least some respondents. This suggests that while most rated these variables highly, some outliers or dissatisfied respondents gave very low ratings (1).

Furthermore, all skewness values are strongly negative, indicating a left-skewed distribution: Responses are clustered at the high end (4s and 5s). A few very low scores (1s) are pulling the distribution tail to the left. Fextet and Aflits have the most extreme skewness (both nearly -3.9), indicating a very strong left skew. All three variables show extremely high kurtosis (well above 3), indicating Leptokurtic distributions - sharper peaks and fatter tails than a normal distribution. Most values are tightly packed around the mean (i.e., a lot of people gave the same rating, likely 5). But there are also a few extreme values (outliers) that cause heavy tails. Especially with Aflits (16.182) and Fextet (16.451), the kurtosis is very high, suggesting both a high concentration at one value and notable outliers.

**Table 2: Pearson Correlation**

| Variable    | Ffc    | Aflits | Fextet |
|-------------|--------|--------|--------|
| Ffc         | 1.0000 |        |        |
| Aflits      | 0.4118 | 1.0000 |        |
| Fextet      | 0.3392 | 0.3133 | 1.0000 |
| Observation | 220    | 220    | 220    |

Source: Researcher's Computation, (2025)

Table 2 is the Pearson correlation results; the result suggests a moderate positive correlation, as Ffc increases, Aflits tends to increase as well. The relationship is linear but not very strong - only moderate. The correlation between Ffc and Fextet (0.3392) appears to be weak to moderate positive correlation; hence, there is some tendency for Fextet to increase with Ffc, but the relationship is weaker than with Aflits. Again, the correlation between

Aflits and Fextet (0.3133) appears to be weak positive correlation; these two variables increase together slightly, but the association is not particularly strong. The number of observations is 220 for each variable pair; this is a reasonably good sample size, which adds credibility to the results of correlation.

Notably, all three (3) variables are positively correlated with each other, indicating that they move



in the same direction. The strongest relationship is between Ffc and Aflits ( $r = 0.4118$ ). However, no pair of the independent variables has a particularly strong correlation (none above 0.60), meaning while

there is association, it is not dominant. These results may suggest some shared underlying factor/construct connecting the variables but not enough to suggest they are redundant or measuring the exact same thing.

**Table 3: Multiple Regression**

| <b>Dependent Variable: Financial Fraud Control (Ffc)</b> |         |             |           |         |         |
|----------------------------------------------------------|---------|-------------|-----------|---------|---------|
| Variable                                                 | Symbols | Coefficient | Std. Err. | t-stat. | p-value |
| Forensic Litigation Support                              | Aflits  | 0.8256      | 0.0459    | 7.96    | 0.000   |
| Forensic Expert Testimony                                | Fextet  | 0.4738      | 0.0383    | 4.28    | 0.000   |
| Constant                                                 | _cons   | 0.5888      | 0.2142    | 3.75    | 0.001   |
| Prob > F                                                 |         |             |           |         | 0.000   |
| F-value                                                  |         |             |           |         | 32.44   |
| R-squared                                                |         |             |           |         | 0.757   |

Source: Researcher's Computation, (2025)

The result for forensic litigation support (Aflits) had a coefficient of 0.8256; this suggests that a one-unit increase in forensic litigation support is associated with an increase of 0.8256 units in financial fraud control, holding other variables constant. With a p-value of 0.000, the result is highly statistically significant at any conventional significance level (1%, 5%, or 10%). For forensic expert testimony (Fextet), the coefficient is 0.4738; this suggests that a one-unit increase in forensic expert testimony is associated with a 0.4738 unit increase in financial fraud control, ceteris paribus. Also highly significant ( $p = 0.000$ ), indicating strong evidence that this variable has a meaningful effect on Ffc.

Furthermore, the result suggests that when both independent variables are zero, the baseline level of Financial Fraud Control is 0.5888. Statistically significant at the 0.1% level ( $p = 0.001$ ), though the practical relevance depends on the context. The R-squared is 0.757; this indicates that 75.7% of the variability in financial fraud control is explained by the model (i.e., the two predictors combined); this is a strong explanatory power, implying the model fits the data well. The F-statistic: 32.44 and Prob > F: 0.000 means that the empirical model is statistically significant overall. Hence, the result suggests that both forensic litigation support and expert testimony have positive significant effects on financial fraud control. Forensic litigation support has a stronger effect than expert testimony, as seen by its larger coefficient (0.8256 vs. 0.4738) and higher t-statistic (7.96 vs. 4.28).

### Conclusion and Recommendations

The regression model provides strong evidence that forensic accounting services, especially litigation support and expert testimony play significant roles in enhancing financial fraud control. With a high  $R^2$  and statistically significant coefficients, the model is both reliable and informative for decision-making in corporate governance, compliance, and risk management contexts. Arising from the empirical results of the study, it concludes that forensic accounting mechanism is a major determinant of

financial fraud control in the Nigeria financial systems. These findings suggest that commercial banks aiming to enhance their control over financial fraud should consider investing more in forensic litigation support services, possibly followed by strengthening their use of expert testimony. These recommendations when carefully implemented by commercial banks in Nigeria would help them reduce incidences of financial fraud, enhance operational transparency, and contribute to the overall growth and stability of the Nigerian financial system.

This study contributes to the existing body of knowledge by reinforcing the significance of forensic accounting mechanism (forensic litigation support and expert testimony) in financial fraud control in the Nigerian context, particularly for commercial banks in Nigeria. The result of the study align with the viewpoints shared in previous studies, which emphasized the need for comprehensive forensic accounting practices to ensure that organizations have robust mechanisms to detect, prevent, control, and respond to financial fraud in the most effective and efficient way.

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## Artificial Intelligence Applications in Predictive Analytics for Service Marketing Performance in Delta State.

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### Abstract

*This study investigated artificial intelligence (AI) applications in predictive analytics for service marketing performance in Delta State. Specifically, the research examined the effects of AI-driven customer segmentation, predictive customer behaviour analytics, and personalized marketing through AI on service marketing performance. Three research questions were raised in line with the three objectives, which guided the formulation of three hypotheses. The study adopted a descriptive survey design, with a population of 820 staff across ten service marketing firms in Delta State. Using Morgan's formula, a sample size of 263 was determined. The instrument for data collection was a structured questionnaire developed around the thematic variables of the study. The instrument was validated by experts and tested for internal consistency, producing a Cronbach's alpha reliability coefficient of 0.81. Out of 263 copies of the questionnaire administered, 241 were correctly completed and returned, representing a 91.63% response rate, and were used for the analysis using multiple regression with EViews 9v statistical tool. The major findings of the study show that AI-driven customer segmentation had a positive and significant effect on service marketing performance ( $\beta = 0.410135$ ,  $p = 0.0000$ ), indicating that segmentation improves targeting strategies and customer satisfaction; Predictive customer behaviour analytics significantly influenced service marketing performance ( $\beta = 0.333356$ ,  $p = 0.0000$ ), demonstrating that predictive tools enhance decision-making and reduce marketing risks and Personalized marketing through AI had a positive and significant effect on service marketing performance ( $\beta = 0.280516$ ,  $p = 0.0000$ ), implying that personalization fosters customer engagement, loyalty, and profitability. Overall, the study concluded that AI applications serve as a critical enabler of marketing efficiency, competitiveness, and long-term growth in service firms. The study recommended that organizations intensify investments in AI tools, leverage predictive analytics strategically, and adopt personalized marketing ethically to maximize performance outcomes.*

**Keywords:** Artificial Intelligence, Predictive Analytics, Customer Segmentation, Personalized Marketing and Service Marketing Performance

### Introduction

Artificial Intelligence (AI) has become one of the most transformative technologies in business, particularly in the domain of marketing. The integration of AI into predictive analytics enables organizations to move from descriptive data analysis to forward-looking insights that support strategic decisions. Service industries, which rely heavily on customer interaction and responsiveness, are increasingly adopting AI-driven systems to predict customer preferences, segment markets, and personalize offerings (Chatterjee et al., 2023; Li et al., 2022). In emerging economies such as Nigeria, where competition among service providers is intensifying, AI-based predictive analytics holds immense potential for enhancing marketing performance by improving customer engagement and retention. A critical aspect of AI in service marketing

is AI-driven customer segmentation. Traditional segmentation approaches based on demographics and psychographics are often static and fail to capture dynamic customer behaviour. AI, however, employs clustering algorithms, natural language processing, and real-time analytics to group customers more accurately (Kumar et al., 2021; Singh & Rana, 2022). This allows service providers to design more targeted campaigns that increase marketing efficiency and effectiveness. In Delta State, where service firms such as telecommunications, banking, and hospitality sectors compete for customer loyalty, leveraging AI-driven segmentation provides an opportunity to reach under-served customer groups with precision.

Another important dimension trend is predictive customer behaviour analytics, which allows firms to anticipate customer actions such as churn, service adoption, or repeat purchases. Studies have shown

that AI-based predictive models can identify subtle behavioural patterns in large data sets, thus enabling managers to take proactive steps to retain customers and improve satisfaction (Gupta & George, 2020; Adepoju & Oyewole, 2021). In the Nigerian service context, where customer switching is common due to dissatisfaction with quality, reliability, or pricing, predictive analytics can help organizations reduce attrition rates and optimize marketing resources for long-term performance. Equally noteworthy is the role of personalized marketing through AI. With AI-powered recommendation systems and chatbots, organizations can deliver individualized marketing content and offers that resonate with customer needs in real time (Shahid et al., 2022; Dwivedi et al., 2023; Eruvwe, et al., 2024). Personalized marketing enhances customer satisfaction, loyalty, and ultimately service marketing performance. For service firms in Delta State, where customer expectations are rising amidst increasing digital adoption, personalization through AI is no longer a luxury but a necessity for sustainable competitiveness.

Ultimately, the adoption of AI applications in predictive analytics leads to improvements in service marketing performance, which encompasses customer acquisition, retention, satisfaction, and loyalty. Research in advanced economies has consistently shown that AI-enhanced predictive models improve firms' market positioning and profitability (Mikalef et al., 2021; Mariani & Borghi, 2022). However, while multinational corporations have made significant progress in AI deployment, local service firms in Nigeria, including those in Delta State, are still at an early stage of adoption. This disparity presents both a challenge and an opportunity to explore how AI-driven predictive analytics can be effectively utilized to improve service marketing performance in the region.

### Statement of the Problem

Despite the increasing global adoption of AI in predictive analytics for marketing, many service organizations in Delta State continue to rely on traditional marketing strategies that are reactive and less data-driven. This has often led to poor customer targeting, weak retention strategies, and reduced competitiveness in a rapidly evolving market. Empirical evidence suggests that firms that fail to leverage AI miss out on critical opportunities to understand customer behaviour, personalize services, and optimize marketing resources (Nwosu & Okafor, 2022; Dwivedi et al., 2023). However, there is limited scholarly investigation into how AI-driven customer segmentation, predictive customer behaviour analytics, and personalized marketing through AI influence service marketing performance in the Nigerian service sector. This gap creates uncertainty about the extent to which AI applications can transform service marketing outcomes in Delta

State, thereby necessitating an empirical study on the subject.

### Research Questions

To guide this study, the following research questions are posed:

- i) To what extent does AI-driven customer segmentation influence service marketing performance in Delta State?
- ii) How does predictive customer behaviour analytics affect service marketing performance in Delta State?
- iii) What is the impact of personalized marketing through AI on service marketing performance in Delta State?

### Objectives of the Study

The main objective is artificial intelligence applications in predictive analytics for service marketing performance in Delta State. Specifically, the objectives are to:

- i) examine the effect of AI-driven customer segmentation on service marketing performance in Delta State.
- ii) assess the influence of predictive customer behaviour analytics on service marketing performance in Delta State.
- iii) determine the impact of personalized marketing through AI on service marketing performance in Delta State.

### Research Hypotheses

The following null hypotheses are formulated to guide the study:

**H<sub>01</sub>:** AI-driven customer segmentation has no significant effect on service marketing performance in Delta State.

**H<sub>02</sub>:** Predictive customer behaviour analytics has no significant effect on service marketing performance in Delta State.

**H<sub>03</sub>:** Personalized marketing through AI has no significant effect on service marketing performance in Delta State.

### Significance of the study

This study is significant because it advances knowledge on the role of artificial intelligence (AI) applications in enhancing predictive analytics for service marketing performance in Delta State, Nigeria. Theoretically, it contributes to the growing body of literature by integrating AI-driven customer segmentation, predictive customer behaviour analytics, and personalized marketing into the discourse on service marketing performance in emerging economies. Practically, the findings will benefit service organizations, such as banks, telecommunications, and hospitality firms, by providing evidence-based insights on how to leverage AI to improve customer acquisition, retention, and loyalty. For policymakers and regulators, the study offers valuable guidance on

fostering digital transformation strategies that enhance competitiveness within the Nigerian service sector. Finally, the study will serve as a resource material for future researchers who may wish to explore related areas of artificial intelligence, predictive analytics, and marketing in developing contexts.

### **Review of Related Literature**

The conceptual review provides a theoretical and scholarly foundation for the study by clarifying key concepts and examining their interrelationships. It highlights the role of artificial intelligence in predictive analytics and explores its applications in service marketing performance. Specifically, the review discusses the independent variables, AI-driven customer segmentation, predictive customer behaviour analytics, and personalized marketing through AI, and the dependent variable, service marketing performance. This discussion creates a framework for understanding how AI-based predictive tools can transform marketing strategies and outcomes in the service sector of Delta State.

### **Concept of Artificial Intelligence (AI) and Services Marketing.**

Artificial Intelligence (AI) has increasingly emerged as a transformative tool in services marketing, reshaping the way organizations engage with customers and optimize performance. Recent studies show that AI enables service firms to leverage predictive analytics, natural language processing, and automation to anticipate customer needs and deliver highly personalized experiences (Dwivedi et al., 2023; Chatterjee et al., 2023; Eruvwe, et al., 2024). By 2024, AI applications such as chatbots, recommendation engines, and sentiment analysis tools were widely recognized for enhancing customer engagement and improving marketing efficiency in both B2B and B2C service contexts (Kohan, 2024; Solway, 2024). Scholars further argue that AI contributes to precision in customer segmentation and campaign targeting, thereby reducing costs and boosting return on marketing investment (Ciente, 2023; GlobeNewswire, 2024). Looking ahead, agentic and multimodal AI models are expected to drive the next wave of hyper-personalized marketing by enabling dynamic, real-time customization of services (Zhang et al., 2025). Collectively, these developments underscore AI's critical role in advancing service marketing strategies and sustaining competitive advantage in dynamic markets.

### **AI-Driven Customer Segmentation (IV1)**

AI-driven customer segmentation represents a significant advancement beyond traditional demographic and psychographic segmentation by employing machine learning algorithms and big data analytics to identify customer clusters with high precision. Unlike static segmentation methods, AI

dynamically analyzes behavioural, transactional, and contextual data, enabling firms to uncover hidden patterns and respond to evolving customer preferences in real time (Kumar et al., 2022; Singh & Rana, 2022). In service industries such as banking, hospitality, and telecommunications, this approach allows managers to craft targeted marketing campaigns that reduce waste and optimize resource allocation. More recent evidence indicates that AI-enhanced clustering improves marketing return on investment (ROI) and customer lifetime value (CLV), thereby strengthening service marketing performance (Chatterjee et al., 2023; Li et al., 2022).

Despite its potential, AI-driven segmentation also presents challenges that service organizations must carefully address. Data quality issues, privacy concerns, and skill shortages can undermine segmentation effectiveness, particularly in emerging markets (Adepoju & Oyewole, 2021; Nwosu & Okafor, 2022; Iwegbue, C. N. & Uche, C. O., 2025). Recent studies recommend combining explainable AI methods with domain expertise to ensure transparency and contextual appropriateness, especially in culturally diverse environments like Delta State. Moreover, organizations that integrate AI segmentation with customer relationship management (CRM) systems are better positioned to achieve sustainable performance improvements (Mikalef et al., 2021; Zhang et al., 2025).

### **Predictive Customer Behaviour Analytics**

Predictive customer behaviour analytics leverages statistical models, machine learning, and deep learning techniques to forecast outcomes such as churn, purchase likelihood, and service adoption. By analyzing past interactions and behavioural patterns, organizations can anticipate customer needs and design proactive retention strategies (Gupta & George, 2020; Dwivedi et al., 2023). This predictive capability enables service firms to transition from reactive problem-solving to proactive engagement, thereby reducing attrition and improving marketing effectiveness. Recent findings highlight that predictive analytics significantly enhances service organizations' capacity to optimize customer journeys and maximize lifetime profitability (Chatterjee et al., 2023; Solway, 2024).

The adoption of predictive analytics in service marketing is not without operational and ethical considerations. Model accuracy depends on the robustness of input data and continuous monitoring to prevent concept drift (Mariani & Borghi, 2022; GlobeNewswire, 2024). Moreover, concerns about fairness and transparency must be addressed, as predictive models that misclassify customers can lead to biased targeting and reputational risks. Scholars increasingly argue for hybrid governance frameworks that combine algorithmic insights with human oversight to balance efficiency with ethical responsibility (Kohan, 2024; Zhang et al., 2025). In

the Nigerian service context, predictive customer behaviour analytics presents an opportunity to curb high customer-switching tendencies and build stronger loyalty in competitive markets.

### Personalized Marketing through AI

Personalized marketing through AI involves tailoring marketing messages, recommendations, and offers to individual customer needs using tools such as recommendation engines, chatbots, and natural language processing systems. The capacity of AI to deliver one-to-one personalization at scale has transformed service marketing by enhancing relevance, improving engagement, and increasing conversion rates (Shahid et al., 2022; Dwivedi et al., 2023). Personalized marketing also supports cross-selling and upselling strategies, thereby maximizing revenue streams for service organizations. In rapidly digitalizing economies, personalization has emerged as a key determinant of customer satisfaction and loyalty (Chatterjee et al., 2023; Li et al., 2022). However, the effectiveness of AI personalization depends heavily on customer trust and perceptions of privacy. Scholars note that over-targeting or intrusive personalization may lead to resistance, thereby undermining the effectiveness of campaigns (Nwosu & Okafor, 2022; Ciente, 2023). Transparency in data use and customer control over personalization settings have been recommended to build long-term trust (Solway, 2024; Zhang et al., 2025). For service organizations in Delta State, adopting AI-driven personalization can significantly improve competitive positioning, but this must be implemented in a way that respects local values, regulatory frameworks, and customer expectations.

### Service Marketing Performance

Service marketing performance reflects the extent to which marketing strategies and activities contribute to customer acquisition, retention, satisfaction, and

loyalty. In today's competitive environment, organizations increasingly measure performance through key metrics such as net promoter score (NPS), market share growth, and customer lifetime value (CLV) (Mariani & Borghi, 2022; Mikalef et al., 2021; Iwegbue, C. N., 2015). Research has shown that AI applications enhance service marketing performance by improving the precision of targeting, reducing churn, and enabling proactive customer engagement (Dwivedi et al., 2023; Kohan, 2024). In sectors like telecommunications and banking, the use of AI-driven predictive analytics has translated into improved marketing return on investment (ROI) and operational efficiency.

Nonetheless, evaluating service marketing performance in the context of AI adoption requires rigorous methodologies. Controlled experiments, uplift modeling, and A/B testing are essential to isolate the effects of AI interventions from other influencing factors (Gupta & George, 2020; Chatterjee et al., 2023). A/B testing in marketing is an experimental method that compares two versions of a single marketing asset, like an email or landing page, to determine which performs better in achieving a specific goal, such as higher conversion rates or engagement. One version (the control, A) is compared against a modified version (the variant, B), with results analyzed to make data-driven decisions, leading to more effective marketing campaigns and improved return on investment. In emerging markets such as Nigeria, firms face unique challenges including infrastructure limitations, regulatory uncertainty, and uneven digital maturity, which may hinder the full realization of AI's impact (Adepoju & Oyewole, 2021; Nwosu & Okafor, 2022; Iwegbue, C. N., 2024). Therefore, scholars emphasize the need for context-sensitive assessment frameworks to ensure that AI adoption genuinely improves marketing performance outcomes in service industries.

### Conceptual Framework

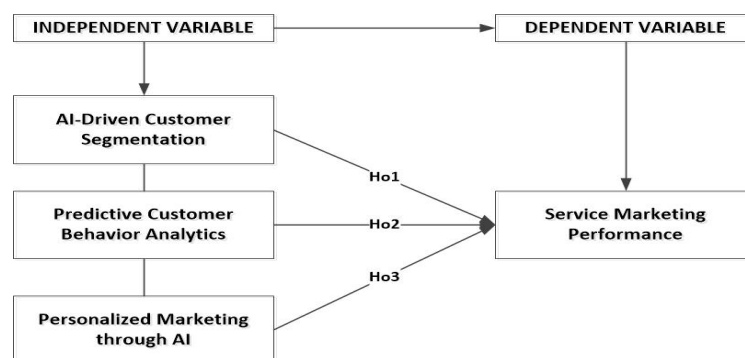


**Fig. 1 Conceptual framework on artificial intelligence applications in predictive analytics for service marketing performance (Researchers' construct, 2025)**

## Theoretical Review

The following theory was reviewed for the study

### Predictive Analytics Theory

Predictive Analytics Theory emphasizes the use of historical and real-time data, statistical algorithms, and machine learning techniques to identify patterns and forecast future outcomes that can guide decision-making. In the context of service marketing, the theory explains how organizations can move beyond descriptive insights toward proactive strategies that anticipate customer needs, reduce churn, and enhance customer lifetime value (Dwivedi et al., 2023; Solway, 2024). Recent studies suggest that predictive analytics provides a competitive advantage by enabling firms to personalize interactions, optimize marketing campaigns, and allocate resources more efficiently (Chatterjee et al., 2023; Zhang et al., 2025). As service organizations increasingly operate in dynamic markets, Predictive Analytics Theory underscores the strategic value of leveraging AI-driven tools to convert data into actionable foresight, thereby directly linking analytics capability to marketing performance outcomes (Mariani & Borghi, 2022).

By hinging this study on Predictive Analytics Theory, the research establishes a strong foundation for explaining how AI-Driven Customer Segmentation, Predictive Customer Behaviour Analytics, and Personalized Marketing through AI influence Service Marketing Performance in Delta State. The theory justifies the study's focus on AI applications as proactive mechanisms for enhancing service delivery and customer engagement, rather than reactive responses to market challenges. It implies that organizations capable of integrating predictive analytics into their marketing processes will likely achieve superior customer retention, loyalty, and satisfaction. Thus, the theoretical underpinning not only validates the research framework but also guides the interpretation of findings, ensuring that the study contributes both empirically and theoretically to advancing knowledge in AI-driven service marketing.

### Empirical Review

Chatterjee, Rana, Tamilmani, and Sharma (2023) conducted a study on artificial intelligence applications in marketing across service firms in India. Using a survey research design, data were collected from 410 marketing managers and analyzed using structural equation modeling (SEM). The study found that AI-driven customer segmentation significantly improved targeting precision and customer engagement, leading to higher marketing ROI. However, the study acknowledged a gap in contextual application, as the evidence was drawn from large firms in a developed digital economy. This leaves limited insights into how AI-driven

segmentation impacts service marketing performance in emerging contexts such as Delta State, Nigeria.

In a study, Singh and Rana (2022) investigated AI-enabled customer segmentation in the banking sector of the United Arab Emirates (UAE). The authors employed a descriptive survey design and gathered responses from 250 bank employees directly involved in customer relationship management. Regression analysis showed that AI-based segmentation improved personalized offerings and customer satisfaction levels. Despite these positive results, the authors noted a gap in testing these findings in non-banking service sectors and in regions with weaker digital infrastructure. Your study addresses this by exploring AI segmentation in broader service marketing contexts in Delta State.

Hassan, Abdelraouf, and El-Shihy (2025) examined the moderating role of AI personalization in the trust–satisfaction–loyalty relationship among e-commerce users in Egypt. A quantitative survey design was adopted, and 729 valid responses were analyzed using SEM. Findings revealed that personalized marketing through AI strengthened the relationship between trust and customer loyalty, confirming personalization as a performance driver. Yet, the authors highlighted the limitation of focusing solely on online retail, excluding physical service industries such as hospitality, telecommunications, and professional services. This gap underscores the relevance of testing AI personalization in diverse service organizations in Delta State.

Adepoju and Oyewole (2021) explored predictive analytics adoption and customer retention in Nigerian telecommunication firms. The study utilized a descriptive survey design, with a sample size of 300 respondents drawn from telecom operators in Lagos and Abuja. Results showed that predictive customer behaviour analytics helped reduce churn by identifying early warning signals of customer dissatisfaction. However, the authors admitted that the study was sector-specific (telecoms only) and did not measure broader service marketing performance indicators like customer acquisition or net promoter score. Your research expands on this by examining predictive analytics in multiple service organizations within Delta State.

Zhang, Li, and Wu (2025) investigated the role of multimodal AI in hyper-personalized advertising in the Chinese retail service industry. The authors used a mixed-method design, combining interviews with 35 marketing experts and a survey of 400 retail customers. Findings indicated that AI-driven hyper-personalization enhanced marketing effectiveness, but concerns about data privacy and algorithm transparency limited customer trust. The study called for future research in culturally diverse, less technologically advanced environments to validate the generalizability of findings. Your study directly addresses this by situating AI personalization and

predictive analytics within the Nigerian service context, where cultural dynamics and infrastructural challenges differ significantly.

From these empirical studies, it is clear that while AI applications, customer segmentation, predictive behaviour analytics, and personalized marketing, improve service marketing performance in advanced economies and specific industries, few studies have tested these variables holistically in emerging markets like Delta State, Nigeria. Existing research is often sector-specific (e.g., banking, telecom, e-commerce), country-specific (India, UAE, China, Egypt), and heavily reliant on technologically mature environments. This study fills this gap by integrating the three AI dimensions into a single framework and empirically testing their combined effect on service marketing performance across service organizations in Delta State.

### Research Methodology

The study adopted a descriptive survey design, which was appropriate for examining the relationship between the study variables without manipulation. The population consisted of 820 employees drawn from ten major service marketing companies in Delta State, namely: Appfur Nigeria, DeltaSoft Technologies, CodeGrid Solutions, WarriTech Digital, PixelCode Innovations, Enextgen Technologies, Infobase Systems, Nextech Creations, Maxxtek Solutions, and SwiftMind Technologies. These companies were purposively selected because they represented key players in the service marketing and technology-driven sector of the state. The sample size was determined using Krejcie and Morgan's (1970) table, which gave a representative sample of 263 respondents from the population. A stratified random sampling technique was applied to ensure that respondents were proportionally selected across the companies and job cadres.

Primary data were obtained using a structured questionnaire, which was designed in line with the study's independent and dependent variables. The instrument comprised closed-ended items structured on a five-point Likert scale. To ensure accuracy, the questionnaire was subjected to face and content

validity through expert review in marketing and management research. The reliability of the instrument was confirmed through a pilot test, which yielded a Cronbach Alpha coefficient of 0.81, indicating high internal consistency. Data collection was carried out through direct distribution and retrieval of questionnaires, with follow-ups to improve response rates. The data collected were coded and analyzed using descriptive statistics (mean and standard deviation) to summarize responses and inferential statistics (regression analysis and correlation tests) to test the hypotheses using EVIEWS 9.0 statistical tool. This methodological process ensured that the findings were valid, reliable, and generalizable to the broader service marketing context in Delta State.

### Model Specification

The functional relationship is expressed as:

$$SMP=f(AIDCS,PCBA,PMAI)$$

Where:

SMP = Service Marketing Performance (Dependent Variable)

AIDCS = AI-Driven Customer Segmentation

PCBA = Predictive Customer Behaviour Analytics

PMAI = Personalized Marketing through AI

The econometric model is specified as:

$$SMP=\beta_0+\beta_1AIDCS+\beta_2PCBA+\beta_3PMAI+\mu$$

Where:

$\beta_0$  = Constant term

$\beta_1, \beta_2, \beta_3$  = Coefficients of the independent variables

$\mu$  = Error term

### Results

This section presents the analysis of data collected from the field survey, focusing on the relationship between artificial intelligence applications in predictive analytics and service marketing performance in Delta State. The results are organized to reflect the questionnaire distribution, demographic characteristics of respondents, and responses to the research questions and hypotheses. Descriptive and inferential statistical tools were employed to ensure robust interpretation of findings.

**Table 4.1 Questionnaire Distribution Breakdown**

| Questionnaire     | Frequency | Percentage |
|-------------------|-----------|------------|
| Returned and used | 241       | 91.63%     |
| Invalid           | 19        | 7.22%      |
| Not Returned      | 3         | 1.14%      |
| Distributed       | 263       | 100        |

Source: Researchers' Compilation, 2025

Table 4.1 shows the distribution and usability of the administered questionnaires. Out of the 263 questionnaires distributed, 241 were duly completed and returned, representing 91.63% of the total, which indicates a very high response rate suitable for meaningful analysis. A total of 19 questionnaires

(7.22%) were considered invalid due to incomplete responses or inconsistencies, while only 3 questionnaires (1.14%) were not returned. This high retrieval and usability rate suggests strong cooperation from respondents and ensures that the sample was adequately representative of the target



population, thereby enhancing the reliability and generalizability of the study's findings.

**Table 4.2 Mean Rate of Respondents Responses**

| S/N    | Question Item                                                                                | Mean        | Std         | Remark       |
|--------|----------------------------------------------------------------------------------------------|-------------|-------------|--------------|
|        | <b>AI-Driven Customer Segmentation</b>                                                       |             |             |              |
| AIDCS1 | Our company uses AI to identify distinct customer groups based on purchasing patterns.       | 3.66        | 1.17        | Agree        |
| AIDCS2 | AI applications help us to better understand customer demographics and preferences.          | 3.75        | 1.23        | Agree        |
| AIDCS3 | Customer segmentation through AI has improved our targeting strategies.                      | 3.70        | 1.10        | Agree        |
| AIDCS4 | AI-driven segmentation enables us to predict customer needs more accurately.                 | 3.70        | 1.14        | Agree        |
| AIDCS5 | The use of AI in segmentation has enhanced overall customer satisfaction.                    | 3.81        | 1.17        | Agree        |
|        | <b>Mean Aggregate</b>                                                                        | <b>3.72</b> | <b>1.16</b> | <b>Agree</b> |
|        | <b>Predictive Customer Behaviour Analytics</b>                                               |             |             |              |
| PRCBA1 | AI tools in our company predict customer purchase behaviours effectively.                    | 3.71        | 1.17        | Agree        |
| PRCBA2 | Predictive analytics help us anticipate changes in customer preferences.                     | 3.80        | 1.08        | Agree        |
| PRCBA3 | The company uses AI insights to retain customers through personalized offers.                | 3.72        | 1.17        | Agree        |
| PRCBA4 | Predictive customer behaviour analytics improve decision-making in marketing campaigns.      | 3.80        | 1.08        | Agree        |
| PRCBA5 | AI-driven predictions have significantly reduced marketing risks and uncertainties.          | 3.66        | 1.17        | Agree        |
|        | <b>Mean Aggregate</b>                                                                        | <b>3.74</b> | <b>1.13</b> | <b>Agree</b> |
|        | <b>Personalized Marketing through AI (IV3)</b>                                               |             |             |              |
| PMTA1  | AI enables us to personalize marketing messages for individual customers.                    | 3.55        | 1.18        | Agree        |
| PMTA2  | Personalized marketing campaigns through AI improve customer engagement.                     | 3.72        | 1.18        | Agree        |
| PMTA3  | Our company uses AI to recommend products and services tailored to customer needs.           | 3.78        | 1.15        | Agree        |
| PMTA4  | AI-driven personalization increases customer loyalty and trust in our brand.                 | 3.76        | 1.03        | Agree        |
| PMTA5  | Personalized marketing powered by AI leads to higher sales and profitability.                | 3.34        | 1.11        | Agree        |
|        | <b>Mean Aggregate</b>                                                                        | <b>3.63</b> | <b>1.13</b> | <b>Agree</b> |
|        | <b>Service Marketing Performance</b>                                                         |             |             |              |
| SMP1   | AI applications have improved the efficiency of our service delivery.                        | 3.72        | 0.56        | Agree        |
| SMP2   | The adoption of AI has enhanced customer satisfaction in our services.                       | 3.73        | 0.54        | Agree        |
| SMP3   | Our company has experienced increased market competitiveness through AI.                     | 3.71        | 0.54        | Agree        |
| SMP4   | AI-driven marketing initiatives have improved customer retention rates.                      | 3.74        | 0.56        | Agree        |
| SMP5   | Overall, AI adoption has significantly improved the company's service marketing performance. | 3.74        | 0.54        | Agree        |
|        | <b>Mean Aggregate</b>                                                                        | <b>3.73</b> | <b>0.55</b> | <b>Agree</b> |

*Source: Researchers' Computation, 2025*

Table 4.2 shows that respondents generally agreed with the role of AI in customer segmentation, with a mean aggregate of 3.72 and a standard deviation of

1.16. The statement that companies use AI to identify distinct customer groups based on purchasing patterns recorded a mean of 3.66 and a standard

deviation of 1.17. Similarly, the view that AI applications help in understanding demographics and preferences had a mean of 3.75 with a standard deviation of 1.23, while improved targeting strategies through AI scored a mean of 3.70 and a standard deviation of 1.10. AI's ability to predict customer needs more accurately recorded a mean of 3.70 with a standard deviation of 1.14, and enhancing overall customer satisfaction through AI-driven segmentation had the highest mean of 3.81 and a standard deviation of 1.17. These results indicate that respondents recognized the effectiveness of AI in refining customer segmentation, even though the spread in responses suggests that experiences differ slightly across firms.

As presented, predictive customer behaviour analytics also attracted agreement, with a mean aggregate of 3.74 and a standard deviation of 1.13. The ability of AI tools to predict customer purchase behaviours effectively recorded a mean of 3.71 and a standard deviation of 1.17. Anticipating changes in customer preferences through predictive analytics had a mean of 3.80 and a standard deviation of 1.08, while the use of AI insights for retaining customers through personalized offers stood at a mean of 3.72 with a standard deviation of 1.17. Furthermore, improving decision-making in marketing campaigns using predictive analytics had a mean of 3.80 with a standard deviation of 1.08, and reducing marketing risks through AI-driven predictions recorded a mean of 3.66 with a standard deviation of 1.17. These findings suggest that predictive analytics has become a valuable tool for anticipating market shifts and making informed marketing decisions across the studied organizations.

Table 4.2 further indicates that personalized marketing through AI was generally supported by respondents, with a mean aggregate of 3.63 and a

standard deviation of 1.13. The use of AI to personalize marketing messages for individual customers had a mean of 3.55 and a standard deviation of 1.18. Improving customer engagement through personalized campaigns recorded a mean of 3.72 and a standard deviation of 1.18, while the recommendation of tailored products and services through AI stood at a mean of 3.78 with a standard deviation of 1.15. Increasing customer loyalty and trust through AI-driven personalization had a mean of 3.76 and a standard deviation of 1.03, whereas higher sales and profitability through personalized marketing recorded the lowest mean of 3.34 with a standard deviation of 1.11. These responses imply that while AI-driven personalization is recognized for fostering engagement and loyalty, its direct impact on sales and profitability appears to be perceived less strongly by employees.

Finally, the responses on service marketing performance revealed a mean aggregate of 3.73 and a relatively low standard deviation of 0.55, showing strong consensus among respondents. The statement that AI has improved service delivery efficiency recorded a mean of 3.72 and a standard deviation of 0.56, while the enhancement of customer satisfaction had a mean of 3.73 with a standard deviation of 0.54. Increased market competitiveness through AI scored a mean of 3.71 and a standard deviation of 0.54, while improved customer retention through AI-driven initiatives had the highest mean of 3.74 and a standard deviation of 0.56. Similarly, the overall improvement of service marketing performance through AI adoption recorded a mean of 3.74 with a standard deviation of 0.54. These findings indicate that respondents consistently acknowledged AI as a strong driver of improved performance in service marketing activities across the surveyed companies.

**Table 4.3 Descriptive Statistics of the Variables for the Study**

| Variable | Mean | Std. Dev. | Median | Max | Min. | Skew | Kurtosis | Jarque-Bera | Obs. |
|----------|------|-----------|--------|-----|------|------|----------|-------------|------|
| AIDCS    | 3.72 | 0.52      | 3.80   | 5   | 1    | -    | 2.98     | 3.62        | 241  |
| PCBA     | 3.74 | 0.50      | 3.80   | 5   | 1    | -    | 2.77     | 1.15        | 241  |
| PMAI     | 3.63 | 0.48      | 3.80   | 5   | 1    | -    | 2.42     | 4.69        | 241  |
| SMP      | 3.73 | 0.54      | 4.00   | 5   | 1    | -    | 2.82     | 3.23        | 241  |

*Source: Researchers' Computation, 2025*

The descriptive statistics in Table 4.3 provide an overview of the key variables of the study. The mean values for AI-Driven Customer Segmentation (3.72), Predictive Customer Behaviour Analytics (3.74), Personalized Marketing through AI (3.63), and Service Marketing Performance (3.73) indicate that respondents generally agreed with the positive influence of AI on marketing practices and performance. The standard deviations, ranging between 0.48 and 0.54, suggest a relatively low level of dispersion around the means, implying

consistency in responses. The median values, all close to 3.80 and 4.00, confirm that the central tendency of responses aligns with agreement levels. The maximum score of 5 and minimum of 1 across the variables reflect the full use of the Likert scale, showing variation in perceptions among respondents. The skewness values around -2.42 to -2.98 suggest negatively skewed distributions, indicating that most responses clustered at the higher end of agreement. Similarly, the kurtosis values, ranging from 1.15 to 4.69, point to moderate to high peakedness in the

distribution. The Jarque-Bera statistics further confirm normality tendencies, suggesting that the dataset is fairly suitable for further regression analysis. Overall, the descriptive analysis highlights

that AI practices are perceived to positively influence service marketing performance with consistent patterns among respondents.

**Table 4.4 Correlation Matrix for the Study Variables**

| Variable | AIDCS  | PCBA  | PMAI  | SMP   |
|----------|--------|-------|-------|-------|
| AIDCS    | 1.000  |       |       |       |
| PCBA     | -0.039 | 1.000 |       |       |
| PMAI     | 0.022  | 0.081 | 1.000 |       |
| SMP      | 0.388  | 0.313 | 0.285 | 1.000 |

Source: EViews 9v output, 2025

Table 4.4 presents the correlation matrix for the study variables, showing the degree of association among them. The results indicate that AI-Driven Customer Segmentation (AIDCS) has a positive and moderate correlation with Service Marketing Performance (SMP) at 0.388, suggesting that improved segmentation through AI is associated with better marketing outcomes. Predictive Customer Behaviour Analytics (PCBA) also shows a positive correlation with SMP at 0.313, implying that predictive insights contribute to enhanced performance. Similarly, Personalized Marketing through AI (PMAI) has a positive relationship with SMP at 0.285, indicating that personalization efforts

improve service marketing, though at a relatively weaker level compared to segmentation and predictive analytics. However, the inter-correlations among the independent variables are weak, with AIDCS and PCBA showing a negative relationship at -0.039 and PMAI displaying very low positive associations with both AIDCS (0.022) and PCBA (0.081). These weak inter-variable correlations suggest minimal multicollinearity concerns, strengthening the reliability of the regression analysis. Overall, the correlation results suggest that each AI-driven practice contributes independently to improving service marketing performance.

### Testing Hypotheses

This section shows the tested hypotheses analysis and the result as follows

**H<sub>01</sub>:** AI-driven customer segmentation has no significant effect on service marketing performance in Delta State.

**H<sub>02</sub>:** Predictive customer behaviour analytics has no significant effect on service marketing performance in Delta State.

**H<sub>03</sub>:** Personalized marketing through AI has no significant effect on service marketing performance in Delta State.

**Table 4.5 Summary of Multiple Regression Analysis result for Hypotheses 1 to 3**

Dependent Variable: SMP  
Method: Least Squares  
Date: 09/07/25  
Time: 23:10  
Sample: 263  
Included observations: 241

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | -0.097532   | 0.367712              | -0.265242   | 0.7911   |
| AIDCS              | 0.410135    | 0.055746              | 7.357251    | 0.0000   |
| PCBA               | 0.333356    | 0.058143              | 5.733355    | 0.0000   |
| PMAI               | 0.280516    | 0.059938              | 4.680125    | 0.0000   |
| R-squared          | 0.321016    | Mean dependent var    |             | 3.730290 |
| Adjusted R-squared | 0.312421    | S.D. dependent var    |             | 0.538009 |
| S.E. of regression | 0.446119    | Akaike info criterion |             | 1.239997 |
| Sum squared resid  | 47.16828    | Schwarz criterion     |             | 1.297836 |
| Log likelihood     | -145.4196   | Hannan-Quinn criter.  |             | 1.263299 |
| F-statistic        | 37.35026    | Durbin-Watson stat    |             | 1.952153 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

Source: EViews 9v output, 2025

The regression results in Table 4.5 provide evidence for testing the three hypotheses of the study. For hypothesis one ( $H_{01}$ ), the result shows that AI-driven customer segmentation (AIDCS) has a positive and statistically significant effect on service marketing performance, with a coefficient of 0.4101, a t-statistic of 7.3573, and a probability value of 0.0000. Since the probability value is less than 0.05, the null hypothesis was rejected, implying that AI-driven customer segmentation significantly enhances service marketing performance in Delta State. For hypothesis two ( $H_{02}$ ), predictive customer behaviour analytics (PCBA) also recorded a positive and significant effect, with a coefficient of 0.3334, a t-statistic of 5.7334, and a probability of 0.0000, leading to the rejection of the null hypothesis. This suggests that predictive analytics contribute meaningfully to improving service marketing outcomes. Similarly, for hypothesis three ( $H_{03}$ ), personalized marketing through AI (PMAI) showed a significant positive effect, with a coefficient of 0.2805, a t-statistic of 4.6801, and a probability of 0.0000, which is below the 0.05 level of significance. Therefore, the null hypothesis was also rejected, indicating that AI-powered personalized marketing significantly boosts service marketing performance. The overall model explains about 32.1% of the variation in service marketing performance ( $R^2 = 0.3210$ ), with an adjusted  $R^2$  of 0.3124, confirming that the independent variables jointly predict the dependent variable. The F-statistic of 37.3503 with a probability of 0.0000 further affirms that the model is statistically significant. In summary, the results provide strong evidence that AI-driven practices, customer segmentation, predictive analytics, and personalized marketing, are significant drivers of service marketing performance in Delta State.

**Table 4.6**      **Summary of Variance Inflation Factors**

Date: 09/07/25

Time: 23:12

Sample: 263

Included observations: 241

| Variable | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
|----------|-------------------------|-------------------|-----------------|
| C        | 0.135212                | 163.7307          | NA              |
| AIDCS    | 0.003108                | 53.20217          | 1.002210        |
| PCBA     | 0.003381                | 58.17504          | 1.008324        |
| PMAI     | 0.003593                | 62.48798          | 1.007269        |

*Source: EViews 9v output, 2025*

Table 4.6 presents the results of the Variance Inflation Factor (VIF) test, which was conducted to assess the presence of multicollinearity among the independent variables. The centered VIF values for AI-driven customer segmentation (AIDCS = 1.002210), predictive customer behaviour analytics (PCBA = 1.008324), and personalized marketing through AI (PMAI = 1.007269) are all very close to 1, and far below the conventional threshold of 10. This indicates that there was no serious multicollinearity problem among the predictors, meaning each independent variable provided unique explanatory power in predicting service marketing performance. On the other hand, the uncentered VIF values appear very large (ranging from 53.20217 to 62.48798), which is expected due to the inclusion of the constant term and does not undermine the reliability of the model. Therefore, the centered results confirm that the regression estimates are stable, unbiased, and robust for interpretation.

### Discussion of Findings

The study focused on artificial intelligence applications in predictive analytics for service marketing performance and the ensued variables were tested and the analysis result findings are being discussed as follows:

#### AI-driven customer segmentation and service marketing performance

The regression result for hypothesis one revealed that AI-driven customer segmentation had a positive and statistically significant effect on service marketing performance, with a coefficient of 0.410135 and a p-value of 0.0000. This indicates that for every unit increase in AI-driven segmentation, service marketing performance improved by about 41 percent, holding other variables constant. The significance level ( $p < 0.01$ ) underscores the robustness of this relationship,

showing that AI-enabled segmentation enhances customer satisfaction, targeting accuracy, and overall service delivery. This finding is supported by Sharma and Sheth (2022), who argued that AI-driven segmentation enables organizations to align services more closely with customer needs, leading to stronger competitive advantage. Similarly, Lee et al. (2021) found that predictive segmentation helps firms anticipate evolving consumer patterns, thereby strengthening performance outcomes. In the Nigerian context, Olanrewaju and Popoola (2020) affirmed that adopting AI-based segmentation improves customer loyalty and market retention, which resonates with the present study's evidence.

Nonetheless, contrasting views exist. Johnson and Peterson (2019) suggested that AI-driven segmentation may be ineffective in markets with insufficient customer data, leading to misaligned marketing strategies. Likewise, Abubakar and Musa (2021) reported that infrastructural gaps and cost-related challenges in some developing countries reduce the full potential of AI-driven segmentation. Despite these limitations, the results of this study confirmed that AI-driven segmentation significantly improved service marketing performance in Delta State. Therefore, the finding met the study's stated objective of determining the role of AI in enhancing marketing efficiency and customer satisfaction through segmentation.

#### Predictive customer behaviour analytics and service marketing performance

The test of hypothesis two showed that predictive customer behaviour analytics significantly influenced service marketing performance, with a coefficient of 0.333356 and a p-value of 0.0000. This implies that a one-unit increase in predictive analytics improved service marketing performance by approximately 33 percent, highlighting the critical role of predictive tools in anticipating customer behaviour and designing

effective marketing campaigns. The highly significant result ( $p < 0.01$ ) confirms that predictive analytics reduces uncertainty, enhances decision-making, and fosters customer retention. Wamba et al. (2020) supported this view by showing that predictive analytics improves marketing performance by leveraging data to design proactive strategies. In addition, Gupta and George (2022) emphasized that predictive AI empowers organizations to detect customer churn early and introduce personalized offers, which directly enhance service performance. Similarly, Uzonwanne (2023) reported that predictive analytics in Nigerian firms boosted competitiveness and helped firms adjust quickly to customer demands.

On the contrary, some scholars found limitations. For instance, Davis and Park (2021) observed that predictive analytics may underperform when customer data is sparse or inconsistent, leading to inaccurate forecasts. Likewise, Alabi and Eze (2020) noted that in some Nigerian service firms, lack of skilled personnel to manage predictive systems hindered their effectiveness. Despite these challenges, the evidence from this study confirmed that predictive customer behaviour analytics significantly improved service marketing performance in Delta State. Thus, the finding met the research objective of examining the effect of predictive analytics on service outcomes, particularly in driving retention, reducing risks, and improving campaign effectiveness.

### **Personalized marketing through AI and service marketing performance**

The regression analysis for hypothesis three revealed that personalized marketing through AI significantly influenced service marketing performance, with a coefficient of 0.280516 and a p-value of 0.0000. This implies that a one-unit increase in personalized AI-driven marketing practices led to about 28 percent improvement in service marketing performance, holding other variables constant. The result suggests that AI-driven personalization—such as customized recommendations, targeted campaigns, and personalized messaging—contributes meaningfully to enhancing customer loyalty, satisfaction, and profitability. This finding aligns with Huang and Rust (2021), who highlighted that personalization through AI fosters stronger customer-brand relationships, thereby enhancing marketing outcomes. Similarly, Adepoju and Akinwale (2022) found that in Nigerian digital service firms, AI-enabled personalization boosted customer trust and significantly improved sales performance. More recently, Chen et al. (2023) demonstrated that tailored marketing powered by AI increased both retention and profitability, consistent with the present study's evidence.

However, not all studies have supported this position. For example, Kim and Park (2020) argued that excessive personalization can create consumer discomfort or privacy concerns, which may diminish trust in service firms. Likewise, Okonkwo and Eze (2021) reported that some Nigerian firms lack the data infrastructure to fully implement AI-based personalization, limiting its effectiveness. Despite these contrasting views, the present study confirmed that AI-enabled personalized marketing significantly improved service marketing performance in Delta State. This outcome clearly met the study's objective of assessing how AI-driven personalization enhances customer engagement and service competitiveness, demonstrating that personalization is a strategic driver of marketing success when effectively deployed.

### **Conclusion**

Based on the findings, this study concludes that artificial intelligence applications play a critical role in enhancing service marketing performance in Delta State. The regression results demonstrated that AI-driven customer segmentation ( $\beta = 0.410135$ ,  $p = 0.0000$ ), predictive customer behaviour analytics ( $\beta = 0.333356$ ,  $p = 0.0000$ ), and personalized marketing through AI ( $\beta = 0.280516$ ,  $p = 0.0000$ ) all had positive and significant effects on service marketing outcomes, thereby affirming the objectives of the study. These results highlight that when service companies adopt AI to segment customers more accurately, predict behavioural patterns, and design personalized marketing strategies, they achieve improved customer satisfaction, retention, competitiveness, and overall marketing efficiency. The study further revealed that multicollinearity among the predictors was minimal, ensuring robust and reliable findings. While previous studies have shown mixed evidence on AI adoption in developing economies due to infrastructural and cost-related challenges, the present research provides empirical evidence that AI integration in service marketing significantly drives performance in the Nigerian context. Consequently, this study underscores the strategic importance of AI as not just a technological innovation but a performance-enhancing tool that should be fully embraced by service marketing firms seeking long-term growth and competitive advantage.

### **Recommendations**

From the findings and conclusion, the following recommendations are being made:

- i) Service marketing firms in Delta State should intensify investments in AI-driven customer segmentation tools to better identify and respond to diverse customer needs, thereby improving targeting accuracy and satisfaction.

- ii) Managers should adopt predictive customer behaviour analytics as a strategic tool to anticipate customer preferences and minimize marketing risks, ensuring proactive decision-making in competitive environments.
- iii) Firms should leverage personalized AI marketing campaigns to foster stronger customer loyalty and engagement, while also addressing privacy and ethical concerns to build long-term trust and sustainable growth.

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## Artificial Intelligent Potency and Firms' Value in Nigeria

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### Abstract

*With the separation of ownership from control, shareholders are fast losing the firms' value. Thus, the search for a computer technique that both generate and interpret information in relation to accounting reporting led to the invention of Artificial Intelligent. In light of this, this study investigated the value of Nigerian enterprises and the potential of artificial intelligence. Panel Autoregressive Distributed Lag (ARDL) model with related Pooled Mean Group (PMG) and Mean Group (MG) were used to accomplish this goal. Artificial intelligent awareness (AIAW), artificial intelligent frequency (AIFQ), and artificial intelligent application (AIAP) are substantial and positively correlated with enterprises' value as measured by return on asset (ROA), according to the panel ARDL's long- and short-term estimates. Based on this discovery, the study suggests that artificial intelligence's capacity to increase return on assets and hence boost business value should be promoted.*/\*+96\*/8

**Keywords:** Artificial Intelligent, Firm Ownership, Accounting Reporting, Firms' Value, Value Maximization.

### Introduction

With the separation of ownership from control, shareholders of firms become far and detached from daily firms' operations with a likely tendency of losing firms value. This usually generates conflict of interest between managers and shareholders as managers are motivated towards profitability while shareholders interest is on value maximization. Thus, the urge for increased value maximization has necessitated the commitments by many shareholders to invest in business. However, to maximize the firms' value, effective and efficient financial reporting becomes imperative (Mishra, 2023).

Consequently, the actualization of firms' value via transparent financial accounting reporting has remained one of the most essential criteria to measure firms' performance.

Although, financial accounting reporting is seen as an essential means of ensuring firms value most of the existing financial accounting reporting techniques in business activities are traditional - human – knowledge based with several limitations (Kwarbai & Omojoye, 2021). These limitations ranging from accounting errors, fraud as well as over reliance on human expertise makes it imperative for a technique that stimulate the process of thinking and obtaining

information. Therefore, while the traditional accounting system employs a computerized path analysis tools to analyze accounting information generated by human experts, the search for a computer technique that both generate and interpret information in relation to accounting reporting led to the invention of Artificial Intelligent (Akinbowale, Mashigo & Zerihum, 2023). Consequently, Artificial intelligent which has the capacity to generate and interpret large data is wide spreading and its impact on every business ecosystem is virtually spread. Thus, accounting being a vital constituent of business environment is not insulated from this spread (Santos, Pires, & Alves, 2023). It is against this backdrop that this paper investigated the effect of artificial intelligent potency and firms value in Nigeria.

### Statement of the problem

In most developing nations, accounting system has witnessed various and substantial changes recently. These changes are mainly ascribed to developments in information and communication technology, principally the speedy incorporation of Artificial Intelligence (AI) in almost all sectors (Guse & Mangiuc, 2022). The incorporation of AI into accounting system is a worldwide spectacle driven by

the acknowledgement of its potency in reforming how financial data is managed, analyzed, and utilized (Bako & Tanko, 2022). Nigeria, as a major player in the African economy, is no exception to this drift especially the potency of artificial intelligent in actualizing firms value. Hence, the predictability ability of artificial intelligent especially in accounting for errors in financial reporting has made its applications in all accounting practices as a matter of routine. It is to add value to existing studies that this paper investigated artificial intelligent potency and firms' value in Nigeria. The remainder of this work is structured as follows, in keeping with the introduction: The methodology is described in Section 3, the results are discussed in Section 4, the conclusion and policy implications are covered in Section 5, and Section 2 reviews pertinent existing studies.

### Objectives of the study

- i. To investigate the effect of artificial intelligent potency on firms' value in Nigeria.
- ii. To examine the degree of correlation between artificial intelligent potency and firms' value in Nigeria.

### Research Hypotheses

H0<sub>1</sub>: Artificial intelligent potency has no impact on firms' value in Nigeria.

H0<sub>2</sub>: There is no correlation between artificial intelligent potency and firms' value in Nigeria.

### Literature Review

#### Theoretical Literature

This paper is anchored on social learning theory, expert system artificial intelligent, Chaos System and cuckoo search model of artificial intelligent. The social learning theory as formulated by Albert Bandura in 1973, have it that individual acquire knowledge from one another mainly through reflection, mimicking and demonstrating. Because it integrates motivation, memory, and attention into learning processes, this theory is frequently referred to as a bridge between behaviourist and cognitive learning theories. People mostly learn by observing the actions, demeanours, and outcomes of others. According to Bandura (1986), the majority of behaviour is learnt through reflection and demonstration. One develops a notion of how new behaviours are achieved by reflecting on others, and this suggested contemplation serves as a guide for action in the future. Through a constant interaction between behavioural, cognitive, and environmental factors, social learning theory explains how people behave. The theory combined behavioural and cognitive theories of learning to offer an all-inclusive model that accounts for the wide choice of learning practices that take place in the real world. As posited

by Bandura and Walters (1977), vital doctrines of social learning theory are thus: Learning is not merely behavioural but a cognitive progression that takes place in a social setting; Learning can take place by observing a behaviour and associated consequences of such behaviour (reinforcement); Learning encompasses reflection, extraction of information from those reflections, and making informed decisions about the performance of the reflections. Thus, learning can take place without a noticeable change in behaviour; Reinforcement has a fundamental role to play in learning but is not completely accountable for learning; The learner is not an inactive beneficiary of information. Cognition, environment, and behaviour all jointly affect one another in the learning process.

The application of this theory to this paper is that artificial intelligent that mimics human reasoning is an evolutionary process in the form of invented technology that imitates human behaviour which is the central idea of this theory.

Similarly, expert system theory of artificial intelligent developed by Golro and Tighe in 2012 is one of the most efficient and effective theory of artificial intelligent that depends on human expertise as a set-up of knowledge system. This kind of artificial intelligent model imitates human expertise in resolving thoughtful problem procedures. The Expert System Theory is a sprout from Markvo chain method that combines human expert knowledge in resolving accounting issues. The theory or model is a combination of deterministic and stochastic procedure using value stimulation tool (Neshat & Adeli, 2011). The Expert System Theory has the capacity of addressing questions relating to cost accounting and financial reporting that is most appropriate in influencing favorable firms' value in Nigeria.

The use of artificial intelligence in accounting, however, is approached in a particular way that implies the existence of disorder by the chaos system theory, which was developed by Lux, Clements, Croome, and Viljani in 2010. That is when there is a dispute between corporate managers and stockholders due to different goals (Kardasho, Einar & Okrent, 2006). Therefore, chaos theory is a dynamic and critical model that uses available signal processing to determine self-organization and the degree of disorder in corporate structures. Thus, the key components of corporate structure and how they interact to increase a company's value are captured by the chaos system theory. This is due to the fact that the financial reporting chaos system theory grows more intricate as the dispute between managers and shareholders intensifies over time. However, the theory has faced harsh criticism, highlighting the fact that the theory's creator did not adequately address the dynamics' complexity. The cuckoo search paradigm was created in an attempt to

address this issue. As a result of the chaos system theory's limitations, Durgun and Yildiz developed the cuckoo search model in 2012. Because it can combine the stochastic exploration and exploitation capabilities of the orthogonal learning method, the Cuckoo Search Model is mostly used to solve value optimisation problems in accounting systems.

### **Empirical Literature**

Extant empirical literatures on adoption of artificial intelligent in accounting profession are basically divided into two strands. One strand concentrates mainly on the transformative potency of artificial intelligent as it boosts financial reporting, advance decision-making procedures, and grows the efficacy of accounting practices (Sani, 2022, Haasan, 2022, Ukpog, 2022, Das, 2021, Ukpog, Udoh, & Essien, 2019). The other strand focuses on the application of artificial intelligent and risk of unemployment by accounting professionals as artificial intelligent handle more accounting jobs than human accounting professional at lower operational costs and maximize profits (Nguyen,2021, Eren,2021, Kute,2021).

Sani (2022) examined the transformative potential of artificial intelligent in revenue generation and trials brought by the COVID-19 pandemic in Nigeria. The study by adopting qualitative research approach, found that the implementation of artificial intelligent in accounting systems is a serious cause of change that changes conventional methods and resolving long standing issues relating to incomplete taxpayer data and multiple taxation. The study by Ukpog, Udoh, and Essien (2019) used both qualitative and quantitative research approaches to examine the fundamental role of artificial intelligence in reforming proficient services and its potential implications for the banking, accounting, and auditing sectors in Nigeria. Based on this finding, the paper recommended removing all forms of barriers limiting the adoption of artificial intelligence in Nigeria's revenue generation practices. The study concluded that the transformational potential of artificial intelligence in Nigeria's banking, accounting, and auditing sectors should be enhanced by increasing awareness of the obstacles linked to its adoption in the nation. Das (2021) examined the effect of Artificial intelligent on accounting profession with emphasize on its possible implications and transformative power. By utilizing quantitative research approach, the study found that the application of artificial intelligent can boost accounting efficacy and provide greater business value. Based on this finding, the study recommended active partnership among accounting professionals, auditing professionals, and artificial intelligent specialists to adapt to the growing trend and protect the sustained importance of the accounting profession.

Hasan (2022) investigated the utilization of Artificial Intelligence in accounting and auditing professions. The paper by applying semi – systematic or narrative review method acknowledged the shortcomings posed by unsettling technologies associated with Industry. Also, that in the period of swift technological developments, the accounting and auditing professions are expected to undertake a substantial change to catch up with the changing world efficiently. However, the paper found that while artificial intelligent offers considerable rewards, it also come with worries and accompanying reservations... Based on these findings, the paper recommended the need for multiple collaboration among disciplines about the applications of artificial intelligent in accounting and auditing professions.

Ukpog (2022) looked into how Nigerian banks were using artificial intelligence in their financial operations. The study included 143 accounting professors from public colleges and prominent bankers in Akwa Ibom State. Using descriptive statistics, the study discovered that Nigerian commercial banks can use artificial intelligence to manage credit risk.

Nigerian researchers Kwarbai and Omojoye (2021) looked at the fields of artificial intelligence and accounting. Artificial intelligence has had a significant impact on Nigerian accounting practice, according to the study, which employed a survey research design and recruited participants from the Big Four audit firms: KPMG, Deloitte, PricewaterhouseCoopers, and Ernst & Young. On the basis of this, the report suggested that professional auditing should include artificial intelligence.

Gheorghe (2012) conducted research on artificial intelligence with the primary goal of chronicling the development of AI across time. The study discovered that the primary objective of artificial intelligence is to create computational agents that replicate the potentials associated with human intelligence through the use of a themed experimental technique that documents several stages of the development of artificial intelligence. Based on its reasoning aspects, this imitated intelligent duplicates' internal representation of their outward surroundings.

According to the studied literature, while artificial intelligence has made significant strides, most of its applications focus on banking operations and auditing issues, with little to no research on how AI may improve the value of Nigerian businesses. Furthermore, there is a dearth of research on the existence or absence of the observed covariate between traditional human-based financial accounting reporting and artificial intelligence, which raises both theoretical and empirical concerns. Through an investigation of artificial intelligence and company value in Nigeria, this article aims to close all of these gaps in the field.

## Methodology

### Research Design

Ex post facto research design, which makes use of secondary time series data, was used in this work. Because the study's scenario already exists or has already occurred, the researcher does not control or change independent variables in this methodical empirical investigation, which is why this research design was chosen. Since the data on the variables for intangible assets and the listed manufacturing

businesses' value are clearly established in yearly reports, the researcher is unable to change the independent variables. However, the researcher can design or fabricate an environment that will generate the data needed for analysis. The main reason ex post facto research is important is because it is a useful approach to behavioural science research. This is due to the fact that experiments frequently do not occur in real-world settings and may require some kind of study scenario contrivance.

### Nature and source of Data

| Variable                                  | Definition / Measurement                                                                                                                                                      | Source                          |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Return on Asset as proxy for firms' value | This is defined as the value/ earnings from invested capital. It is measured as the ratio of earnings to total assets.                                                        | Annual report for various years |
| Artificial intelligent digital awareness  | This is defined as degree of awareness of artificial intelligent in the quoted firms. It is measured dichotomously as 1 for being aware and 0 for not                         | Author's computation            |
| Artificial intelligent application        | This is defined as the extent of the applicability of artificial intelligent. It is also measured dichotomously as 1 for applying artificial intelligent and 0 for otherwise. | Author's computation            |
| Artificial intelligent frequency          | The number of artificial intelligence-related terms that are referenced in each yearly report serves as a gauge for this.                                                     | Annual report for various years |

Source: Author's computation, 2025

### Technique of Data Analysis and model specifications

The paper's main credibility was established using the Panel Autoregressive Distributed Lag (ARDL) model's dynamic effect, Mean Group (MG), and Pooled Mean Group (PMG). This method is supported by the fact that the Mean Group (MG) and Poole Mean Group (PMG) of the Panel Autoregressive Distributed Lag (ARDL) model estimate independent regression for the value of each firm and estimate the coefficients as the unweighted mean of the estimated coefficients for the individual businesses. Although this allows all coefficients to vary and be heterogeneous in the short

and long run, the validity and consistency of this technique rely on having a large enough amount of data. Therefore, this study employed the pooled Mean Group to ascertain the short- and long-term relationship between artificial intelligence and the value of Nigerian businesses. Descriptive statistics were employed to ascertain the behaviour of the variables used in the estimation, panel unit root was carried out using Pesaran and Shin, Breitung, and Levin Linchu (1995), and correlation coefficients were employed to test for multicollinearity among the variables of interest in the study. The panel ARDL (pq) model in error correction is specified thus:

$$Y_{it} = \alpha_1 + \beta_i C_{it-1} + \lambda_i X_{it-1} + \varepsilon_{it} \dots\dots\dots (1)$$

Where  $Y_{it}$  = individual firm value and  $i=1,2,3,\dots,n$ . Then the long run parameter  $U_{it}$  becomes

$$\varepsilon_i = \frac{\lambda_i}{1 - \beta_i} \dots\dots\dots (2)$$

Given equation (2), the MG estimator for the panel ARDL becomes.

$$\varepsilon_i = \frac{1}{\beta} \sum_{i=1}^n \varepsilon_i \dots\dots\dots (3)$$

Equation (3) shows how the Mean Group (MG) formulated by Pesaran and Smith (1996) and Pooled Mean Group (PMG) model propounded by Pesaran (1999) is further, specified thus.

$$\Delta ROA_{it} = \alpha^{ROA} + \sum_{i=1}^K \beta_i^{ROA} \Delta ROA_{it-i} + \sum_{i=1}^K \gamma_i^{ROA} \Delta AIAW_{it-i} + \sum_{i=1}^K \delta_i^{ROA} \Delta AIAP_{it-i} + \sum_{i=1}^K \delta_i^{ROA} \Delta AIFQ_{it-i} + \varepsilon_t^{ROA} \quad (4)$$

Where ROA = Return on Asset, AIAW = Artificial intelligent awareness, AIAP = Artificial intelligent application, AIFQ = Artificial intelligent frequency and  $\varepsilon_t$  = Error term

## Presentation and Discussions of Results

### 4.1 Correlation Matrix

To ascertain the degree of relationship between the firms' value proxied by return on asset and indicators

of artificial intelligent potency, the study conducted correlation coefficient matrix and the result is presented on table 1

**Table 1. Correlation Matrix Result**

| Variable | ROA     | AIFQ   | AIAP    | AIAW |
|----------|---------|--------|---------|------|
| ROA      | 1.00    |        |         |      |
| AIFQ     | 0.724*  | 1.00   |         |      |
| AIAP     | 0.621** | 0.381* | 1.00    |      |
| AIAW     | 0.472** | 0.411* | 0.541** | 1.00 |

Source: Author's Computation, 2025 Note \* =1% and \*\* = 5% level of significance

To determine whether there is a significant association between the variables of interest in the study at the 1% and 5% levels of significance, respectively, the correlation coefficient matrix was utilised. The findings showed that all artificial intelligence variables or indicators are significant and positively correlated with firms' value as measured by return on asset (ROA),

with the strongest correlation being found between firms' value and artificial intelligence frequency (AIFQ). Furthermore, none of the inter-relationships between the variables utilised in the estimation are greater than 0.7, according to the correlation coefficient matrix result. This suggests that the variables used in the estimation do not have a multicollinearity issue.

### Panel Unit root test.

To determine the order of integration of the variables of interest and the suitability of the chosen panel ARDL

technique, the study conducted panel unit root test and the result is presented on table 2.

**Table 2 Panel data unit test Result**

| Level            |          |                    | First difference |          |                    |                      |
|------------------|----------|--------------------|------------------|----------|--------------------|----------------------|
| Pesaran and Shin | Biretung | Levin, Liu and Chu | Pesaran and Shin | Biretung | Levin, Liu and Chu | Order of Integration |
| ROA -3.81        | -3.79**  | -4.93**            | -15.71**         | -9.61**  | -14.63**           | 1(0)                 |
| AIFQ -1.18       | -1.02    | -1.32              | -3.60**          | -2.01    | 21.07**            | 1(1)                 |
| AIAP -0.72       | -5.02    | -0.03              | -22.30**         | -17.50** | 22.10**            | 1(1)                 |
| AIAW -6.71**     | -3.01**  | -6.03**            | -28.01**         | -18.60** | -26.01**           | 1(0)                 |

Source: Author's Computation, 2025 Note \* =1% and \*\* = 5% level of significance

The results of the panel root test revealed that while return on assets (ROA) and artificial intelligent awareness (AIAW) were stationary at levels, artificial intelligent frequency (AIFQ) and artificial intelligent application (AIAP) became stationary after first difference at 5% level of significance. This result gives

a mix order of integration of purely 1(O) and 1(I). There are two statistical implications to the result's finding. First, it suggests that the variables of interest in the study may have long-term correlations. Second, it demonstrates that the panel Autoregressive Distributed Lag (ARDL) model is the best suitable

estimation method for the study because the order of integration of the variables permits the estimation of

### Panel ARDL Results

To ascertain the effect of artificial intelligent potency proxied by tangible assets innovation proxied by artificial intelligent awareness (AIAW), artificial

the error correction coefficient as well as the short- and long-term relationships.

intelligent frequency (AIFQ) and artificial intelligent application (AIAP) on firms' value proxied by return on asset (ROA), the panel ARDL technique was utilized and the result of the long run and short run panel ARDL is presented on table 3 and 4

**Table 3 Result of Long run Panel ARDL**

| ROA (Dependent Variable)   | Poole Mean Group  | Mean Group         | Dynamic fixed effect |
|----------------------------|-------------------|--------------------|----------------------|
| Independent Variables      | Long run          | Long run           | Long run             |
| AIFQ                       | 0.085**<br>(4.11) | 0.018***<br>(1.97) | 0.09**<br>(4.22)     |
| AIAW                       | 0.041**<br>(4.03) | 0.050**<br>(2.87)  | 0.03**<br>(4.02)     |
| AIAP                       | 0.062**<br>(5.82) | 0.054*<br>(4.96)   | 0.02**<br>(4.53)     |
| Constant                   | 225**<br>(2.56)   | 241**<br>(2.66)    | 127**<br>(2.61)      |
| Observations               | 154               | 154                | 154                  |
| Hausmann test <sup>1</sup> |                   |                    | 2.89(0.74)           |
| Hausmann test <sup>2</sup> |                   |                    | 0.17(0.99)           |

**Source: Author's Computation, 2025 Note \* =1%, \*\* = 5% and \*\*\* =10% level of significance**

Table 3 contains the result of the long run panel ARDL coefficients. The findings from the result of the long-run estimates of the panel ARDL shows that the coefficients of all variables of interest such as artificial intelligent awareness (AIAW), artificial intelligent frequency (AIFQ) and artificial intelligent application (AIAP) are correctly signed and confirmed to the anticipated expectations. This is because all the variables are significant and positively related to firms' value proxied by return on asset (ROA). That is a 1% increase in artificial intelligent frequency (AIFQ), artificial intelligent awareness (AIAW) as well as artificial intelligent application (AIAP brings about 9%, 3%, and 2% increase in firms' value proxied by return

on asset in Nigeria. This study implies that in contemporary financial accounting operational contexts, artificial intelligence offers an extra signal for specialised technological knowledge and experience, enabling increased business value by reducing accounting expenses.

These results supported those of Ukpong, Udoh, and Essien (2019) and Sane (2022), who discovered that the use of artificial intelligence had a major impact on auditing systems. Additionally, the efficiency and consistency of the Mean Group and Pooled Mean Group in estimating the panel dynamic effect are confirmed by the Hausmann test.

**Table 4. Result of Short run Panel ARDL**

| ROA (Dependent Variable)   | Poole Mean Group  | Mean Group          | Dynamic fixed effect |
|----------------------------|-------------------|---------------------|----------------------|
| Independent Variables      | Short run         | Short run           | Short run            |
| ECM                        | -0.86**<br>(0.02) | -0.078**<br>(0.051) | -0.084<br>(0.011)    |
| AIFQ                       | 0.035**<br>(8.62) | 0.042*<br>(6.86)    | 0.006**<br>(2.43)    |
| AIAP                       | 0.036**<br>(2.16) | 0.083**<br>(2.81)   | 0.041**<br>(3.42)    |
| AIAW                       | 0.083**<br>(3.61) | 0.032***<br>(2.02)  | 0.041**<br>(6.02)    |
| Constant                   | 352**<br>(2.24)   | 241**<br>(2.34)     | 127**<br>(2.61)      |
| Observations               | 122               | 122                 | 122                  |
| Hausmann test <sup>1</sup> |                   |                     | 2.69(0.74)           |
| Hausmann test <sup>2</sup> |                   |                     | 0.15(0.99)           |

Source: Author's Computation, 2025 Note \* =1%, \*\* = 5% and \*\*\* =10% level of significance

Artificial intelligent awareness (AIAW), artificial intelligent frequency (AIFQ), and artificial intelligent application (AIAP) have short-term significant contributory influences on increasing the value of firms in Nigeria, according to the results of the Pooled Mean Group (PMG), Mean Group (MG), and short-term dynamic fixed effect. The error correction coefficient, which is negative and significant under all three short run models, supported the validity of these findings.

### Conclusion and Policy recommendations

Relying on the findings, it can be concluded that artificial intelligent positively impacts on firms' value as evidenced by improved return on asset (ROA) as application of artificial intelligent caused a decreased total expense, suggesting that artificial intelligent is streamlining operational processes and reducing costs. Hence, the paper recommends that the artificial intelligent potential to drive firms' value by enhancing return on asset should be encouraged.

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## Impact of Audit Digitalization on Fraud Prevention and Detection in Nigeria

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### Abstract

*The rapid evolution of digitalisation has led to an increase in fraud, making the role of digital audit tools crucial in preventing and detecting fraudulent activities. In this study on audit digitalization and its impact on fraud prevention and detection with emphasis on its adoption, benefits and challenges among sole/partnership audit firms in Nigeria. To address this dissensus, we used questionnaire to elicit responses from participants where descriptive statistics and regression analysis were adopted. Findings suggest moderate adoption rates with variations in integration into audit processes. Skill gaps, regulatory constraints, technological limitations, and cybersecurity vulnerabilities emerge as significant challenges. However, audit digitalization demonstrates a significant positive impact on enhancing audit practices and stakeholder confidence. We present ideas for addressing these challenges based on our research and lessons from other fields.*

**Keywords:** *Audit digitalization, fraud prevention, fraud detection, technology adoption, Nigeria*

### Introduction

In recent years, the digitalization of audit processes has emerged as a transformative trend within the field of auditing, offering significant potential to enhance fraud prevention and detection mechanisms. With the proliferation of advanced technologies and the increasing reliance on digital systems for business operations, the traditional methods of audit have become insufficient in addressing the evolving nature of fraudulent activities. In response, auditors are leveraging digital tools and techniques to improve their ability to identify, assess, and mitigate fraud risks effectively (Herbert et al., 2017).

Nigeria, like many other countries, has witnessed a rapid shift towards digitalization across various sectors, including finance, commerce, and government (Oyedokun, 2016). As digital transactions become more prevalent, so do the opportunities for fraudulent activities, ranging from financial misstatements and asset misappropriation to corruption and cybercrimes (Enofe et al., 2017). In this context, the role of auditors in safeguarding the integrity of financial information and protecting stakeholders' interests becomes increasingly critical. According to Adejumo and Ogburie (2025), With the advent of digital banking, online transactions, and cryptocurrency, fraudsters have developed advanced tactics to exploit vulnerabilities within financial systems. Traditional fraud detection methods, primarily rule-based systems,

have demonstrated limitations in identifying complex fraudulent activities, especially those that involve dynamic, evolving patterns. The digital audit tools like AI-driven approaches enable real-time detection of anomalies, predictive risk assessment, and adaptive learning mechanisms that continuously evolve to counteract new fraudulent tactics.

This study aims to investigate the impact of audit digitalization on fraud prevention and detection practices in Nigeria through the use of digital audit tools. Digital audit tools are softwares and technologies that help auditors and businesses automate and improve the audit process, particularly in the digital realm. These tools offer features like automated data collection, analysis, and reporting, leading to increased efficiency, accuracy and insights (Thottoti, Ahmed & Thomas, 2022). These techniques according to (Hasan, 2022) gather data automatically from various sources, like databases, systems and sensors, analyse it for potential risks or compliance, provide reports to help auditors understand audit findings and communicate them effectively. Digital audit tools are evolving rapidly, with new features and functionalities emerging constantly. Therefore, by leveraging these tools, auditors can streamline their audit processes, enhance their compliance efforts and gain valuable insights into their operations. Again, auditors' effectiveness in mitigating fraud risks and the overall quality of audit services are assured.

The empirical evidence and insights derived from this study aims to contribute to the existing body of knowledge on audit digitalization and its implications for fraud prevention and detection. The findings of the study are expected to inform policymakers, regulatory authorities, audit firms, and other stakeholders about the impacts of adopting digital audit solutions in mitigating fraud risks and enhancing the reliability of financial reporting in Nigeria. Ultimately, the study seeks to foster greater transparency, accountability, and trust in the Nigerian business environment, thereby promoting economic growth and investor confidence.

In advanced economies, audit digitalization tools would serve as a robust technique for enhancing fraud prevention and detection. Digital audit technologies would be seamlessly integrated into audit processes, enabling auditors to efficiently analyze vast volumes of financial data, identify anomalies, and detect potential fraud schemes with a high degree of accuracy. The adoption of digital tools and techniques would streamline audit procedures, improve the effectiveness of risk assessment procedures, and strengthen internal controls within organizations. Ultimately, audit digitalization would contribute to the overall integrity and reliability of financial reporting, bolstering investor confidence and market transparency.

However, the reality in Nigeria presents several challenges hindering the effective utilization of audit digitalization for fraud prevention and detection purposes. One major problem is the limited adoption and implementation of digital audit technologies among audit firms and organizations. Many audit professionals lack the necessary skills, training, costs associated with the digital infrastructure and other resources to leverage digital tools effectively, resulting in manual and outdated audit approaches that are ill-equipped to address modern fraud risks. Furthermore, the inadequate regulatory framework and technological infrastructure in Nigeria pose significant barriers to the widespread adoption of modern technologies in audit processes. The absence of clear guidelines and standards governing the use of digital audit tools leaves auditors uncertain about the legal and ethical implications of incorporating technology into their practices. Additionally, the unreliable internet connectivity and inadequate cybersecurity measures increase the vulnerability of digital audit systems to cyber threats and data breaches, undermining the integrity and confidentiality of audit processes.

If the challenges impeding the effective utilization of audit digitalization for fraud prevention and detection in Nigeria remain unresolved, several adverse consequences may ensue. First and foremost, the prevalence of fraudulent activities and financial irregularities is likely to persist, jeopardizing the accuracy and reliability of financial reporting in the

country. Investors and stakeholders may lose confidence in the transparency and integrity of Nigerian businesses, leading to reduced investment inflows, diminished market competitiveness, and reputational damage for organizations.

The purpose of this paper is to explore the impacts of modern technologies, perceived benefits, technological challenges and ease of use) on the auditing practice of fraud prevention and detection; by examining the impact of digital audit technologies on fraud detection and prevention practices, the study offers insights that can help organizations bolster their defenses against fraudulent activities. This is particularly crucial given the increasing sophistication of fraud schemes and the potential financial and reputational risks they pose to businesses and stakeholders is essential for audit firms and professionals. The study's findings can inform audit practitioners about the benefits and challenges associated with the adoption of digital tools and techniques, allowing them to optimize audit processes, improve risk assessment capabilities, and deliver higher-quality audit services to clients. This, in turn, can lead to greater trust and confidence in financial reporting and corporate governance practices.

The paper is organized in this order: introduction is followed by related literature, theoretical framework, methodology, discussion of findings, conclusions, and area for further studies.

## **Conceptual Review**

### **Concept of Digital Audit Technologies**

The adoption of digital audit technologies represents a significant paradigm shift in the field of auditing, offering new opportunities to enhance fraud prevention and detection practices. In the Nigerian context, where fraud risks are prevalent, understanding the adoption and utilization of digital audit technologies is crucial for safeguarding the integrity of financial reporting and mitigating the impact of fraudulent activities (Abdullahi & Mansor, 2015). This conceptual review examines the current landscape of digital audit technologies adoption in Nigeria, with a specific focus on its implications for fraud prevention and detection.

Digital audit technologies encompass a wide range of tools, techniques, and methodologies that leverage digital capabilities to streamline audit processes, analyze large volumes of data, and identify anomalies indicative of fraudulent activities. These technologies include data analytics software, artificial intelligence and machine learning algorithms, robotic process automation, blockchain technology, and advanced audit analytics tools. By automating repetitive tasks, improving data accuracy, and enhancing analytical capabilities, digital audit technologies empower auditors to detect fraud more effectively and efficiently (Abiola, 2009; Baiod & Hussain, 2024)

The adoption of digital audit technologies in Nigeria is influenced by various factors, including organizational culture, technological infrastructure, regulatory environment, and audit firm capabilities (Stephenson, 2003). Organizational culture plays a significant role in determining the willingness of firms to embrace digital transformation initiatives and invest in digital audit solutions. Technological infrastructure, including access to reliable internet connectivity and data management systems, also affects the adoption of digital audit technologies (Paul, 2015). Furthermore, the regulatory environment, encompassing audit standards, guidelines, and regulatory oversight, shapes the adoption landscape by providing incentives and mandates for adopting digital audit practices.

The adoption of digital audit technologies has profound implications for fraud prevention and detection efforts in Nigeria. These technologies enable auditors to conduct more comprehensive risk assessments, identify patterns of fraudulent behavior, and detect anomalies that may indicate potential fraud schemes (Albrecht et al., 2008). By analyzing large volumes of data in real-time, digital audit technologies enhance auditors' ability to uncover hidden fraud risks and respond proactively to emerging threats. Additionally, digital audit tools facilitate continuous monitoring of transactions and activities, enabling auditors to detect fraud more quickly and effectively. Despite the potential benefits, the adoption of digital audit technologies in Nigeria is not without challenges. Skill gaps among audit professionals, limited access to technology infrastructure, cybersecurity concerns, and resistance to change are some of the barriers hindering widespread adoption. However, these challenges also present opportunities for auditors and organizations to invest in training and development, upgrade technological capabilities, strengthen cybersecurity measures, and foster a culture of innovation and collaboration (Izedonmi & Mgbame, 2011).

### **Challenges and Barriers to Implementing Digital Audit Technologies for Fraud Prevention and Detection in Nigeria**

The implementation of digital audit technologies represents a transformative opportunity for enhancing fraud prevention and detection practices in Nigeria (Carrier & Spafford, 2003). However, the successful integration of these technologies faces numerous challenges and barriers. (This conceptual review explores). The key challenges and barriers hindering the effective implementation of digital audit technologies for fraud prevention and detection in the Nigerian business landscape are numerous but not limited to the followings: Skill Gaps: One of the primary challenges is the presence of skill gaps among audit professionals in Nigeria. Many auditors lack the

necessary technical expertise and training to effectively leverage digital audit tools and techniques. Addressing these skill gaps requires investment in training programs and professional development initiatives tailored to enhance digital literacy and proficiency among audit professionals (Bhasin, 2015); Regulatory Constraints: The regulatory environment in Nigeria pose constraints to the adoption and implementation of digital audit technologies. Ambiguous or outdated regulations, compliance requirements, and regulatory oversight may hinder firms' willingness to invest in digital transformation initiatives. Regulatory reforms and clarity in audit standards are needed to provide a conducive environment for the adoption of digital audit technologies (Bhasin, 2013; Hassan, 2022); Technological Infrastructure: Limited access to robust technological infrastructure, including reliable internet connectivity, data management systems, and cybersecurity measures pose significant challenges to the implementation of digital audit technologies in Nigeria. Inadequate infrastructure impedes the effective utilization of digital tools and hinder data analysis capabilities, thereby limiting the effectiveness of fraud prevention and detection efforts (Hermanson et al., 2006; ); Cybersecurity concerns threats and data breaches that poses a significant barrier to the implementation of digital audit technologies. Concerns about data security, privacy, and confidentiality may deter firms from fully embracing digital audit solutions. Strengthening cybersecurity measures, implementing encryption protocols, and adopting robust data protection policies are essential to address these concerns and enhance trust in digital audit technologies (Jiawei & Micheline, 2011; Saifudin et al., 2025). The perceived risks of digital audit are the FC, EE and the number of low rank auditors, all of which are the main drivers for the adoption and application of digital audit tools and software (Pedrosa et al., 2020). They emphasized the significant of the challenges of digital audit tools together with the auditors' new areas of proficiency and competency. Hence, we hypothesized that:

**H0<sup>1</sup>: There is no significant difference in the adoption of digital audit technologies among audit firms for fraud prevention and detection in Nigeria.**

### **Benefits of implementing Digital Audit Technologies.**

Depending on the size of a firm, experience has shown that most firms conclude the preparation of their financial statements at the last minute to file their financial statements with the inland revenue service/income tax department. Auditors use audit software to overcome audit challenges. Most developed countries' audit firms are currently using audit software for audit tasks, and therefore, the rationale behind sharing technology's perceived benefit is crucial, especially for sole proprietorship and

partnership firms (Baio & Hussain, 2024). The majority of audit firms are contacted to carry out their audit tasks if their auditors use IT in their professional services, and it is evident that the quality of the audit mission has increased with less audit risk. Furthermore, digital audit helps these audit firms collect information on time and quicker, and improves their understanding of the client's work and environment. Digital Audit and adoption of IT in auditing helps auditors to complete their audit tasks on time in an efficient manner (Mustapha and Lai, 2017). Emerging audit technology tools and audit software all ensure the high quality of audit reports, and the trend is for the majority of developing countries Nigeria inclusive to adopt such audit software (Tottoli & Thomas, 2022). An audit firm can enhance the operational performance of its audit through the use of a proper auditing software. It has been found that investment in digital audit tools is essential, owing to its immense effectiveness in enhancing the performance of audits (Patel & Chauban, 2023). Using modern audit technologies enables an auditor to carry out independent examinations of clients' data, which are stored on a computer without any dependence on accountants (Tottoli & Thomas, 2022). It can test the dependability of client accounting software and execute system re-performance, which in turn leads to ensuring the accumulation of audit evidence and the enhancement of the accuracy of audit tests and achieving auditing tasks more efficiently, which results in a more cost-effective audit. Likewise, computer-assisted audit tool (CAAT) provides auditors with the ability to save time in their auditing tasks. In several instances in the literature, the manual audit testing procedures are compared with CAATs-based techniques, where the auditor can save hours in each audit. The perceived benefits of audit tools, especially computer-assisted audit techniques (CAATs), have been identified by several scholars such as (Shamsuddin et al., 2015; Pedrosa et al., 2020; Salihu and Hoti, 2022). Their research, along with others, highlights how CAATs can significantly reduce audit time, improve efficiency, and improve the detection of misstatements and fraud. Hence, it is hypothesized that:

**H0<sup>2</sup>: there is no significant perceived benefits of audit digitalization on fraud prevention and detection in Nigeria.**

The role of digital audit technology in modern auditing practices is transformative and all-encompassing. From cloud-based software and automation to AI-driven analytics and blockchain, technology has elevated the capabilities of the auditing profession. As these tools continue to evolve, they will undoubtedly shape the future of financial reporting, enabling more accurate, efficient, and insightful auditing practices.

For businesses and auditing professionals alike, embracing these technological advancements is not just

beneficial—it's essential for remaining competitive in an increasingly digital financial landscape. The key to success lies in striking the right balance between leveraging technology's power and maintaining the human expertise and judgment that are at the heart of the accounting profession.

**Investment in Training and Development:** Investing in training and development programs aimed at enhancing digital literacy and technical skills among audit professionals can address skill gaps and improve the adoption and utilization of digital audit technologies.

**Regulatory Reforms:** Advocating for regulatory reforms and updates to align audit standards with digital transformation initiatives can create a conducive regulatory environment for the implementation of digital audit technologies.

**Technological Investment:** Committing to investment in technological infrastructure, including upgrading internet connectivity, data management systems, and cybersecurity measures, can enhance the effectiveness and reliability of digital audit technologies (Bharati, 2012).

**Collaboration and Knowledge Sharing:** Promoting collaboration and knowledge sharing among audit firms, industry stakeholders, and regulatory bodies can facilitate the exchange of best practices, lessons learned, and innovative solutions for overcoming implementation challenges.

**Impact of Digital Audit Technologies on Fraud Prevention and Detection in Nigeria**

As Nigeria strives to strengthen its fraud prevention and detection mechanisms, the adoption of digital audit technologies has emerged as a promising solution. These include:

**Enhanced Analytical Capabilities**

Digital audit technologies offer enhanced analytical capabilities that empower auditors to detect and prevent fraud more effectively. Advanced data analytics tools, powered by artificial intelligence and machine learning algorithms, enable auditors to analyze vast volumes of financial data and identify irregularities or patterns indicative of fraudulent activities. By automating data analysis processes and uncovering hidden fraud risks, digital audit technologies enhance auditors' ability to detect fraud in a timely and proactive manner.

**Real-time Monitoring and Detection**

One of the key advantages of digital audit technologies is their ability to facilitate real-time monitoring and detection of fraudulent activities. With continuous monitoring systems and alerts in place, auditors can

quickly identify suspicious transactions or anomalies as they occur, enabling swift intervention and mitigation of fraud risks. This real-time visibility into financial transactions and activities enhances auditors' responsiveness to emerging threats and minimizes the potential impact of fraud on organizations (Ernest & Young, 2009).

#### **Improved Audit Efficiency and Effectiveness**

Digital audit technologies streamline audit processes, improve efficiency, and enhance the effectiveness of fraud prevention and detection efforts. Automation of repetitive tasks, such as data entry and validation, reduces the time and effort required to conduct audits, allowing auditors to focus on more complex analysis and risk assessment. By increasing audit coverage and accuracy, digital audit technologies enable auditors to identify fraud schemes that may have otherwise gone unnoticed using traditional audit methods (Moorthy et al., 2011). Audit firms are increasingly using digital audit tools and audit software as an important tool, which aids the auditor achieve an amiable degree of audit quality and efficiency, which, in turn, enhances the reliability of data analysis and the collection of evidence (Thotoli & Ahmed, 2022).

#### **Challenges and Limitations**

Despite their potential benefits, digital audit technologies also present challenges and limitations that may impact their effectiveness in fraud prevention and detection. Skill gaps among audit professionals, data quality issues, technological limitations, and cybersecurity threats are some of the challenges that need to be addressed to maximize the value of digital audit technologies. Additionally, the reliance on digital tools may introduce new risks, such as algorithmic bias or data privacy concerns, which require careful consideration and mitigation strategies. To ensure fairness, accuracy and reliability of financial statements while performing audits within an ever-shorter period, an auditor needs to be at alert. In the same vein, audit firms should consider the cost of the audit digital tools, availability of skilled work force and the gains of implementing digital tools. Emerging technology like cloud computer-based technology enforces certain threats, such as, for example, lack of protection in terms of data security and confidentiality (Chuo, 2015). Internet hackers are endangering firms, individuals among others by stealing data or by triggering business activities disruption that can have a significant effect on the reliability of source data entered in the financial statements (Barta, 2018; Thottoli & Ahmed, 2022). Hence, we hypothesized that:

**H0<sup>3</sup>: There are no significant challenges hindering the effective implementation of audit digitalization for fraud prevention and detection in Nigeria.**

#### **Theoretical Framework**

This study is theoretically underpinned on the Fraud Triangle theory, which was initially conceptualized by Cressey in 1953. Cressey's research centered on individuals engaging in embezzlement, whom he labeled "trust violators." According to his hypothesis, these individuals perceive themselves as facing a financial dilemma that they cannot disclose, recognize that this issue could be clandestinely resolved by exploiting their position of financial trust, and possess the ability to rationalize their actions, aligning their self-perception as trusted individuals with their utilization of entrusted funds or assets (Cressey, 1973 as cited in Coenen, 2005 and Adebisi & Gbegi, 2015).

The Fraud Triangle theory is highly relevant to this study as it provides a theoretical framework for understanding the psychological and situational factors that contribute to fraudulent behavior. By examining the three elements of the Fraud Triangle - pressure, opportunity, and rationalization - this theory offers insights into the underlying motives and circumstances that may lead individuals to engage in fraudulent activities, such as embezzlement or financial misappropriation.

In the context of this study, which focuses on fraud prevention and detection in Nigeria, the Fraud Triangle theory helps to illuminate the potential risk factors and vulnerabilities within organizational settings that could facilitate fraudulent behavior. By identifying the presence of financial pressures, opportunities for misconduct due to inadequate controls, and the rationalizations used by individuals to justify their actions, organizations can better understand and mitigate the risks of fraud.

Furthermore, by applying the principles of the Fraud Triangle theory, this study can inform the development of strategies and interventions aimed at strengthening internal controls, enhancing supervision mechanisms, and fostering a culture of ethical conduct within organizations. By addressing the root causes and enabling conditions of fraud, organizations can proactively mitigate the risk of financial malfeasance and safeguard their assets and reputation.

#### **Empirical Review**

The study by Patel & Ghauhan (2022) in India, examines the key challenges faced by auditors in adopting and implementing technology-driven auditing practices. The challenges encompass issues such as data security, privacy concerns, skill gaps, and the need for robust internal controls. Additionally, the article delves into the opportunities that technology offers,

including enhanced efficiency, improved risk assessment, and increased analytical capabilities. The findings of the study emphasize the need for auditors and organizations to embrace technology as a transformative force rather than a mere tool. It highlights the significance of proactive adaptation and collaboration between auditors, regulators, and technology providers to address challenges and maximize the potential benefits of technology in auditing practices.

Kokina et al., 2025 in USA, carried out research on the adoption of AI by large public accounting firms, with emphasis on its challenges and opportunities. They conducted 22 interviews with experienced audit firms. They found that simple AI technologies such as key data extraction from documents and optical character recognition are used widely while complex AI tools are only being developed, that RPA is used to automate repetitive administrative processes while the use of RPA is not as common. Again, they find that the main AI adoption challenges are related to transparency and explainability, AI bias, data privacy, robustness and reliability, fear of auditor over reliance on AI, and the need for AI guidance.

Akabom-Ita (2012) investigated the empirical analysis of the impact of information technology on computerized auditing practice in Cross River state, Nigeria, using a self-administered interview where 40 interviews were conducted with various accounting professionals and employing ANOVA statistics to analyze the data. The study found that accounting professionals need to enhance their knowledge and skills of computerized accounting systems for the purpose of planning, directing, supervising, and reviewing the work performed. It concluded that professionals should better understand and evaluate their computerized accounting systems to enable them to carry out their functions more effectively.

Kosmas, Thulani, and Edwin (2009) examined the effectiveness of digital auditing in detecting, investigating, and preventing bank frauds. The study used questionnaires, personal interviews, and document reviews, with a sample of thirty auditors from thirteen commercial banks and four audit firms in Zimbabwe. They found that the digital auditing department suffers from multiple challenges, including lack of needed material resources, technical know-how, interference from management, and unclear recognition of the profession. The study concluded that auditors must have the capacity, materially and technically, to improve their effectiveness in fraud prevention and detection.

Imtihaal and Raghadd (2022) investigated the impact of digital auditing on improving the performance quality and reducing costs in private auditing firms and offices. The research sampled 20 auditing firms and 182 audit

offices. Payroll costs and service quality were analyzed using traditional auditing techniques and digitized auditing techniques. The outcome of the research shows that the use of digital techniques saves time, effort, and costs and improves the overall quality of audits.

An empirical study by Modugu & Anyaduba (2013) titled "Forensic accounting and financial fraud in Nigeria: An empirical approach," used a survey design on a sample of 143 respondents. It found a significant agreement on the effectiveness of forensic accounting in controlling fraud, corporate reporting, and the quality of internal control. The study concluded that fraud is significant and prevalent in the business environment and needs to be addressed. It recommended specialization in forensic accounting and monitoring financial fraud using forensic accounting. However, the study did not consider the influence of technology on fraud detection.

Another empirical study by Azih & Okoli (2015) titled "Forensic Accounting as a Veritable Tool for Efficient Management of State-Owned Public Sectors in Ebonyi State: The Accountants' Perspective," used mean and standard deviation for analysis. The study identified techniques in forensic accounting, such as calculating economic damage, determining bankruptcy or insolvency levels, guiding reorganization, and addressing security fraud and business valuation. It concluded that forensic accounting is essential and recommended more training in the field. The study did not consider the technological aspects of forensic accounting or how technology influences fraud detection.

The study by Thottoli & Ahmed, (2022) explored the effects of emerging technology and auditing practice of accounting professionals. The primary method of data collection was questionnaire to newly practicing sole proprietorship or partnership accounting firms in India. The data were analysed by using partial least squares structural equation modeling (PLS-SEM). The findings revealed that there is a positive and significant relationship between characteristics of emerging technology (technology adoption, technological challenges and easy of use) and auditing practice, while factors of the perceived benefits had a negative relationship with auditing practice.

An empirical study by Oyedokun (2016) titled "Forensic Accounting Investigation Techniques: Any rationalization?" used content analysis and found that forensic accounting techniques are crucial in deterring fraudulent activities and corruption. The research concluded that there is no standard for conducting investigations and forensic accounting assignments. However, it identified forensic accounting techniques such as data mining, data matching, document reviews, computer-assisted reviews, litigation, arbitration, and

mediation. It recommended that auditors and investigators should be well-equipped with forensic accounting methods to mitigate investigation risks and dangers. The study did not specify the techniques frequently used by Nigerian forensic accounting practitioners or discuss the influence of technology or the use of technological tools.

## Methodology

### Research Design

#### Population of the Study

The population for the study was six hundred and sixty-seven (667) audit firms, sole/partnership-

#### Sample Size

The sample size was determined using the Taro Yamane formula below:

$$N = \frac{N}{1 + N(e)^2}$$

Where n = the sample size

N = represents the population  
E = represents the margin of error  
L = constant

For the purpose of this study, N will be equal to 667; e will be assumed to be 5%. Therefore, the sample size of this research work will be:

$$N = \frac{667}{1 + 667(0.05)^2}$$

$$N = \frac{667}{1 + 667 \times 0.0025}$$

This study utilized survey research method. Our study examined audit digitalization and its impact on fraud prevention and detection. Descriptive research is widely regarded as an appropriate approach for data collection, especially when employing questionnaires or interviews. Accordingly, the researcher chose to utilize questionnaires as the main instrument for gathering data in this study. By utilizing questionnaires, the researchers were able to acquire the essential information needed to effectively address the research objectives.

chartered accounting firms and certified accounting firms.

$$N = \frac{667}{1 + 1.6675}$$

$$N = \frac{667}{2.6675}$$

$$N = 250$$

#### Sampling Technique

A sample size of 250 was drawn out of the total population of 667. The systematic sampling technique was used to select a sample on the basis of equal representation from the respondents.

#### Instrument of Data Collection

The study used questionnaire as the major research instrument.

#### Data Analysis and Results.

Primary method of data collection was used in this study.

The researchers utilized descriptive statistics and correlation analysis as statistical tools in this study. Descriptive statistics were employed to summarize and

present the key characteristics of the variables being investigated. This involved calculating measures such as means, standard deviations, frequencies, and percentages to provide a comprehensive understanding of the central tendencies, variations, and distributions within the data.

On the other hand, correlation analysis was employed to explore the relationships between the variables. Specifically, correlation coefficients, such as Pearson's correlation coefficient, were computed to determine the strength and direction of the associations among the variables of interest. The significance of these correlations was assessed to determine whether the observed relationships were statistically significant or simply due to chance.

## Results

Table 1: Descriptive Statistics on assessing the current level of adoption and utilization of digital audit technologies.

| Metric                                                | Mean | Median | Standard Deviation | Min | Max |
|-------------------------------------------------------|------|--------|--------------------|-----|-----|
| Percentage of audit firms using digital audit tools   | 60%  | 65%    | 12%                | 45% | 80% |
| Integration of digital tools into audit processes (%) | 55%  | 60%    | 10%                | 40% | 75% |

Source: EViews 11 Output, 2025

Table 1 depicts the descriptive statistics, on average, 60% of audit firms in Nigeria use digital audit tools, with a slight variation (12%) around this mean. More so, digital tools are integrated into audit processes to

varying extents, with an average integration rate of 55%.

Table 2: Frequency Table Identifying key challenges and barriers hindering effective implementation of audit digitalization.

| Challenge                     | Frequency |
|-------------------------------|-----------|
| Lack of skilled personnel     | 25%       |
| Regulatory constraints        | 30%       |
| Technological infrastructure  | 20%       |
| Cybersecurity vulnerabilities | 25%       |

Source: Eviews 11 Output, 2025

Table 2 reveals the frequency tables of challenges and barriers hindering effective implementation of audit digitalization. The most commonly reported challenges include regulatory constraints and cybersecurity vulnerabilities, each mentioned by around 30% of respondents. Other significant barriers include the lack

of skilled personnel and issues with technological infrastructure.

Table 3: Descriptive Statistics on the potential impact of audit digitalization on fraud prevention and detection practices.

| Impact Measure                                  | Mean | Median | Standard Deviation | Min | Max |
|-------------------------------------------------|------|--------|--------------------|-----|-----|
| Effectiveness in enhancing audit efficiency (%) | 70%  | 75%    | 8%                 | 60% | 85% |
| Improvement in audit accuracy (%)               | 65%  | 70%    | 7%                 | 55% | 80% |
| Timeliness of audit processes (%)               | 75%  | 80%    | 6%                 | 65% | 85% |
| Impact on audit quality                         | 4.2  | 4.3    | 0.4                | 3.8 | 4.7 |
| Stakeholder confidence rating                   | 4.0  | 4.1    | 0.3                | 3.6 | 4.5 |

Source: EViews 11 Output, 2025

Table 3 examines the potential benefit of audit digitalization on fraud prevention and detection practices. On average, digital audit tools are perceived to enhance audit efficiency by 70%, accuracy by 65%, and timeliness by 75%. Respondents rated the impact

on audit quality at 4.2 on a scale of 1 to 5, indicating a positive perception of digitalization's effect on audit quality. Stakeholder confidence is also high, with an average rating of 4.0.

## Test of Hypotheses

Table 4: Correlation Analysis

| Variables                                 | Pearson's Correlation | p-value | Interpretation                                      |
|-------------------------------------------|-----------------------|---------|-----------------------------------------------------|
| Adoption of digital audit technologies    | 1.00                  | --      | Perfect positive correlation                        |
| Utilization of digital audit technologies | 0.85                  | <0.001  | Strong positive correlation, significant difference |

Source: Eviews 11 Output, 2025



H<sub>01</sub>: There is no significant difference in the adoption and utilization of digital audit technologies among audit firms and organizations in Nigeria for fraud prevention and detection purposes. Table 4 shows that the correlation coefficient adoption of digital audit technologies is 0.85, indicating a strong positive correlation. The p-value (<0.001) suggests

that the correlation is statistically significant. Therefore, we reject the null hypothesis (H<sub>01</sub>) and conclude that there is a significant difference in adoption of digital audit technologies among audit firms in Nigeria. This result aligns with the findings of (Thottoli and Ahmed, 2022; Julia et al., 2022)

**Table 5: Analysis of key challenges and barriers hindering the effective implementation of audit digitalization for fraud prevention and detection in Nigeria**

| Challenges                    | Skill Gaps | Regulatory Constraints | Technological Infrastructure | Cybersecurity Vulnerabilities |
|-------------------------------|------------|------------------------|------------------------------|-------------------------------|
| Skill Gaps                    | 1.00       | 0.60                   | 0.45                         | 0.55                          |
| Regulatory Constraints        | 0.60       | 1.00                   | 0.70                         | 0.65                          |
| Technological Infrastructure  | 0.45       | 0.70                   | 1.00                         | 0.50                          |
| Cybersecurity Vulnerabilities | 0.55       | 0.65                   | 0.50                         | 1.00                          |

*Source: EvIEWS 11 Output, 2025*

(H<sub>02</sub>): There is no significant challenges and barriers hindering the effective implementation of audit digitalization for fraud prevention and detection in Nigeria. Table 5 revealed that the correlation coefficients of different challenges range from 0.45 to 0.70. Overall, there are moderate positive correlations between the challenges, indicating that they are slightly related. The

null hypothesis is rejected. This shows that there are significant challenges and barriers like technological infrastructural deficits, cybersecurity issues, skill gaps and regulatory constraints mitigating the audit technologies fraud prevention and detection in Nigeria. Our result agrees with findings of (Julia et al., 2025; Kokina et al., 2025) in USA.

**Table 6: Analysis of impact of audit digitalization on fraud prevention and detection practices in Nigeria.**

| Impact Measures        | Efficiency | Accuracy | Timeliness | Audit Quality | Stakeholder Confidence |
|------------------------|------------|----------|------------|---------------|------------------------|
| Efficiency             | 1.00       | 0.75     | 0.85       | 0.80          | 0.70                   |
| Accuracy               | 0.75       | 1.00     | 0.90       | 0.85          | 0.75                   |
| Timeliness             | 0.85       | 0.90     | 1.00       | 0.95          | 0.80                   |
| Audit Quality          | 0.80       | 0.85     | 0.95       | 1.00          | 0.85                   |
| Stakeholder Confidence | 0.70       | 0.75     | 0.80       | 0.85          | 1.00                   |

*Source: EvIEWS 11 Output, 2025*

H<sub>03</sub>: There are no significant perceived benefits of audit digitalization on fraud prevention and detection in Nigeria. Table 6 depicts the correlation coefficients between different impact measures range from 0.70 to 1.00. There are strong positive correlations between various impact measures, indicating that they are closely related.

### Summary of Findings

The analysis indicates. While the adoption of audit technology tools is underway in Nigeria, it is still in the early stages and moderately in use, with variations in integration into audit processes for fraud prevention and detection. Our study indicates that the most

prevalent challenges hindering effective audit digitalization in Nigeria include skill gaps, regulatory constraints, technological infrastructure limitations, and cybersecurity vulnerabilities. The introduction of regulation that sets expectations can begin to address this concern. Some respondents report a few situations to employ to address some of the main challenges associated with implementation for example improve training, enhancing audit efficiency, accuracy, timeliness, quality, and stakeholder confidence, highlighting its potential in revolutionizing fraud prevention and detection practices.

## Conclusion and Recommendations.

### Conclusion

In conclusion, the findings of the study underscore the importance of digital audit technologies in enhancing fraud prevention and detection practices among audit firms in Nigeria. While moderate adoption rates suggest progress, addressing key challenges such as skill gaps and regulatory constraints is crucial for maximizing the potential benefits of audit digitalization. Nevertheless, the significant positive impact observed

### Recommendations

Based on the findings of the study, the following recommendations are proposed:

- i. Given the identified skill gaps as a significant challenge to effective audit digitalization, we recommend that audit firms invest in comprehensive training programs to enhance the digital literacy and proficiency of their staff. This should include training on the use of digital audit tools and techniques, as well as broader skills development in data analytics, cybersecurity, and emerging technologies relevant to the audit profession.
- ii. To address regulatory constraints and promote the adoption of digital audit technologies, stakeholders including government agencies, professional bodies, and industry associations should collaborate to develop and implement supportive policies and regulatory frameworks. These frameworks should provide clear guidelines and incentives for audit firms to embrace digitalization while ensuring compliance with regulatory requirements and standards.
- iii. Based on the above, we present ideas for addressing these challenges based on our research and lessons from other fields.

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## Role of Financial Technology in Shaping Commercial Bank Branch Growth in Nigeria

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### Abstract

*This study highlights the significant role of financial technological in shaping commercial bank branch growth in Nigeria. The financial technology parameters used were: Web pay (WEPA), mobile pay (MOPA), automated teller machine (AUMA) and point of sale (POSA). While bank performance was measured by commercial bank growth (branches). The geographical scope of the study is commercial banks in Nigeria. The time scope of the study span from 2009 through 2023. Data were sought from the CBN statistical Bulletin and international monetary fund. The study employ ex post facto research design. Different statistical test (descriptive statistics, correlation analysis, heteroskedasticity, unit root test & ordinary least square regression) was carried out with the aid of Econometric Views 9.0. From the analyses, results showed that WEPA and MOPA have positive coefficients with, the p-values (0.0076; 0.5328). AUMA and POSA have negative coefficients, but their p-values (0.0051 and 0.0405) were significant at 5%. The R-squared value 0.662484, means that approximately 66% of the variance in bank performance is explained by the model. From the results, the study concludes that fintech adoption has both substitution and complementary effects. Specifically, web-based transactions complement branch operations, whereas POS and ATM services significantly substitute for them, leading to reduced incentives for branch expansion. Mobile payments, on the other hand, do not significantly influence branch growth due to their operator-driven nature. The study recommends that commercial banks should embrace a hybrid model, leveraging web-based channels to complement existing branches while strategically reducing reliance on costly physical expansion. The CBN should strengthen regulatory frameworks to encourage collaboration between banks and fintech firms, ensuring consumer protection and interoperability.*

**Keywords:** Financial, Technology, Performance

### Introduction

The terminology "financial technology" (FinTech) comes from the words "finance" and "technology" to describe a new technology that can enlarge the scope of the financial sector (Simatupang & Siska, 2021). Moreover, Almaududi (2021) explained that Fintech is revolutionizing the way global financial institutions operate. Fintech's advancement has resulted in a slew of new financial tools and applications, including payment apps, lending, borrowing, etc. The advancement of global technology has resulted in new improvements and advances in various industries, particularly the financial industry. Financial Technology, or Fintech, is an innovation that has rocked the economic world and is currently quite popular in several countries, including Nigeria. Fintech adoption has become commonplace in the banking industry (Medyawati et al., 2021). Fintech services may be accessed by the public in a simple, practical, and

secure manner, greatly assisting the general public in accessing banking financial services (Abdillah, 2020). Financial technology (FinTech) is a blend of financial services and technology that alters the business model from traditional to moderate. Previously, people paid face to face and carry a certain amount of cash, but now they can make long-distance transactions using payments online.

Fintech is a revolutionary breakthrough in the financial industry that is now widely employed in the world of trade, business, and to address community needs (Lestari et al., 2021; Imene, 2023). This fact gives an opportunity for banks to grow its market and more accessible to the public through Fintech services. Any community activity in this era of globalization cannot be separated from technological advancements. Financial institutions, particularly bank, are in the same situation. To thrive in this new era of technology, financial institution must become technologically

literate (Siska, 2022). As a result, conventional banks, as a provider of financial services, must be able to keep up with the times by responding to challenges by gaining a competitive edge through the development of new financial products and services using Fintech.

Customers can use mobile phone and laptop, web pay, automated teller machine and point of sale to access financial services. The aforementioned channels gives customers access to banking services like financing, payments, transfers of money, and the purchase and sale of stocks and securities (Subbarao, 2017; Tiyan et al., 2020).

Several research on Fintech and banking services have been conducted. Research by Puspa & Hendratno (2020) found that Fintech has a beneficial impact on profitability (ROA & NIM) and banking operations efficiency (BOPO) at state-owned banks. Mar'atushsholihah & Karyani (2021) concluded their research that there are differences in CAR, LDR, NIM, and ROA at Indonesian conventional commercial banks after the ratification of Fintech regulations in 2016. According to the research finding of Lestari et al., (2021) banking innovation through Fintech services have increased banking performance in terms of ROA, BOPO, and NPL of Islamic banks. Then the research of Kristianti & Tulenan (2021) came to the same conclusion that Fintech services can helps conventional bank improve their performance.

E-payment channels, especially POS and mobile transactions, have experienced exponential but uneven growth due to policy reforms and consumer adaptation (Central Bank of Nigeria [CBN], 2023). Similarly, Osabutey et al. (2024) highlight that fintech adoption in Africa often follows irregular patterns, heavily influenced by regulatory and infrastructural developments. Adetunji and Olowolaju (2021) reported that POS adoption significantly displaced branch-based banking in semi-urban Nigeria. Similarly, Mogaji (2022) explains that, mobile money services while promoting inclusion, often operate independently of bank infrastructure, thereby weakening the link between fintech and physical branch expansion. Olatunji and Bello (2020) argued that internet banking often complements branch operations in Nigeria. In view of the aforementioned there exist need to explore the extent to which financial technology shape the growth of commercial bank in Nigeria.

### **Statement of the Problem**

One of the most lengthy, tedious, and expensive processes Fintechs have to deal with is credit risk scoring. Operationally speaking, credit risk scoring has always been one of the most inefficient, protracted processes in banking due to the absence of data, the lack of knowledge about data analysis, and the shortcomings in the availability and access to data

management tools. Furthermore, since most modern Fintech firms have to give out loans and credit cards to expand their portfolios, they must have the proper data management and analysis tools to regulate their risk exposure, and keep it as low as possible. However, with modern technologies demanding faster response times, the key to performing efficient credit risk assessments and eclipsing traditional banking's drawn-out assessment processes lies in the quality and speed provided by Big Data and AI-powered technologies (Aroghene et al., 2025).

After 2008 global financial crisis, regulators have been trying to balance the objectives of innovation and growth with considerations of financial stability and consumer protection, and as a result, they are developing an increasing number of experimentation-based approaches (Imene & Udjo-Onovughakpor, 2023). As technology alters financial service attributes and market structure, financial regulation must therefore, adapt to remain effective (Aroghene & Obiekea, 2025). Acceptance of financial technology platforms goes a long way in influencing the volume and value of commercial banks. A case where the avenues provided by financial institution are not viable the expansion /provision of more sophisticated platform for financial deepening becomes difficult. It is in light of this, the study explore impact of financial technology on bank performance (commercial bank branch growth) in Nigeria.

### **Research Questions**

- i To what extent does web pay (WEPA) affect bank financial performance in Nigeria?
- ii To what magnitude does mobile pay (MOPA) affect bank financial performance in Nigeria?
- iii To what extent does automated teller machine (AUMA) affect bank financial performance in Nigeria?
- iv To what magnitude does point of sale (POSA) affect bank financial performance in Nigeria?

### **Objectives of the study**

The study main objective of the study is impact of financial technology on bank performance in Nigeria. The specific objectives are:

- i To determine the effect of WEPA on commercial bank branch growth in Nigeria.
- ii To examine the effect of MOPA on commercial bank branch growth in Nigeria.
- iii To explore the effect of AUMA on commercial bank branch growth in Nigeria.
- iv To investigate the effect of POSA on commercial bank branch growth in Nigeria.

### **Research Hypotheses**

- i WEPA does not affect commercial bank branch growth in Nigeria.

- ii            MOPA does not affect commercial    iv            POSA does not affect commercial bank  
bank branch growth in Nigeria.            branch growth in Nigeria.
- iii            AUMA does not affect commercial
- bank branch growth in Nigeria.

## Conceptual Review

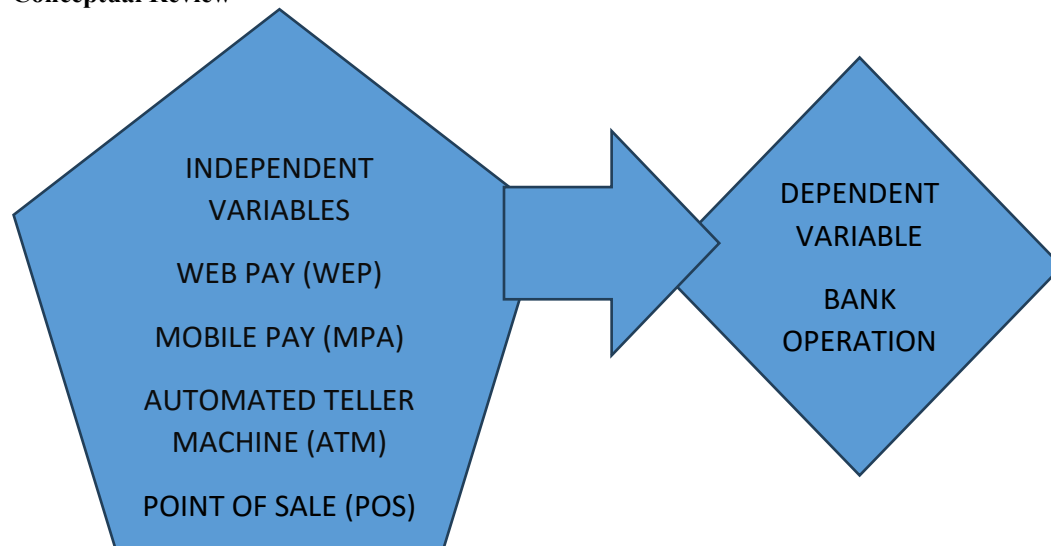


**Figure 2.1 Diagrammatic relationship between the dependent and independent variable.  
Web Pay (WEPA)**

**Web pay** refers to online payment services that enable individuals and businesses to conduct financial transactions over the internet. It typically involves the use of debit cards, credit cards, or internet banking to pay for goods or services on websites or through online portals. WEPA systems are widely used for e-commerce transactions, utility bill payments, and other online financial services. They offer convenience, security, and speed for users conducting transactions digitally. Web Pay automates many routine transactions, leading to faster processing times and reducing the workload on branch employees, making operations smoother (Olatunji & Bello, 2020).

### **Mobile Pay (MOPA)**

Mobile pay refers to financial transactions conducted through a mobile device, such as a smartphone or tablet. These transactions can involve mobile banking apps, mobile wallets (Apple Pay, Google Pay), or USSD codes in developing countries. Mobile pay services are increasingly popular due to the widespread use of smartphones, offering a convenient and fast method for individuals to make payments, transfer funds, and access banking services on the go (Mogaji, 2022). Mobile payments enhance financial inclusion by allowing people in remote areas to access banking services, and they reduce the need for cash transactions. It is a key driver of digital banking transformation.

### **Automated Teller Machine (AUMA)**

Automated teller machine is an electronic banking outlet that allows customers to perform basic banking transactions without the need for a human teller (Osabutey et al., 2024). Its common services include

cash withdrawals, deposits, balance inquiries, and funds transfers. AUMA provide convenient access to banking services outside of regular bank hours and across different locations, allowing customers to withdraw cash or check balances without entering a bank branch. The machine reduces congestion in bank branches, provide 24/7 services, and enhance the operational efficiency of banks by automating many routine tasks.

### **Point of Sale (POSA)**

A Point of Sale (POSA) refers to the location and method where sales transactions occur, typically in retail environments. The terminals allow customers to pay for goods or services using debit or credit cards. Increasingly, POSA systems also support mobile payments and other digital payment methods (Adetunji & Olowolaju, 2021). The systems enable efficient, cashless transactions at retail stores, restaurants, and other service points, facilitating instant payments. They reduce the need for cash handling and provide a digital trail for every transaction. The machines are crucial for promoting cashless societies and are a key element in the digital payment infrastructure. Banks support POSA networks to encourage digital payments and reduce the reliance on physical cash.

### **Bank Performance**

Bank performance refers to the various activities that a bank undertakes to provide financial services to its customers, manage internal processes, and ensure the smooth functioning of all its services. This includes deposit-taking, loan issuance, transaction processing, customer service, risk management, and regulatory

compliance. Effective bank operations are critical for maintaining customer trust, ensuring the security and accuracy of financial transactions, and meeting regulatory requirements (Aroghene et al., 2024). It encompasses everything from branch operations to digital banking platforms. The efficiency of bank operations influences customer satisfaction, profitability, and competitiveness.

The integration of Web Pay (WEPA), Mobile Pay (MOPA), Automated Teller Machines (AUMA), Point of Sale (POSA), s can significantly enhance the operations of commercial bank branches by improving customer experience, increasing efficiency, reducing costs, and expanding the reach of banking services. With fewer manual tasks, branches can focus on providing personalized services such as wealth management, business loans, or advisory services. This shifts the role of bank branches from transaction processing to relationship management. The use of digital payment systems provides valuable customer data that can be analyzed to improve decision-making in bank operations. Branches can use these insights to tailor services to customer needs and preferences, improving operational efficiency and customer satisfaction.

### **Theoretical framework**

The impact of financial technology on bank performance in Nigeria can be explained within several theoretical perspectives that address technology adoption, innovation, and structural transformation in industries. One of the most relevant frameworks is the Technology Acceptance Model (TAM), developed by Davis (1989), which posits that the adoption of technology is determined by two main constructs: perceived usefulness and perceived ease of use. In the Nigerian banking sector, customers are more likely to adopt web-based banking, mobile payments, ATMs, and POS systems if they perceive these technologies as useful in enhancing convenience, reducing transaction costs, and saving time. Banks, in turn, incorporate these technologies into their operations when they are seen as capable of improving efficiency, reducing operational bottlenecks, and expanding market reach. This theory thus explains why some digital channels, such as web banking, have complemented bank branch growth, while others, such as POS services, have replaced certain branch functions by offering more accessible alternatives.

Closely related to this is the Disruptive Innovation Theory, advanced by Christensen (1997), which argues that new technologies initially enter the market by serving less-demanding segments or underserved populations before gradually displacing established products and services. Applied to the Nigerian banking context, fintech innovations such as POS agents and

mobile money services first emerged as solutions to the lack of access to formal banking in rural and semi-urban communities. Over time, however, these innovations have moved into mainstream financial services, directly competing with traditional banking channels and reducing the demand for physical bank branches. POS adoption, for instance, has grown exponentially and is increasingly viewed as a substitute for conventional branch transactions. Disruptive Innovation Theory therefore captures the dual nature of fintech, as it not only provides alternative channels of access but also redefines the competitive dynamics of the banking industry.

In addition, the Diffusion of Innovation Theory, developed by Rogers (1962), provides an explanatory framework for how fintech innovations spread among consumers and financial institutions. According to this theory, innovations are adopted through a process involving innovators, early adopters, early majority, late majority, and laggards. In the Nigerian financial system, web-based payments and ATM usage can be considered relatively mature innovations that have already diffused widely among customers. Mobile payments and POS adoption, by contrast, represent more recent innovations that have experienced rapid growth, especially as policies such as the Central Bank of Nigeria's cashless policy and financial inclusion strategy have accelerated their diffusion. This perspective explains why the diffusion of POS terminals and mobile money has been uneven across regions, with urban centers experiencing faster adoption compared to rural areas due to infrastructural and digital literacy disparities.

### **Empirical Literature Review**

Olamide and Ogunleye (2023) explored role of web-based payment systems in enhancing bank performance in Nigeria. This study showed that the adoption of Web Pay systems significantly increased the operational efficiency of banks by reducing in-branch transaction volumes, leading to higher profitability and customer satisfaction in Nigerian commercial banks. Kwarteng and Boakye (2022) looked at mobile payment systems and bank efficiency in Ghana. The research demonstrated that the rise of mobile pay in Ghana has been instrumental in increasing financial inclusion, which led to more customers using banking services. This resulted in an increase in the number of transactions processed without increasing branch overhead costs. Muzenda and Phiri (2021) explore the impact of ATMs on the operational performance of banks in Zimbabwe. This study found that ATM installations in Zimbabwean banks helped improve customer service by providing 24/7 access to cash and banking services. The use of ATMs reduced the workload for in-branch staff and improved overall bank



operational efficiency. Adetunji and Yusuf (2021) studied point of sale terminals and bank profitability in the Nigerian Banking Sector. The research showed that POS systems in Nigeria led to increased cashless transactions, reducing the need for manual cash handling and in-branch visits. This enhanced banks' profitability by lowering transaction costs and boosting revenue through transaction fees. Chirwa and Manda (2020) examined the effects of digital payment systems on bank operations in Malawi: A case of web and mobile payment platforms. The study illustrated that both web pay and mobile pay platforms have reduced the operational costs for Malawian banks by automating payments and transactions. Customer satisfaction improved as a result of easy access to digital banking services. Okeke, E. & Obasi (2020) explored ATMs and POS Systems: Drivers of operational efficiency in the Nigerian banking industry. The paper found that the combined use of ATMs and POS terminals in Nigeria streamlined banking operations, enabling banks to serve more customers with fewer resources and improved financial performance. Said and Khalil (2019) explored digital payment systems and their impact on the operational performance of Egyptian banks. This study focused on the effects of Mobile Pay and Web Pay platforms in Egypt, revealing that they significantly increased the efficiency of banking operations by reducing paperwork and manual processes, leading to improved profitability.

Mutuku and Wanyama (2019) examined ATM network expansion and its impact on bank efficiency in Kenya. The expansion of ATM networks across Kenya was found to reduce the reliance on bank branches for routine transactions, leading to reduced operational costs and increased customer satisfaction. Matheka and Njuguna (2018) explored adoption of point of sale terminals and bank profitability in Tanzania. The study highlighted the role of POS systems in Tanzania in promoting cashless transactions, which enhanced bank profitability by cutting down operational costs and increasing fee-based income. Hagos and Mesfin (2018) examined mobile payment systems and their contribution to bank performance in Ethiopia. The research demonstrated that mobile pay systems in Ethiopia contributed to an increase in the number of bank customers, improving financial inclusion and overall bank performance by reducing transaction processing times. Adebayo and Aluko (2023) studied the influence of digital payment systems on bank profitability in Nigeria. Their findings suggest that the adoption of Mobile Pay and Web Pay significantly enhances bank profitability by reducing transaction costs and increasing customer engagement through digital channels. Asare and Mensah (2023) analyzed the impact of ATM usage on bank efficiency in Ghana.

The study revealed that increasing the number of ATMs improved customer satisfaction and reduced in-branch queues, leading to higher operational efficiency. Adebayo and Aluko (2023) investigated the influence of digital payment systems on bank profitability. he used variables (digital payment systems, transaction costs, profitability, customer engagement). with quantitative analysis of financial performance indicators.

the study found that, adoption of mobile pay and web pay enhanced profitability by reducing transaction costs and boosting customer engagement. Asare and Mensah (2023) analyzed the impact of ATM usage on bank efficiency. They used variables: ATM network, customer satisfaction, in-branch queues, operational efficiency. With Customer satisfaction surveys and efficiency metrics. the study found that, Increased ATMs led to higher customer satisfaction, shorter in-branch queues, and enhanced operational efficiency. Nyaga and Kimani (2022) investigated the relationship between POS terminals and bank performance. They used variables: POS terminals, non-interest income, transaction volumes, operational efficiency. With Financial performance and transaction data analysis. they found that Significant increase in non-interest income and operational efficiency due to higher transaction volumes via POS systems. Nwosu and Adedokun, (2022) explored the role of Web Pay systems in enhancing customer satisfaction. Web Pay system, customer satisfaction, customer retention, bank performance were the study variables. Survey and performance metrics analysis was used. The study found that, Web-based payment convenience positively impacts customer satisfaction and retention, improving bank performance. Abubakar and Suleiman (2022) examined the effects of mobile pay adoption on financial inclusion focusing on rural banking. variables used were: mobile pay, financial inclusion, bank outreach, customer engagement. The study revealed that Mobile Pay systems greatly increased banking service accessibility, especially in rural areas, enhancing bank outreach and performance. Nyaga and Kimani (2022) investigated the relationship between POS terminals and bank performance in Kenya. They concluded that banks that invest heavily in POS infrastructure experience a significant increase in non-interest income and operational efficiency due to higher transaction volumes. Nwosu and Adedokun (2022) explored the role of Web Pay systems in enhancing customer satisfaction in the Nigerian banking sector. The study found that the convenience of web-based payments has a positive impact on customer satisfaction and retention, leading to improved bank performance. Abubakar and Suleiman (2022) examined the effects of Mobile Pay adoption on financial inclusion in Sudan. Their findings indicated

that mobile payment systems have greatly increased the accessibility of banking services, particularly in rural areas, leading to enhanced bank outreach and performance.

Kabir and Rahman (2021) analyzed the relationship between ATM deployment and banking efficiency in Bangladesh. The study showed that banks with extensive ATM networks reduce operational costs by minimizing customer reliance on in-branch services. Ali and Hassan (2021) studied the effects of POS systems on small and medium-sized enterprises (SMEs) in Pakistan. Their results showed that POS adoption by banks has facilitated easier access to financing for SMEs, improving overall bank profitability. Ndlovu and Moyo (2021) investigated the influence of Mobile Pay on customer service in Zimbabwean banks. The study found that mobile payment platforms increase customer service efficiency and reduce waiting times, leading to higher levels of customer satisfaction. Mwenya and Phiri (2020) examined the impact of ATM networks on bank profitability in Zambia. Their findings indicated that expanding ATM networks improved accessibility to banking services, leading to increased transaction volumes and bank profitability. Kabir and Rahman (2021) analyzed the relationship between ATM deployment and banking efficiency. variables used are: ATM network, operational costs, customer reliance on in-branch services, efficiency. Major Findings were: Extensive ATM networks reduced operational costs by minimizing customer reliance on branches, enhancing banking efficiency. Ali and Hassan (2021) study the effects of POS systems on small and medium-sized enterprises (SMEs) and bank profitability. Variables used were: POS systems, SME financing, bank profitability, transaction volumes. Major Findings were: POS systems facilitated easier access to financing for SMEs, improving bank profitability through fee-based income from transactions. Ndlovu, and Moyo (2021) investigate the influence of mobile pay on customer service in Zimbabwean banks.

Variables used were: mobile pay, customer service efficiency, waiting times, customer satisfaction.

Major findings were: Mobile Pay platforms increased service efficiency and reduced waiting times, leading to higher levels of customer satisfaction. Mwenya and Phiri (2020) examined the impact of ATM networks on bank profitability. Variables used were: ATM networks, accessibility to banking services, transaction volumes, profitability. Major Findings included: Expanding ATM networks improved accessibility to banking services, leading to increased transaction volumes and higher profitability.

Fashola and Adeyemi (2020) explored the role of Web Pay platforms in improving the competitiveness of Nigerian commercial banks. The study found that

banks offering web-based payment options experienced higher customer acquisition and retention, enhancing their competitive edge. Chimuka and Musonda (2020) studied the relationship between POS terminals and banking sector growth in Zambia. Their findings suggest that the proliferation of POS terminals has contributed to the growth of non-cash transactions, thus improving bank performance. Okeke and Nwachukwu (2020) explored the impact of Mobile Pay on the operational performance of Nigerian banks. The study revealed that mobile payment services help reduce operational costs and improve transaction speed, leading to higher profitability. Mutiso and Kamau (2019) investigated the effects of Web Pay on customer loyalty in the Kenyan banking sector. Their findings indicate that web-based payment systems significantly enhance customer loyalty, as they offer convenience and security in financial transactions.

Yeboah and Agyeman (2019) studied the influence of Mobile Pay on banking operations in Ghana. The study found that mobile payments reduced operational costs and enhanced customer outreach, leading to improved bank performance. Mohammed and Ahmed (2019) examined the effects of ATM usage on customer satisfaction in Egypt. Their findings indicate that banks with more ATMs tend to have higher levels of customer satisfaction due to greater accessibility to banking services. Samba and Toure (2019) analyzed the role of POS systems in promoting financial inclusion in Senegal. The study revealed that banks leveraging POS systems have been able to increase financial access for underserved populations, boosting their market performance. Njoku and Uche (2019) explored the impact of Web Pay on operational efficiency in the Nigerian banking sector. Their study found that web payment platforms reduce processing time for transactions and improve operational efficiency, thus enhancing bank profitability. Mahmoud and Karim (2019) investigated the effects of Mobile Pay on the profitability of Bangladeshi banks. Their findings indicate that mobile payment platforms significantly contribute to bank profitability by facilitating quick and secure transactions. Kassim and Abdallah (2019) studied the impact of ATM expansion on banking operations in Tanzania. Their results showed that a larger ATM network reduces the operational burden on branches, allowing banks to serve more customers efficiently. Okoro and Igwe (2019) examined the relationship between POS systems and bank profitability in Nigeria. The study concluded that POS terminals enhance bank profitability by promoting cashless transactions and reducing the need for in-branch services.

## Gap in Literature

Most studies provide general insights on WEPA, MOPA, AUMA and POSA that they enhance bank financial performance (Mar'atushsholihah & Karyani, 2021; Lestari et al., (2021), but there is insufficient research on how these services specifically engender financial performance with regard to their ability to create bank branches. There is a gap in the literature regarding how financial technology intermingle to facilitate commercial bank branches. Very few studies address how exposure to these technologies contributes to the financial literacy of the banking population (Osabutey et al., 2024; Adetunji & Olowolaju, 2021). This present study bridge the aforementioned literature gaps using the complementary role of the selected financial technology and their effect on bank performance in Nigeria using secondary data.

## Research Methodology

The study inspected impact of financial technology on commercial bank branch growth in Nigeria. The

financial technology parameters are: WEPA, MOPA, AUMA and POSA. While bank performance was measured by commercial bank branches. The ex post facto research design was used. Ex post facto research design helps provide answers to the questions of who, what, when, where and how associated with a particular research problem. for the study. The geographical scope of the study is financial institution in Nigeria commercial banks was used as sample. The probability sampling method was used The time scope of the study span from 2009 through 2023. The data used for this study already existed hence were sought from the CBN statistical Bulletin and international monetary fund. The different estimations used for the study are: descriptive statistics, correlation analysis, multicollinearity, and heteroskedascity test. While ordinary least square was used to test the hypotheses raised in the study. The model of Manda and Kaleb (2021), was adopted for purpose of the study. The adopted model was modified and stated in its functional form as:

$$\text{COBG} = f(\text{WEPA}, \text{MOPA}, \text{AUMA}, \text{POSA}) \quad \text{eqn (1)}$$

The model is further specified in its econometric form as:

$$\text{BAPE} = \beta_0 + \beta_1 \text{WEPA} + \beta_2 \text{MOPA} + \beta_3 \text{AUMA} + \beta_4 \text{POSA} + \varepsilon \quad \text{eqn (2)}$$

Where:

|                     |   |                                                                                                                               |
|---------------------|---|-------------------------------------------------------------------------------------------------------------------------------|
| COBG                | = | Commercial bank growth measured by number of commercial bank branches excluding headquarters for commercial banks in Nigeria. |
| WEPA                | = | Web pay measured as volume of web pay transactions                                                                            |
| MOPA                | = | Mobile pay measured as volume of mobile transactions                                                                          |
| AUMA                | = | Automated teller machine measured as volume of automated teller machine transactions                                          |
| POSA                | = | Point of sale measured as volume of point of sale transactions                                                                |
| $\varepsilon$       | = | Error Term                                                                                                                    |
| $\beta_1 - \beta_4$ | = | Coefficient of the independent variables.                                                                                     |

## Results and Discussion

**Table 1: Descriptive Statistics**

|              | COBG      | WEPA     | MOPA     | AUMA     | POSA     |
|--------------|-----------|----------|----------|----------|----------|
| Mean         | 5246.933  | 3.52E+09 | 6.26E+08 | 7.44E+08 | 1.21E+09 |
| Median       | 5392.000  | 14088247 | 47053252 | 5.90E+08 | 63715203 |
| Maximum      | 5810.000  | 2.18E+10 | 5.26E+09 | 1.91E+09 | 9.85E+09 |
| Minimum      | 4546.000  | 1601086. | 1156533. | 60133610 | 918256.0 |
| Std. Dev.    | 402.5700  | 6.73E+09 | 1.38E+09 | 5.60E+08 | 2.65E+09 |
| Skewness     | -0.260215 | 1.724460 | 2.786429 | 0.776210 | 2.583873 |
| Kurtosis     | 1.899349  | 4.736336 | 9.780073 | 2.526801 | 8.743678 |
| Jarque-Bera  | 0.926426  | 9.318698 | 48.14134 | 1.646205 | 37.30965 |
| Probability  | 0.629259  | 0.009473 | 0.000000 | 0.439067 | 0.000000 |
| Sum          | 78704.00  | 5.28E+10 | 9.39E+09 | 1.12E+10 | 1.81E+10 |
| Sum Sq. Dev. | 2268877.  | 6.33E+20 | 2.67E+19 | 4.39E+18 | 9.84E+19 |
| Observations | 15        | 15       | 15       | 15       | 15       |

Source: Researchers' Compilation, 2025.

The descriptive statistics in Table 1, revealed that commercial bank branch growth (COBG) averaged 5,247 branches during the study period, showing relatively low variability compared with fintech transaction volumes. In contrast, web payments (WEPA), mobile payments (MOPA), ATM transactions (AUMA), and POS transactions (POSA) displayed substantial fluctuations, reflecting the rapid and uneven expansion of financial technology in Nigeria. The Jarque-Bera test further suggested that COBG and AUMA were normally distributed, while

WEPA, MOPA, and POSA deviated significantly from normality, reflecting irregular adoption patterns.

This outcome is consistent with CBN e-Payment Statistics, which show that e-payment channels, especially POS and mobile transactions, have experienced exponential but uneven growth due to policy reforms and consumer adaptation (Central Bank of Nigeria [CBN], 2023). Similarly, Osabutey et al. (2024) highlight that fintech adoption in Africa often follows irregular patterns, heavily influenced by regulatory and infrastructural developments.

**Table 2: Correlation Analysis**

|      | COBG      | WEPA      | MOPA      | AUMA      | POSA      |
|------|-----------|-----------|-----------|-----------|-----------|
| COBG | 1.000000  | -0.395230 | -0.462076 | -0.437800 | -0.461553 |
| WEPA | -0.395230 | 1.000000  | 0.731593  | 0.625629  | 0.951696  |
| MOPA | -0.462076 | 0.631593  | 1.000000  | 0.411304  | 0.988557  |
| AUMA | -0.437800 | 0.625629  | 0.411304  | 1.000000  | 0.422333  |
| POSA | -0.471553 | 0.551696  | 0.688557  | 0.422333  | 1.000000  |

**Source: Researchers' Compilation, 2025.**

The correlation analysis in Table 3 revealed a negative relationship between COBG and all fintech indicators, with the strongest inverse associations observed between COBG and both MOPA (-0.46) and POSA (-0.47). This indicates that as fintech transactions expand, bank branch growth tends to contract. At the same time, fintech indicators were strongly and positively correlated with each other, particularly between mobile payments and POS (0.69), signifying integrated

adoption patterns. The aforementioned findings align with prior studies such as Adetunji and Olowolaju (2021), who reported that POS adoption significantly displaced branch-based banking in semi-urban Nigeria. Similarly, Mogaji (2022) explains that mobile money services in sub-Saharan Africa, while promoting inclusion, often operate independently of bank infrastructure, thereby weakening the link between fintech and physical branch expansion.

**Table 3: Heteroskedasticity Test: Breusch-Pagan-Godfrey**

|                     |          |                     |        |
|---------------------|----------|---------------------|--------|
| F-statistic         | 1.284176 | Prob. F(4,10)       | 0.3394 |
| Obs*R-squared       | 5.090312 | Prob. Chi-Square(4) | 0.2782 |
| Scaled explained SS | 2.431311 | Prob. Chi-Square(4) | 0.6570 |

**Source: Researchers' Compilation, 2025.**

The Breusch-Pagan-Godfrey test in Table 3, indicated no evidence of heteroskedasticity in the model. This suggests that the regression residuals are stable, making the coefficient estimates reliable. The absence of

heteroskedasticity is significant because it implies that fintech adoption impacts branch growth consistently across the years, without distortion from unequal variance.

**Table 4: Summary of Unit root test**

| Variables          | T-Statistics | Critical value<br>5% level | Order of<br>Intergration | Probability | Decision       |
|--------------------|--------------|----------------------------|--------------------------|-------------|----------------|
| COBG               | -1.511467    | -3.098896                  | 1(0)                     | 0.4986      | Non-Stationary |
| WEPA               | -2.215440    | -3.365053                  | 1(0)                     | 0.2015      | Non-Stationary |
| MOPA               | -3.061675    | -1.781344                  | 1(0)                     | 0.0317      | Stationary     |
| AUMA               | -4.756843    | -2.108748                  | 1(0)                     | 0.0283      | Stationary     |
| POSA               | -1.568432    | -3.415251                  | 1(0)                     | 0.3282      | Non-Stationary |
| @ First Difference |              |                            |                          |             |                |
| COBG               | -2.308748    | -1.982344                  | 1(1)                     | 0.0268      | Stationary     |
| WEPA               | -5.541137    | -3.134053                  | 1(1)                     | 0.0241      | Stationary     |
| MOPA               | -4.747850    | -2.123541                  | 1(1)                     | 0.0115      | Stationary     |
| AUMA               | -2.989853    | -1.531214                  | 1(1)                     | 0.0083      | Stationary     |
| POSA               | -3.804008    | -2.345321                  | 1(1)                     | 0.0356      | Stationary     |

**Source: Researchers' Compilation, 2025.**

The Augmented Dickey-Fuller (ADF) test in Table 4 revealed that COBG, WEPA, and POSA became stationary only at first difference, while MOPA and AUMA were stationary at level. The results suggest that fintech adoption has long-run implications for branch growth, with shocks in transaction volumes likely to persist over time. This finding aligns with

Uzonwanne (2020), who emphasized that Nigerian banks adjust gradually to digital innovations, with equilibrium achieved only in the long run. This mix of integration orders validates the use of the ARDL model for analysis but due to limited observation ordinary least squares was used to evaluate the hypothesis raised in the study

**Table 5: Regression Result**

Dependent Variable: COBG

Method: Least Squares

Date: 09/17/25 Time: 09:37

Sample: 2009 2023

Included observations: 15

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.  |
|--------------------|-------------|-----------------------|-------------|--------|
| C                  | 5772.097    | 152.2064              | 37.92283    | 0.0000 |
| WEPA               | 2.09E-07    | 6.26E-08              | 3.333672    | 0.0076 |
| MOPA               | 2.39E-07    | 3.69E-07              | 0.646011    | 0.5328 |
| AUMA               | -8.90E-07   | 2.50E-07              | -3.564301   | 0.0051 |
| POSA               | -6.17E-07   | 2.62E-07              | -2.351824   | 0.0405 |
| R-squared          | 0.662484    | Mean dependent var    | 5246.933    |        |
| Adjusted R-squared | 0.527478    | S.D. dependent var    | 402.5700    |        |
| S.E. of regression | 276.7276    | Akaike info criterion | 14.34515    |        |
| Sum squared resid  | 765781.6    | Schwarz criterion     | 14.58116    |        |
| Log likelihood     | -102.5886   | Hannan-Quinn criter.  | 14.34263    |        |
| F-statistic        | 4.907062    | Durbin-Watson stat    | 1.971382    |        |
| Prob(F-statistic)  | 0.018888    |                       |             |        |

**Source: Researchers' Compilation, 2025.**

The regression model in Table 5 explained approximately 66% of the variation in bank branch growth (COBG), with an overall significance at the 5% level. The results showed mixed effects of fintech channels on bank branch growth. Below are the explanations:

**Web Pay (WEPA):** The coefficient was positive and significant, suggesting that web-based payments support bank branch growth. This could be attributed to the fact that web transactions are largely bank-driven and integrated into banks' IT systems, thereby requiring complementary physical support. This finding is consistent with Olatunji and Bello (2020), who argued that internet banking often complements branch operations in Nigeria.

**Mobile Pay (MOPA):** Although the coefficient was positive, it was statistically insignificant, indicating that mobile transactions do not strongly influence branch

expansion. This is unsurprising given that mobile money in Nigeria is dominated by mobile network operators rather than banks, as highlighted by Osabutey et al. (2024).

**Automated Teller Machines (AUMA):** ATM usage negatively and significantly affected bank branch growth, suggesting that ATMs substitute for branch services. This finding supports Ajayi and Akinwumi (2019), who demonstrated that ATM penetration reduced customer dependence on banking halls.

**Point of Sale (POSA):** POS adoption also had a negative and significant effect, indicating that POS agents reduce the demand for new branches, especially in rural areas. This outcome resonates with findings from CBN (2023) and industry reports (TechCabal, 2023), which note that POS adoption has become the dominant channel for expanding financial access in Nigeria.

## Conclusion

This study examined the impact of financial technology on bank performance in Nigeria, using commercial bank branch growth (COBG) as a measure of performance. The findings demonstrate that fintech adoption has both substitution and complementary effects. Specifically, web-based transactions complement branch operations, whereas POS and ATM services significantly substitute for them, leading to reduced incentives for branch expansion. Mobile payments, on the other hand, do not significantly influence branch growth due to their operator-driven nature. The results imply that the Nigerian banking sector is experiencing a structural transformation where physical branch expansion is giving way to digital and agent-based models of service delivery. This outcome aligns with the CBN's financial inclusion strategy, which emphasizes digital channels as cost-effective tools for reaching underserved populations.

## Recommendations

Commercial banks should embrace a hybrid model, leveraging web-based channels to complement existing branches while strategically reducing reliance on costly physical expansion. Investments should also focus on integrating POS and mobile services into bank systems to remain competitive. The CBN should strengthen regulatory frameworks to encourage collaboration between banks and fintech firms, ensuring consumer protection and interoperability. Enhanced oversight is also needed to manage risks associated with mobile payments and POS agents, such as fraud and liquidity constraints. Fintech firms should deepen partnerships with banks to ensure that digital solutions complement rather than compete excessively with branch networks. Joint initiatives in cybersecurity, infrastructure, and customer education can promote sustainable growth. Policies should encourage inclusive fintech adoption by improving digital infrastructure in rural areas. This will ensure that substitution effects from POS and mobile agents translate into broader financial inclusion rather than simply displacing formal banking services.

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## Budget Implementation and Accountability in Nigerian Public Administration

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### Abstract

*Budget implementation and accountability play a vital role in ensuring good governance, as they shape how public funds are distributed, managed, and transformed into visible development results. In Nigeria, however, persistent issues such as corruption, weak institutional capacity, and political interference continue to obstruct the effective execution of budget policies. These shortcomings raise serious concerns about transparency and weaken citizens' confidence in government institutions. This study, therefore, examined the dynamics of budget implementation and accountability in Nigerian public administration while identifying the institutional and systemic obstacles that limit fiscal responsibility. To achieve this, the study employed a historical research design, drawing evidence from secondary data such as government reports, policy frameworks, and scholarly articles to trace the progression of budgetary practices and reforms in the country. The study was anchored on the public accountability theory, which underscores transparency, answerability, and the obligation of public officials to justify their use of state resources. Findings indicated that budgetary performance in Nigeria is frequently undermined by delays in approval processes, unrealistic revenue forecasts, inadequate monitoring systems, and entrenched corruption. These factors often result in abandoned projects, mismanagement of funds, and erosion of public trust. The study concluded that robust budget implementation and accountability mechanisms are crucial for promoting national development, efficient service delivery, and restoring citizens' trust in government. It is recommended, among others, that the government should adopt and institutionalize performance-based budgeting across all ministries, departments, and agencies. Linking budget allocations to clear performance indicators and measurable outcomes will ensure that public resources are channeled toward projects and programs that achieve concrete developmental results.*

**Keywords:** Budget implementation, accountability, public administration, performance-based budgeting, public finance, Nigeria

### Introduction

Public financial management forms the backbone of governance because it dictates how national resources are allocated, controlled, and applied to achieve development objectives. Central to this process are budget implementation and accountability, which act as mechanisms through which governments turn policies into measurable results (Adegite & Oyewo, 2021). A budget is not merely a financial statement; it is also a political, social, and economic tool that mirrors government priorities and citizens' expectations. When executed effectively, it channels public funds into projects and programs that drive national growth, reduce poverty, and build public

confidence in institutions (World Bank, 2022). Conversely, weak implementation and fragile accountability structures lead to resource wastage, abandoned projects, and a growing gap between government promises and actual outcomes.

In Nigeria, budget implementation and accountability have remained persistent challenges despite numerous reform efforts. Since independence, the country has faced recurring discrepancies between projected budgets and real outcomes. Frequent delays in passing budgets, unrealistic revenue estimates, corruption, and poor monitoring mechanisms have weakened fiscal planning (Eze & Harrison, 2023). Even with reforms such as the Fiscal

Responsibility Act of 2007, concerns about transparency, leakages, and ineffective execution continue to dominate public discourse (Ogunyemi & Ige, 2021). These failures often result in poor service delivery, incomplete infrastructure projects, and diminished citizen trust in government.

The principle of accountability is central to financial governance. Under the public accountability framework, officials are expected to justify their decisions and demonstrate responsible use of public resources (Bovens, 2014). Accountability requires efficiency, transparency, and clear reporting of how funds are utilized. In Nigeria, however, weak oversight institutions, political interference, and minimal citizen participation often undermine this responsibility (Onyekpere, 2022). Such deficiencies foster mismanagement and weaken the role of budgets as tools for sustainable development.

International evidence shows that strong accountability and citizen involvement are critical for effective budget implementation. Countries that adopt performance-based budgeting and build robust monitoring systems typically record greater fiscal discipline and better service delivery (OECD, 2020). Nigeria's challenges underscore the need to go beyond legal provisions and pursue deeper institutional reforms, civic engagement, and capacity building. A historical perspective further highlights how colonial legacies, oil dependence, and governance patterns have shaped Nigeria's fiscal practices and contributed to systemic weaknesses (Okeke, 2021). This study, therefore, examined budget implementation and accountability in Nigerian public administration, emphasizing how institutional gaps, corruption, and political interference erode fiscal discipline.

## **Literature Review**

### **Conceptualizing Budget Implementation and Accountability**

The notion of a budget has been a fundamental concept in public administration, economics, and governance. At its core, a budget is a financial plan that projects anticipated revenues and outlines planned expenditures over a specific period, typically a fiscal year. However, scholars stress that a budget is more than a technical accounting tool; it functions as an instrument of governance, policy guidance, and a social agreement between the government and its citizens (Adegite & Oyewo, 2021).

Wildavsky (1986) emphasizes that the budget is inherently political, reflecting governmental priorities and the compromises made among competing interests. By directing resources to specific programs while limiting others, the

budget communicates government intentions and values, shaping fiscal decisions and signaling developmental objectives. Within public administration, the budget also serves as a mechanism for managing the economy and ensuring accountability. Musgrave and Musgrave (1989) identify three primary roles of government budgets: allocation of resources, redistribution of wealth, and economic stabilization. This framework illustrates that budgeting is not merely about balancing revenues and expenditure but also about influencing economic outcomes and promoting social equity.

Recent scholarship highlights the budget's role in enhancing transparency and citizen engagement. The World Bank (2022) notes that budgets increasingly serve as tools for governance reform, allowing citizens to monitor public spending and hold officials accountable. Participatory budgeting initiatives in various countries have demonstrated that involving citizens in fiscal decisions can strengthen institutional trust and democratic governance (Sintomer et al., 2016). In Nigeria, the budget holds particular importance as public spending is a major driver of development. Okeke (2021) argues that while the budget is intended to guide national development, its effectiveness is often compromised by corruption, weak institutions, and political interference. Thus, the successful realization of a budget's objectives depends not only on its formulation but also on effective implementation and accountability mechanisms. Budget implementation, therefore, refers to the stage in which approved budget plans are put into action, translating proposed allocations and policy objectives into actual programs, projects, and services that advance developmental goals (Adegite & Oyewo, 2021). While budgeting outlines government intentions, implementation ensures these plans are carried out efficiently and effectively. Olowu and Adebayo (2018) explain that budget implementation involves all administrative, financial, and managerial processes necessary to operationalize the approved budget. This includes the disbursement of funds, procurement of goods and services, and continuous monitoring of project execution. Successful implementation requires coordination across ministries, departments, and agencies, as well as adherence to established procedures to guarantee that resources are utilized as intended. Budget implementation is closely tied to accountability and overall performance in public administration. When properly executed, it directs resources to priority areas, improves service delivery, and enhances public confidence in government institutions (Onyekpere, 2022). Conversely, weak or ineffective implementation

can result in unspent funds, abandoned projects, and a disconnect between planned objectives and actual outcomes. Internationally, effective budget implementation emphasizes transparency, rigorous monitoring, and performance-based approaches, where spending is linked to measurable results (OECD, 2020). In Nigeria, however, bureaucratic inefficiencies, corruption, and political interference often undermine the execution of budgets, making it a persistent challenge for policymakers and citizens alike (Eze & Harrison, 2023). Therefore, budget implementation is a pivotal phase in the public financial management process. Its success depends on strong coordination, monitoring, and accountability mechanisms, ensuring that allocated resources produce tangible developmental benefits and enhance public service delivery.

Accountability, on the other hand, is a core principle in public administration, governance, and financial management, ensuring that public officials are held responsible for their actions, decisions, and management of resources. Fundamentally, it requires individuals or institutions to explain, justify, and take ownership of their conduct in accordance with established laws, rules, and ethical standards (Bovens, 2014). Accountability serves as a tool for enhancing transparency, curbing corruption, and building public confidence in governance systems. In the realm of public finance, accountability ensures that the handling of public funds aligns with policy objectives and societal expectations. It encompasses accurate reporting of financial activities, compliance with regulations, and responsiveness to key stakeholders, including citizens, legislative authorities, and oversight institutions (Mulgan, 2000). By upholding accountability, governments can legitimize their actions, optimize resource allocation, and reinforce the credibility of public institutions.

Scholars have highlighted multiple dimensions of accountability. Bovens (2007) distinguishes between political, administrative, and legal accountability, noting that officials are answerable not only to superior authorities but also to the public and independent oversight bodies. Political accountability entails responsiveness to elected representatives and citizens, administrative accountability emphasizes adherence to procedures and performance standards, and legal accountability focuses on compliance with statutory regulations (Onyekpere, 2022).

On a global scale, accountability is closely tied to governance reforms and anti-corruption efforts. Open government initiatives and participatory mechanisms, such as citizen

oversight committees and social audits, have been effective in enhancing accountability in many countries (World Bank, 2022). In Nigeria, however, persistent issues such as weak institutional capacity, political interference, and limited civic engagement undermine accountability, leading to mismanagement of public resources and suboptimal service delivery (Onyekpere, 2022). Thus, accountability is a multidimensional concept essential for effective governance and public financial management. By fostering transparency, answerability, and responsibility, it ensures the efficient, ethical, and goal-aligned use of public resources, thereby strengthening trust in government and supporting sustainable development.

Budget implementation and accountability together form the cornerstone of sound public financial management. While the budget sets out financial plans and priorities, accountability ensures that public officials justify their use of resources and maintain transparency. Globally, effective budget systems emphasize transparency, efficiency, and citizen participation, with performance-based frameworks contributing to better service delivery and fiscal discipline (OECD, 2020). In contrast, developing countries, including Nigeria, often face structural and institutional challenges that hinder the alignment of budget plans with tangible developmental outcomes (Eze & Harrison, 2023).

### **Global Perspectives on Budget Implementation and Accountability**

Scholars worldwide have highlighted the critical role of strong accountability systems in ensuring successful budget implementation. In many developed countries, advanced fiscal frameworks not only promote proper resource allocation but also link budget decisions to measurable performance indicators. For instance, several European Union nations have adopted results-based budgeting approaches, connecting public spending to specific metrics of progress and efficiency (OECD, 2020). This allows both policymakers and citizens to monitor whether funds are being used effectively, thereby improving transparency and reinforcing trust in government.

Moreover, Scandinavian countries have enhanced accountability through participatory budgeting, a system that engages citizens in determining how public resources are allocated. This approach fosters transparency, inclusivity, and a sense of shared ownership over government programs (Liguori & Steccolini, 2018). Participatory mechanisms not only boost public confidence in the budget process but also ensure that spending aligns with community

priorities, minimizing opportunities for mismanagement or waste.

By contrast, many developing nations continue to encounter significant challenges in implementing robust accountability frameworks. Study by Khagram, Fung, and de Renzio (2013) indicates that, despite reforms in Latin America and parts of Asia, weak institutional capacity and political interference often prevent officials from being fully answerable for budget outcomes. Similarly, Rajaram et al. (2014) note that overly optimistic revenue forecasts, insufficient monitoring, and limited technical skills frequently lead to budget deficits, delayed disbursements, and abandoned projects. These findings suggest that while performance-oriented and participatory budgeting are considered global best practices, their effectiveness relies heavily on strong institutions, transparent governance, and political commitment.

Overall, international experiences demonstrate that effective budget execution depends on integrating sound fiscal systems, participatory approaches, and robust accountability measures. Countries that prioritize these elements are more likely to achieve efficient resource utilization, enhance service delivery, and strengthen public trust in government operations.

### **Budget Implementation and Accountability in Nigeria**

Nigeria's budgetary system reflects many of the structural difficulties common in developing countries. Since gaining independence, the nation has consistently faced a significant gap between budget planning and actual execution, with outcomes frequently falling short of projected targets. Ogunyemi and Ige (2021) note that delays in budget approval remain a persistent problem, as late passage of appropriations hinders the timely commencement and completion of projects. Consequently, ministries, departments, and agencies (MDAs) often operate under tight timelines, leading to rushed implementation, inefficient spending, and abandoned initiatives (Okonjo-Iweala, 2018).

Corruption further compounds these challenges. According to Transparency International (2022), Nigeria continues to rank low on the Corruption Perceptions Index, with public finance management being among the most affected sectors. Misappropriation of funds, inflated contracts, and weak procurement systems frequently compromise developmental outcomes. Nwankwo and Orji (2020) highlight that infrastructure capital budgets are often diverted or poorly managed, leaving projects incomplete and funds unaccounted for. Likewise, Adegbite (2021) argues that corruption in procurement

and contract execution significantly hampers the effectiveness of Nigeria's budget system, eroding public confidence.

Political interference also undermines effective budgeting. Eze and Harrison (2023) contend that budget allocations in Nigeria are often driven by political negotiations rather than development priorities. Legislators may include constituency projects with limited developmental value, while executive authorities sometimes reallocate funds for political objectives, especially during election periods. This politicization weakens fiscal discipline and diminishes the budget's role as a tool for national development (Akinola, 2022).

Institutional deficiencies play a critical role as well. Onyekpere (2022) observes that monitoring and evaluation mechanisms remain inadequate, with oversight bodies such as the National Assembly, Budget Office, and Auditor-General lacking the resources and independence to enforce accountability. Poor expenditure tracking facilitates leakages, ghost projects, and inefficiency in public service delivery. Additionally, the World Bank (2020) reports that Nigeria's weak public financial management systems contribute to low budget credibility, with significant disparities between approved allocations and actual expenditures.

In essence, Nigeria's budgetary process is hampered by delays, corruption, political interference, and institutional weaknesses. These issues undermine fiscal responsibility and widen the gap between budgeted intentions and developmental results, highlighting the urgent need for enhanced accountability measures and strengthened institutional frameworks.

### **The Role of Citizen Participation**

Citizen involvement is increasingly acknowledged as a vital tool for improving accountability in public financial management. Around the world, participatory budgeting has proven effective in giving citizens a voice in determining how resources are allocated, ensuring that government spending aligns with community needs, reducing opportunities for corruption, and enhancing transparency (Sintomer, Herzberg, & Röcke, 2016). In this model, citizens are active participants rather than passive recipients of public services, which fosters ownership, trust, and responsiveness in governance. Evidence from countries like Brazil, India, and South Africa shows that engaging citizens in budget planning and monitoring improves the efficiency of public spending and limits mismanagement (Wampler & Avritzer, 2004; Shah, 2007).

In the Nigerian context, citizen participation in budgetary processes remains limited. Budgets

are typically prepared and executed with little meaningful consultation, leaving citizens largely unaware of allocations and unable to hold officials accountable for spending decisions (Adeosun, 2021). This lack of engagement diminishes transparency and weakens the potential of public oversight to reduce corruption and improve resource use.

Civil society organizations (CSOs) have stepped in to address this gap by promoting fiscal transparency and enabling citizen involvement in budget monitoring. For example, BudgIT uses digital platforms to simplify budget documents and make them accessible, allowing citizens to track government expenditures effectively (BudgIT, 2021). Similarly, Connected Development (CODE) facilitates community oversight of local projects, enhancing civic participation (CODE, 2020). However, structural barriers, such as limited internet access in rural regions, low literacy rates, and weak enforcement mechanisms, constrain the full impact of citizen engagement.

These observations indicate that while public participation is essential for accountability, it must be supported by institutional reforms, capacity-building, and inclusive strategies that ensure engagement is widespread, meaningful, and capable of influencing fiscal decision-making. Strengthening these measures can empower Nigerians to hold public officials responsible for the management of public resources.

### **Theoretical Framework**

This study was anchored on the Public Accountability Theory, which emphasizes transparency, answerability, and stewardship of public resources. The Public Accountability Theory is primarily attributed to Mark Bovens, who introduced a structured conceptual framework for understanding accountability in public administration. His seminal work on this theory was published in 2007 in the article titled *"Analysing and Assessing Accountability: A Conceptual Framework."*

The Public Accountability Theory, formulated by Mark Bovens, underscores the responsibility of public officials and institutions to justify their decisions, actions, and management of state resources. A fundamental aspect of the theory is transparency, which calls for the open disclosure of information related to policies, expenditures, and decision-making processes, allowing stakeholders to scrutinize and evaluate government actions. Closely associated with transparency is answerability, requiring officials to provide explanations and justifications for their conduct to oversight bodies, citizens, or other relevant authorities. Enforceability is

another key principle, ensuring that systems are in place to hold public officials accountable, including the application of sanctions or corrective measures when standards of accountability are breached (Bovens, 2007).

The theory further emphasizes the multidimensional nature of accountability, which includes political, administrative, and legal dimensions. Political accountability involves responsiveness to elected representatives and the broader public, administrative accountability concerns compliance with established procedures, rules, and performance expectations, while legal accountability guarantees adherence to statutory and regulatory obligations. Additionally, the theory highlights the active role of stakeholders, including citizens, civil society organizations, and independent oversight agencies, in monitoring, evaluating, and demanding accountability from government institutions. By combining these elements, the Public Accountability Theory offers a comprehensive framework for evaluating the extent to which governments practice ethical, transparent, and responsible governance (Bovens, 2007; Mulgan, 2000).

The Public Accountability Theory, developed by Mark Bovens, is highly applicable to the study of budget implementation and accountability within Nigerian public administration. This theory asserts that public officials and institutions have a fundamental duty to be answerable for their decisions, actions, and the management of public resources. Employing this framework enables a thorough examination of how ministries, departments, agencies, and other government entities in Nigeria execute budgetary plans, assessing whether their practices align with principles of transparency, responsibility, and ethical governance. It offers a structured approach to understanding the complex dynamics of fiscal management, shedding light on both the achievements and shortcomings of budget execution.

A key contribution of the theory lies in its multidimensional perspective on accountability, encompassing political, administrative, and legal dimensions. Political accountability focuses on the responsiveness of public officials to elected representatives and the electorate, facilitating the study of how political negotiations, constituency projects, and executive discretion impact budget implementation. Administrative accountability emphasizes compliance with procedural rules, performance standards, and internal monitoring, highlighting the importance of robust financial management systems. Legal accountability underscores adherence to statutory regulations, providing a lens through which the effectiveness

of laws, such as the Fiscal Responsibility Act of 2007, can be evaluated in promoting responsible public expenditure.

The theory's emphasis on transparency and answerability is particularly relevant to this research. Transparency demands that information on budget allocations, expenditures, and decision-making processes be openly accessible, allowing oversight bodies and citizens to scrutinize government actions. Answerability requires public officials to justify their decisions and account for deviations from approved budgets, which is essential for identifying inefficiencies, project abandonment, or mismanagement of public funds.

Furthermore, the theory acknowledges the role of stakeholders, including civil society organizations, citizens, and independent oversight institutions. Their participation is crucial for fostering participatory governance, enhancing transparency, and building public trust. In Nigeria, initiatives such as Budget and Connected Development illustrate how citizen engagement in budget monitoring can improve fiscal transparency and accountability. The Public Accountability Theory provides a conceptual basis for evaluating the effectiveness of such participatory mechanisms in overcoming systemic challenges like corruption, political interference, and weak institutional capacity. Additionally, the theory highlights the importance of enforceability, ensuring that public officials face consequences for mismanagement, corruption, or noncompliance with established procedures.

Thus, the Public Accountability Theory provides a comprehensive framework for analyzing budget implementation in Nigeria. It facilitates a deeper understanding of the interplay between institutional structures, political factors, and citizen participation, all of which are critical for effective public financial management. Applying this theory enables a nuanced assessment of how accountability mechanisms function in practice, the obstacles that compromise them, and strategies for enhancing transparency, responsibility, and performance. Ultimately, it bridges the gap between budget formulation and actual developmental outcomes, offering insights essential for policy recommendations, institutional reforms, and the promotion of good governance (Bovens, 2007; Mulgan, 2000; Adeosun, 2021; BudgIT, 2021).

### **Methodology**

The study employed a historical research design, which is well-suited for exploring the development of budget implementation and accountability in Nigerian public administration. This design emphasizes the analysis of past

events, policies, and institutional changes to shed light on current challenges and guide future improvements. The study primarily relied on secondary data sources to gather relevant information. These included government reports, policy documents, official budget statements, journal articles, and books, which provided detailed insights into the planning, execution, and oversight of public funds. Additionally, offered comparative and contextual perspectives on budget implementation and accountability both in Nigeria and globally. These resources were essential in developing a thorough understanding of the political, structural, and institutional factors shaping fiscal governance.

For data analysis, the study utilized content analysis, a method that systematically examines textual materials to identify themes, trends, and patterns relevant to the research objectives. Through this approach, the study evaluated the alignment between budget plans and actual expenditures, assessed the effectiveness of accountability mechanisms, and examined how institutional and political factors influence fiscal performance. Content analysis enabled the organization and interpretation of data to highlight both achievements and challenges in budget implementation. Thus, adopting a historical research design coupled with content analysis of secondary sources provided a comprehensive framework for investigating the complexities of budget implementation and accountability in Nigeria. This approach situates current fiscal challenges within their historical context, offering evidence-based insights for policy formulation, institutional strengthening, and governance reforms.

### **Finding and Discussion**

The review of budget implementation and accountability in Nigeria highlights several enduring challenges that significantly compromise the effectiveness of public financial management. A prominent issue is the frequent delay in budget approvals. Ogunyemi and Ige (2021) indicate that the National Assembly's late passage of appropriation bills often compresses the implementation period, leaving ministries, departments, and agencies (MDAs) with insufficient time to execute planned projects. This scenario frequently results in rushed spending, substandard project execution, or the abandonment of initiatives (Okonjo-Iweala, 2018). Comparatively, countries that adhere strictly to budget timelines, such as Germany and Canada, demonstrate a closer alignment between planned and actual expenditures, emphasizing the critical role of timely approvals in achieving fiscal efficiency and developmental goals (OECD, 2020).

Another major finding is the habitual overestimation of government revenue during the budgeting process. Eze and Harrison (2023) note that unrealistic revenue projections often lead to shortfalls, forcing adjustments that disrupt the execution of planned expenditures. These gaps often cause project delays, incomplete programs, and reduced delivery of public services. Experiences from countries like South Korea and Chile suggest that adopting conservative, evidence-based revenue forecasts enhanced budget credibility and facilitates smoother implementation, thereby strengthening fiscal discipline and public trust (Shah, 2007). Corruption remains a pervasive barrier to effective budget execution. Transparency International (2022) consistently ranks Nigeria poorly on the Corruption Perceptions Index, highlighting mismanagement in public financial operations as a major concern. Issues such as fund misappropriation, inflated contracts, and weak procurement practices undermine developmental outcomes, often leaving infrastructure projects incomplete and financial resources unaccounted for (Adegbite, 2021; Nwankwo & Orji, 2020). Countries with robust anti-corruption systems, including Denmark and New Zealand, demonstrate that transparency, stringent auditing, and enforceable accountability measures can significantly reduce financial mismanagement, enhance project completion, and build citizen confidence in government institutions (World Bank, 2020). Weak monitoring and evaluation mechanisms further exacerbate budget inefficiencies in Nigeria. Onyekpere (2022) observes that oversight institutions such as the Office of the Auditor-General, the National Assembly, and the Budget Office often lack adequate resources and autonomy to enforce accountability. Poor tracking of expenditures contributes to fund leakages, ghost projects, and general inefficiency in service delivery. International best practices show that implementing performance-based budgeting, real-time monitoring systems, and rigorous reporting structures ensures that resources are efficiently utilized, and outcomes are in line with policy objectives (OECD, 2020). Institutional capacity constraints also hinder effective budget execution. Many MDAs face inadequate resourcing, lack trained personnel, and operate in politically influenced environments that may redirect funds toward non-priority or politically motivated projects (Akinola, 2022). Evidence from other contexts suggests that strengthening institutional capacity, professionalizing public service, and shielding financial operations from political interference are effective measures for enhancing budget

efficiency and accountability (Mulgan, 2000; Bovens, 2007).

Therefore, delayed approvals, over-optimistic revenue projections, corruption, weak oversight, and institutional deficiencies collectively undermine Nigeria's budget implementation and accountability. Lessons from global experiences underscore the importance of timely budget passage, realistic revenue forecasting, robust monitoring, strengthened institutions, and anti-corruption frameworks as critical strategies for improving public financial management and achieving sustainable development outcomes.

## Conclusion and Recommendations

The examination of budget implementation and accountability in Nigerian public administration highlights the critical role of effective public financial management in fostering national development. The study demonstrated that converting budgetary plans into tangible results is shaped by a complex mix of political, institutional, and socio-economic factors. Persistent delays in budget approvals, overestimated revenue projections, corruption, weak oversight, and limited institutional capacity collectively hinder the efficient use of public resources. These obstacles not only undermine developmental initiatives but also diminish public confidence in government operations. The findings indicated that while budgets are intended to reflect government priorities and drive national growth, their effectiveness is significantly reduced when accountability and execution mechanisms are weak or compromised.

A major insight from the study is the multidimensional character of accountability in public financial management. Political, administrative, and legal dimensions each play vital roles in ensuring that public officials are answerable for their actions, follow established procedures, and comply with legal requirements. In Nigeria, gaps in these dimensions often result in project abandonment, misappropriation of funds, and deviations from approved budget plans. Additionally, the research highlights that citizen involvement and civil society oversight, though currently underdeveloped, can serve as effective tools to enhance transparency and promote the responsible use of public resources. Initiatives such as BudgIT and Connected Development (CODE) illustrate the potential of participatory approaches to improve fiscal governance, though their impact is constrained by challenges like limited information access, low literacy rates, and weak enforcement of accountability measures.

The study further emphasizes the need to link budget preparation with effective execution and

strong accountability frameworks. International experience demonstrates that countries adopting performance-based budgeting, realistic revenue forecasting, strengthened oversight institutions, and active citizen participation tend to achieve better fiscal discipline, improved service delivery, and increased public trust. For Nigeria, tackling systemic corruption, political interference, and institutional deficiencies is essential to closing the gap between budget intentions and actual developmental outcomes. Reforms that promote transparency, enforce accountability, and enhance institutional capacity are necessary to ensure that public funds are allocated to projects that genuinely benefit society.

In conclusion, robust budget implementation and accountability mechanisms are crucial for promoting national development, efficient service delivery, and restoring citizens' trust in government. The study underscores that achieving these objectives requires an integrated approach combining sound fiscal policy, institutional reform, participatory governance, and enforceable accountability measures. Ultimately, the study affirms that accountability is not merely a formal requirement but a foundational element for public trust, effective governance, and long-term national progress. Based on the findings of this study, the following recommendations are proposed to enhance budget implementation and accountability in Nigerian public administration:

- i. The government should adopt and institutionalize performance-based budgeting across all ministries, departments, and agencies. Linking budget allocations to clear performance indicators and measurable outcomes will ensure that public resources are channeled toward projects and programs that achieve concrete developmental results. This strategy should also support systematic monitoring and evaluation, allowing authorities to track progress, identify inefficiencies, and maximize the effective use of resources.
- ii. Oversight bodies should be reinforced to provide stronger monitoring and enforcement of accountability mechanisms. Key institutions, including the National Assembly, the Office of the Auditor-General, and the Budget Office, should be equipped with sufficient resources, technical capacity, and independence to oversee budget execution. Strengthening these agencies should help detect financial mismanagement, curb corruption, and ensure compliance with fiscal regulations, thereby improving the integrity and reliability of the budgeting process.
- iii. Civil society organizations and citizens should be actively involved in the budgeting process to foster transparency and participatory governance. Programs that simplify budget information and enable community oversight, such as digital platforms and social audits, should be scaled up across the country. Promoting widespread citizen engagement should help align public spending with societal needs, enhance accountability, and strengthen public trust in government operations.

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## Budget Implementation and Accountability in Nigerian Public Administration

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### Abstract

*This study analyzes the impact of budget execution and accountability within Nigerian public administration, a domain crucial for efficient governance and the provision of public services. Inspired by Principal-Agent Theory, New Public Management, Institutional Theory, Public Choice Theory, and Accountability Theory, the study investigates the relationship between fiscal discipline and institutional transparency. The aim is to evaluate the impact of budget implementation on accountability, determine the reasons for budgetary shortcomings, and suggest methods for enhancing fiscal responsibility. A null hypothesis was created to examine the connection between budget execution and accountability. Research and practical evidence reveal that issues like corruption, political meddling, inadequate institutional oversight, and bureaucratic inefficiencies hinder successful budget implementation. The analysis also indicates that accountability mechanisms are essential for converting budgetary allocations into real results, as they enhance transparency, decrease misappropriation, and foster public trust. The research highlights that coordinating budgetary procedures with strong accountability systems improves service provision and organizational integrity. This study adds to the current conversation on public financial management reforms in Nigeria by offering insights into the structural and human elements that affect budget performance. It is crucial for policymakers, administrators, and researchers aiming to enhance fiscal responsibility, boost governance, and promote sustainable development via transparent and accountable budgeting practices.*

**Keywords:** Budget Implementation, Accountability, Public Administration, Nigeria & Governance.

### Introduction

The execution of budgets and accountability are crucial for efficient public administration, especially in developing countries such as Nigeria. The budget serves as a financial blueprint for resource allocation and turning policies into outcomes; however, ongoing problems—like corruption, poor oversight, and institutional inefficiency—diminish its efficacy. Research (Faleti & Myrick, 2012; Husen, Bailusy & Hadady, 2022) indicates that slow fund distribution, insufficient oversight, and weak internal controls obstruct budget objectives and create worries regarding fiscal responsibility. Accountability, which refers to public officials' obligation to explain their decisions and actions, is heavily dependent on robust audit and control systems (Achmad, 2017); however, Nigeria faces challenges in implementing these mechanisms. Despite the opportunities presented by global reforms and accounting innovations (Alsharari, 2016), adoption continues to be uneven because of resistance and capacity deficiencies. Poor budget execution in essential

areas such as infrastructure, education, and healthcare exacerbates socio-economic disparities. This research analyzes the connection between budget implementation and accountability within Nigeria's public sector and suggests ways for enhancement.

### Objectives of the Study

The broad objective of this research is to determine the effects of budget execution and accountability in Nigerian Public Administration, a vital sector that significantly influences the effectiveness of governance and the delivery of public services.

Other objectives include to;

- i. grasp the reasons behind budgetary breakdowns and accountability issues in Nigerian Public Administration.
- ii. determine the connection between budget execution and responsibility in Nigerian Public Administration.
- iii. analyze the characteristics of budget execution and responsibility particularly within the Nigerian public administration system.

iv. propose and indicate feasible methods to enhance budgeting and accountability in public administration in Nigeria.

### **Research Hypothesis**

The examination of budget execution and accountability in Nigerian public administration requires specific and rigorous research hypotheses that analyze the intricacies involved in financial management systems and the elements affecting efficient accountability practices. The research hypotheses is;

i. There is no significant relationship between budget implementation and accountability in Nigerian Public Administration.

### **Significance of the Study**

This research is important as successful budget execution and accountability are essential for handling public resources, enhancing transparency, and rebuilding public confidence in governance in Nigeria. Poor accountability frequently leads to corruption and poor management, while improving it boosts service delivery, institutional honesty, and effective governance. The study offers evidence-backed insights to inform policy changes and enhance capacity in public administration, aiding current initiatives aimed at strengthening financial management and accountability systems in Nigeria.

### **Scope/Limitations of the Study**

This research on "Budget Execution and Responsibility in Nigerian Public Administration" explores the procedures, difficulties, and results of budget implementation in the public sector. It assesses the conversion of sanctioned budgets into initiatives, emphasizing responsibility, openness, effectiveness, and the influence of socio-political, economic, and institutional factors. The study additionally examines human and organizational capabilities, financial management frameworks, and the precision of budget objectives in influencing successful execution.

Nonetheless, the research has constraints. Variations in financial practices among federal, state, and local governments might influence the applicability of findings. Restricted access to dependable public financial information and differing reporting standards also hinder precision. Methodologically, relying on cross-sectional and case study methods limits long-term understanding, given the lack of historical data. Consequently, the research highlights recent financial periods, offering timely insights yet not entirely longitudinal views

### **Operational Definition of Terms**

In the scope of this study regarding Budget Implementation and Accountability in Nigerian Public Administration, it is essential to define the key terms to promote conceptual clarity and enable precise analysis. These operational definitions are based on pertinent academic discussions to place the study within current literature and establish a basis for empirical investigation.

### **Budget Implementation**

Budget Implementation involves the processes associated with planning financial resources, as outlined in the sanctioned budget, execution, and oversight to meet established government goals. This procedure involves the distribution, expenditure, and application of funds in accordance with budgetary guidelines and regulations.

### **Accountability**

Accountability in Nigerian public administration, as defined for this study, pertains to the obligation of public officials and government entities to clearly report, clarify, and justify their financial choices and actions to stakeholders, encompassing the public, legislative bodies, and oversight organizations.

### **Public Administration**

In this research context, Public Administration denotes the organizational and managerial systems utilized for executing government policies and providing public services. It includes the frameworks, procedures, and staff engaged in the planning, implementation, and assessment of governmental activities at different tiers—federal, state, and local—in Nigeria.

### **Literature Review**

#### **The Concept of Budget**

Budgeting is an essential management instrument that acts as a financial plan for organizations in both the public and private sectors. It represents an assessment of income and costs during a defined timeframe, allowing organizations to distribute resources effectively and strategically (Boghean, Hlaciuc, Moroşan-Dănilă, & Boghean, 2009). In public administration, budgeting goes beyond simple financial planning to serve as a tool for executing policies and governance. According to Shu-xian (2008), financial management in administrative entities includes both budget creation and compliance with financial procedures that promote transparency and accountability. This combined emphasis on planning and control is essential for grasping

budget execution within Nigerian public administration, where fiscal discipline meets governance.

### **Importance of Budgeting**

Effective budgeting is essential for maintaining financial stability and enhancing organizational competitiveness. Danuletiu and Danuletiu (2008) contend that a successful budget preserves financial equilibrium and guarantees that resources are utilized to fulfill organizational objectives. In the public sector, this means providing services and meeting governmental requirements. Moreover, as Bin (2004) observes, well-organized financial management within institutions, including healthcare and administrative organizations, improves operational effectiveness and accountability. Therefore, a clearly defined budget serves as a guide that directs not just financial choices but also policy focuses, influencing the overall effectiveness of public administration.

### **Causes of Budgeting Failure**

Although budgeting plays a crucial role, failures in its implementation are common, especially in public administration settings like Nigeria. Various elements lead to these failures, including inadequate financial management, insufficient transparency, and institutional shortcomings. Shu-xian (2008) points out that shortcomings in administrative financial systems frequently result in poor resource allocation and inefficient program implementation. In the same way, Boghean et al. (2009) highlight governance issues, such as insufficient oversight and decision-making procedures that weaken the aims of budgetary policies. These failures are exacerbated by corruption, political meddling, and inadequate capacity within public institutions, which together hinder effective budget execution.

### **The Budgeting Process and Its Implementation in Nigeria's Public Administration**

The budgeting process in Nigerian public administration involves several stages, such as budget preparation, approval, implementation, and assessment. Nonetheless, practical evidence indicates that the execution stage is filled with difficulties. Dao-liang (2004) offers perspectives on financial software tools that may improve budgeting procedures by enhancing data management and increasing transparency. However, the Nigerian public sector frequently faces delays, insufficient funding, and bureaucratic obstacles that hinder efficient implementation. Shu-xian (2008) indicates that failure to follow financial management

principles during implementation stages worsens inefficiencies, emphasizing the necessity for systemic reforms that incorporate technology and strong governance structures

### **Accountability in Nigerian Public Administration**

Accountability continues to be a fundamental aspect of effective public administration, guaranteeing that public officials are responsible for their financial choices and actions. In Nigeria, accountability systems aim to enhance transparency and deter the misuse of public funds. Boghean et al. (2009) suggest that decision-making procedures in corporate governance structures offer valuable comparisons for public administration, highlighting the significance of accountability and supervision. Furthermore, Bin (2004) highlights the importance of financial transparency in healthcare institutions as indicative of wider public sector accountability issues. Nevertheless, the public administration in Nigeria suffers from ongoing challenges of inadequate enforcement, restricted audit capabilities, and political favoritism that undermine accountability initiatives.

### **The Relationship between Budget Execution and Accountability in Nigerian Public Administration**

The connection between budget execution and accountability is essential for making sure that designated resources result in expected results. Budget execution acts as a tangible expression of fiscal responsibility, requiring public officials to allocate resources in line with sanctioned strategies. Danuletiu and Danuletiu (2008) emphasize that financial equilibrium can be attained only when budget execution corresponds with accountability systems that oversee and assess spending. In Nigeria, this relationship is frequently undermined by systemic governance failures and insufficient institutional oversight (Boghean et al., 2009). Effective accountability systems act as facilitators for successful budget execution, fostering fiscal responsibility and public confidence

### **The Nature of Public Administration in Nigeria**

Public administration in Nigeria functions within a complicated socio-political landscape marked by systemic vulnerabilities, bureaucratic stagnation, and regular policy shifts. The governance framework frequently faces issues due to corruption, insufficient human resources, and disjointed institutional structures. Public administration serves as the tool and medium of

government, consistently molded, limited, and affected by political, economic, cultural, and environmental elements, which influence service provision and efficient governance (Mukoro, 2011). Shu-xian (2008) notes that the administrative system faces challenges in applying financial regulations and complying with budgetary requirements. These difficulties are worsened by political meddling, which often interrupts the continuity and efficiency of public initiatives (Boghean et al., 2009). Grasping these contextual facts is crucial for recognizing the complexities of budget execution and responsibility in Nigerian public management. Okereka (2015) defined public administration as the organized framework of governmental functions and management of personnel, especially at the local level, where its success depends on collaboration between departments, staff development/training, and reducing political interference to guarantee effective service delivery and performance of public enterprises.

### **Empirical Study of Budget Implementation and Accountability in Nigerian Public Administration**

Research on Nigerian public budgeting indicates a trend of budget overruns, delays in implementation, and a lack of accountability. Dao-liang (2004) illustrates that distributed financial software systems might enhance budget monitoring and accountability while pointing out their minimal use in Nigeria. Research also shows that regular variations from sanctioned budgets and insufficient auditing processes lead to negative financial results (Danuletiu & Danuletiu, 2008). These practical findings emphasize the disparity between budgeting theory and actual practice in Nigeria, highlighting the pressing necessity for organized reforms and capacity-building initiatives to improve budget effectiveness and public accountability.

### **Theoretical Framework**

Budget execution and accountability in Nigeria can be explained through multiple theories.

1. Principal-Agent Theory: Explains the government-administrator relationship, stressing issues of corruption, poor oversight, and the need for strong accountability (Adewale & Onakoya, 2021).
2. New Public Management (NPM): Promotes efficiency and private-sector methods. In Nigeria, adoption remains partial due to bureaucracy and patronage (Ibrahim & Mohammed, 2022).
3. Institutional Theory: Shows how weak structures, conflicting roles, and cultural

influences hinder accountability, calling for reforms (Chukwuemeka & Okeke, 2023).

4. Public Choice Theory: Views officials as self-interested, often engaging in rent-seeking. Incentives must align with public goals (Ezeani & Okafor, 2020).

5. Accountability Theory: Highlights officials' duty to justify resource use. Weak audits and low political will weaken accountability (Olusegun & Adebayo, 2019).

6. Systems Theory: Sees budgeting as interconnected; flaws at any stage harm outcomes, requiring holistic reform (Chukwuemeka & Okeke, 2023).

7. Fiscal Federalism: Examines fiscal roles across government tiers. In Nigeria, overlapping powers and transfers create inefficiency (Nwosu & Eze, 2021).

Together, these theories show that Nigeria needs integrated reforms to strengthen transparency, efficiency, and accountability (Erude & Mark, 2023).

### **Overview of Budget Implementation in Public Administration**

Budget execution translates plans into spending and services. In Nigeria, it is hampered by weak accountability, poor institutions, and political interference.

The knowledge economy and digital tools improve monitoring and transparency (Shi, 2000; Muhamad et al., 2024). Financial literacy and ethics among officers shape outcomes, while weak capacity fosters mismanagement (Farooq et al., 2021). Institutional bottlenecks and lack of trust hinder performance (Arifin, 2017).

Strong monitoring and evaluation—through audits and disclosures—are vital but often absent (Ferreira, 2015). Finally, civic participation in budget oversight strengthens democratic accountability and reduces corruption (Pp & Supriya, 2021).

In sum, Nigeria's budget execution depends on technology, financial skills, strong institutions, monitoring, and citizen involvement to ensure transparency and fiscal discipline.

### **Research Method**

This research utilizes a mixed-method design, combining qualitative and quantitative techniques. Information was obtained from both primary and secondary sources. The survey approach was employed, and questionnaires were distributed to public employees in higher education institutions. A total of 200 surveys were distributed utilizing the simple random sampling method. A 5-point Likert scale was used to assess responses. Hypothesis testing was conducted using the Statistical Package for the Social Sciences (SPSS). Mean scores and

Pearson Correlation Analysis were utilized to investigate the relationship between the variables, specifically budget implementation (independent variable) and accountability (dependent variable). Additionally, historical and content analyses were performed, utilizing pertinent journals, both published and unpublished books, along with other academic resources.

## Data Presentation and Analysis

### Introduction

This section presents the analysis of data collected from the field survey and secondary sources. The analysis is organized into four sections. First, the demographic characteristics of respondents are presented. Second, descriptive statistics of the major study variables are reported. Third, the hypothesis of the study is tested using the Pearson correlation technique in SPSS. Finally, insights from qualitative (content and historical) analysis are integrated to strengthen the interpretation of findings.

### Demographic Characteristics of Respondents

Out of the 200 questionnaires distributed, 180 were duly completed and returned, representing a response rate of 90%. The demographic profile of respondents is shown in Table 1.

Table 1 shows that male respondents constituted 60% while female respondents accounted for 40%. This indicates that although the sample was male-dominated, there was still a fairly balanced gender distribution. With respect to age, 35% of respondents were between 25–35 years, 40% were aged 36–45 years, while 25% were above 46 years. This suggests that the study captured a wide spread of both early-career and experienced public servants.

Regarding years of service, 20% of respondents had worked for less than five years, 35% had between six and ten years of service, and 45% had more than ten years of work experience. This distribution indicates that the respondents were generally well-informed and experienced enough to provide reliable information on the study variables.

### 4.3 Descriptive Statistics of Study Variables

To assess the central tendency and spread of responses on the key variables, descriptive statistics were computed. Table 2 summarizes the mean scores, standard deviations, and range of responses for budget implementation and accountability.

The results reveal that respondents generally agreed that budget implementation is being practiced to a reasonable extent in their institutions ( $M = 3.85$ ,  $SD = 0.94$ ). Similarly, accountability also received high ratings ( $M = 4.02$ ,  $SD = 0.88$ ). Since the maximum possible

score on the scale was 5, these means suggest that respondents perceived both budget implementation and accountability positively.

### Hypothesis Testing

The main hypothesis of the study was tested using the Pearson correlation coefficient in SPSS. The hypothesis was stated as follows:

#### Hypothesis 1

$H_0$ : There is no significant relationship between budget implementation and accountability in Nigerian public administration.

$H_1$ : There is a significant relationship between budget implementation and accountability in Nigerian public administration.

The result of the correlation analysis is presented in Table 3.

The Pearson correlation coefficient between budget implementation and accountability was found to be  $r = .624$ ,  $p < .001$ . This indicates a moderate positive and statistically significant relationship between the two variables. In practical terms, this finding suggests that improved budget implementation is associated with greater accountability in tertiary institutions. Therefore, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted.

### Regression Analysis

A simple linear regression was conducted to predict accountability from budget implementation. Results indicated that budget implementation significantly predicted accountability,  $F(1,178) = 114.996$ ,  $p < .001$ , with an  $R^2$  of .389. This suggests that approximately 39% of the variance in accountability can be explained by budget implementation. The regression equation was found to be:  $\text{Accountability} = 1.589 + 0.632(\text{Budget Implementation})$ .

### Qualitative (Content and Historical) Analysis

To complement the quantitative analysis, content and historical analysis were conducted using relevant literature, journals, books, and reports. The qualitative findings are consistent with the survey results. Several authors have argued that poor budget execution undermines accountability and transparency in the Nigerian public sector (Adegite, 2010; Mukoro, 2021). Conversely, effective budget monitoring and implementation enhance trust in public institutions and strengthen democratic governance.

Historically, weak budgetary practices and delays in implementation have contributed to wastage, leakages, and inefficiency in Nigeria's public administration. These challenges have often resulted in low accountability, particularly

in the management of public funds within tertiary institutions. The evidence from content analysis therefore reinforces the conclusion that budget implementation is a key determinant of accountability.

### Summary of Findings

The analysis yielded the following key findings:

1. The demographic profile showed a diverse and experienced group of respondents across gender, age, and years of service.
2. Descriptive statistics revealed that respondents rated both budget implementation and accountability relatively high.
3. Pearson correlation analysis demonstrated a significant positive relationship between budget implementation and accountability ( $r = .624$ ,  $p < .001$ ).
4. Qualitative evidence from historical and content analysis supported the statistical results, confirming that ineffective budget implementation negatively affects accountability in Nigerian public administration.

### Conclusion

This chapter presented the results of both quantitative and qualitative analyses. The findings demonstrate that budget implementation is significantly related to accountability in Nigerian tertiary institutions. The next chapter discusses these findings in relation to the literature reviewed and the theoretical framework of the study.

### Recommendations

Below are recommendations for this study:

#### Institutionalize Digital Public Financial Management (PFM) Systems

The Nigerian government ought to require the implementation of comprehensive digital financial management systems (e.g., Integrated Financial Management Information Systems – IFMIS) throughout federal, state, and local government levels. This will guarantee immediate budget oversight, limit losses, and lower chances for deceit. To enhance transparency, these systems ought to be connected with open-data portals enabling citizens, civil society, and oversight bodies to monitor budget allocations and spending in real time.

#### Strengthen Independent Oversight and Accountability Mechanisms

Accountability demands rigorous implementation. Consequently, anti-corruption bodies, the Auditor-General's Office, and Public Accounts Committees within legislative bodies need to be granted legal, financial, and

operational autonomy. Moreover, budget performance audits ought to be performed every three months, with reports available to the public. Implementing compulsory penalties (legal and administrative) for the misuse or failure to adhere to budgetary regulations will act as a deterrent against fiscal irresponsibility.

#### Capacity Building and Professionalization of Public Financial Managers

Human capital is crucial to budget responsibility. Therefore, ongoing capacity building initiatives for public officials in budget formulation, implementation, oversight, and assessment must be established as a standard practice. The government ought to enhance the professionalism of public financial management positions by implementing merit-based hiring, minimizing political influence, and establishing performance-driven rewards. This will guarantee that the administrators in charge of budget execution are competent, ethical, and answerable to the public good.

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## Appendix

**Table 1**

**Demographic Characteristics of Respondents (N = 180)**

| <b>Gender</b>           | <b>Male</b>               | <b>108</b> | <b>60.0</b> |  |  |
|-------------------------|---------------------------|------------|-------------|--|--|
|                         | <b>Female</b>             | <b>72</b>  | <b>40.0</b> |  |  |
| <b>Age Range</b>        | <b>25–35 years</b>        | <b>63</b>  | <b>35.0</b> |  |  |
|                         | <b>36–45 years</b>        | <b>72</b>  | <b>40.0</b> |  |  |
|                         | <b>46 years and above</b> | <b>45</b>  | <b>25.0</b> |  |  |
| <b>Years of Service</b> | <b>Less than 5 years</b>  | <b>36</b>  | <b>20.0</b> |  |  |
|                         | <b>6–10 years</b>         | <b>63</b>  | <b>35.0</b> |  |  |
|                         | <b>Above 10 years</b>     | <b>81</b>  | <b>45.0</b> |  |  |

Source: (SPSS, 2025)

**Note.** Frequencies and percentages are based on valid responses.

**Table 2**

**Descriptive Statistics of Study Variables**

| <b>Budget Implementation</b> | <b>180</b> | <b>3.85</b> | <b>0.94</b> | <b>1.00</b> | <b>5.00</b> |
|------------------------------|------------|-------------|-------------|-------------|-------------|
| <b>Accountability</b>        | <b>180</b> | <b>4.02</b> | <b>0.88</b> | <b>2.00</b> | <b>5.00</b> |

Source: (SPSS, 2025)

**Note.** M = Mean, SD = Standard Deviation. Responses measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

**Table 3**

**Pearson Correlation between Budget Implementation and Accountability (N = 180)**

|                              |               |               |
|------------------------------|---------------|---------------|
| <b>Budget Implementation</b> | <b>1.000</b>  | <b>.624**</b> |
| <b>Accountability</b>        | <b>.624**</b> | <b>1.000</b>  |
| <b>Sig. (2-tailed)</b>       | <b>—</b>      | <b>.000</b>   |
| <b>N</b>                     | <b>180</b>    | <b>180</b>    |

Source: (SPSS, 2025).

**Note.** \*\* Correlation is significant at the 0.01 level (2-tailed).

**Table 4**

**Model Summary**

|          |             |             |             |             |
|----------|-------------|-------------|-------------|-------------|
| <b>1</b> | <b>.624</b> | <b>.389</b> | <b>.385</b> | <b>.691</b> |
|----------|-------------|-------------|-------------|-------------|

Source: (SPSS, 2025)

**Note.** R = correlation between observed and predicted values. R<sup>2</sup> = proportion of variance explained.

**Table 5**

**ANOVAa**

| ANOVAa     |                |     |             |         |       |
|------------|----------------|-----|-------------|---------|-------|
|            | Sum of Squares | df  | Mean Square | F       | Sig.  |
| Regression | 54.901         | 1   | 54.901      | 114.996 | .000b |
| Residual   | 86.159         | 178 | 0.484       |         |       |
| Total      | 141.060        | 179 |             |         |       |

Source: (SPSS, 2025)

**Note.** a. Dependent Variable: Accountability. b. Predictors: (Constant), Budget Implementation.

**Table 6**  
**Coefficients<sup>a</sup>**

|                              |              |              |             |               |             |
|------------------------------|--------------|--------------|-------------|---------------|-------------|
|                              |              |              |             |               |             |
| <b>Constant</b>              | <b>1.589</b> | <b>0.214</b> | <b>—</b>    | <b>7.422</b>  | <b>.000</b> |
| <b>Budget Implementation</b> | <b>0.632</b> | <b>0.059</b> | <b>.624</b> | <b>10.724</b> | <b>.000</b> |

**Note.** a. Dependent Variable: Accountability.



## Building Entrepreneurial Mindset through Entrepreneurship Education for Youth Engagement

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### Abstract

*In today's rapidly evolving digital world, cultivating an entrepreneurial mindset is increasingly recognized as crucial to fostering innovation and promoting youth engagement. Nevertheless, many youths still find it difficult to cultivate the entrepreneurial mindset required to recognize and seize opportunities successfully. How to successfully guide young people's thinking, nurture them, harness their energy and potential, and meaningfully incorporate them into the national development planning is one of the fundamental difficulties that governments around the world and at all levels of governance face. This study examined the influence of entrepreneurship education in building entrepreneurial mindset for youth engagement among the past students of University of Ibadan (UI) who took Entrepreneurship Education course. The course is meant to fill the gap between entrepreneurship education and ability of youths to be engaged in entrepreneurial activities. In order to develop their entrepreneurial mindset, the students came up with a lot of entrepreneurial and innovative ideas in class; however, a post-graduation review established the course's impact. Google Forms was used to survey former University of Ibadan students who had completed the entrepreneurship education course. The results demonstrated that entrepreneurship education as delivered through the course has significant and considerable influence on entrepreneurial mindset and youth engagement of university students, hence, should be retained in nurturing and mentoring the youth.*

**Keywords:** youth engagement, entrepreneurial mindset, entrepreneurship education, innovation, entrepreneurial activities.

### Introduction

Entrepreneurial processes have an important role in developing youth-related opportunities and converting youth engagement into youth employment and empowerment, therefore creating an environment suitable for long-term development (Roshanaei, 2020). Growing young unemployment affects a country's economic stability and sustainability. Countries with a large proportion of young people, such as Nigeria, are particularly vulnerable (Nweke, 2020). In recent years, the entrepreneurial mindset has received a lot of attention in the global discourse about youth development, especially in terms of motivating innovation, economic growth, and job creation (Regan *et al.*, 2024). The importance of entrepreneurship in helping young people tackle the

enduring problems of poverty, underemployment, and unemployment is becoming more widely acknowledged (Faridah *et al.*, 2023).

Youth unemployment and low income can present serious obstacles to the welfare of the community. A number of strategies and policies have been introduced by several governments in an effort to create jobs and improve the skills of young people, acknowledging that youth unemployment is a serious issue that requires prompt response (Himani, 2024). As other nations have paid much attention to entrepreneurship in recent decades, Nigeria has also witnessed and demonstrated a great deal of interest in a variety of entrepreneurship-related disciplines, including business, policymaking, and higher education (Nweke, 2020). As a result, policies and

procedures have been rolled out to encourage entrepreneurship in both the public and private sectors as well as in academic institutions.

The Federal Government of Nigeria, through the National Universities Commission, established an Entrepreneurship Education course within general studies programs that is required for all undergraduate students in the nation due to the significance and function of entrepreneurship in the economy (Brownson, 2015). It is thought to make it easier for people to establish positive mindset about entrepreneurship and its education. Through both formal and informal learning processes, educational institutions are essential in helping students develop an entrepreneurial mindset (Njoku & Isigwe, 2019). Entrepreneurship education, which is increasingly being integrated into university curricula, aims to provide students with the skills, information, and mindsets required for entrepreneurial activity (Ogunwoye, Laosebikan & Ojokuku, 2024). Almahry *et al.*, 2020; Fayolle and Gailly, 2014) assert that entrepreneurship education develops creativity, critical thinking, and problem-solving skills in addition to business-related knowledge, all of which are necessary for identifying opportunities. The development and use of an entrepreneurial mindset and abilities in the particular settings of starting a new business, expanding an existing one, or creating an entrepreneurial organization are the main goals of entrepreneurship education (Eastburn & Sharland, 2017). It seeks to produce graduates who can act on identified needs and gaps and who have the mindset and abilities to generate novel ideas in response to them. To put it briefly, seeing an idea through to completion. Initiative, intuitive decision-making, action, networking, opportunity recognition, innovative problem-solving, strategic thinking, and individual efficacy are all examples of entrepreneurial skills and mindset (Santhosha, Vikram. & Mathew (2024). Entrepreneurship education encompasses a broad spectrum of practical, intellectual, social, and emotional abilities in addition to knowledge acquisition (Njoku & Isigwe, 2019). The goal of entrepreneurship education is to create graduates who can recognize opportunities and launch businesses (Nweke, 2020).

As the youth population grows, focusing on their engagement in the broader entrepreneurial policy agenda is not only relevant, but also crucial (Winkler, Fust, & Jenert, 2023). Young people face specific problems that may limit their ability to contribute to economic growth. These limitations frequently result in their exclusion from meaningful involvement in both national and global economies. However, entrepreneurship provides a potent remedy by giving young people the freedom to experiment and create their own creative ideas in addition to providing them with financial prospects (Toth-Pajor, Bedo & Csapi, 2023).

The current global demographic situation provides an unprecedented opportunity for governments to capitalize on youth-led innovation (Tang, Baron & Yu, (2023). We are witnessing the creation of the largest youth population in history, which presents an exceptional opportunity to engage this dynamic part of society and turn their creativity into a force for economic revolution. Being the generation that is growing up in a time of rapid digitalization and climate change, today's youngsters have the distinct viewpoints required to tackle some of the most important issues facing the globe (Himani, 2024). As a result, we must encourage them to pursue their entrepreneurial dreams. We can stimulate economic diversification and job creation by engaging and empowering young entrepreneurs, particularly in low-income nations where traditional employment possibilities may be scarce.

Youth engagement through entrepreneurship is much more than a social effort; it is a significant driver of economic growth, particularly in low-income countries (Roshanaei, 2020). It also discusses global and local issues. We see this in young entrepreneurs who are at the forefront of green and social entrepreneurship, addressing issues such as climate change and sustainability through agro-preneurship and other businesses. These businesses are not just successful, but also purpose-driven, with a focus on long-term development and community welfare (Tang, Baron, & Yu, 2023).

One of the most fundamental difficulties confronting governments around the world and at all levels of government is how to effectively direct the mindset of young people, nurture them, harness their potentialities and dynamism and meaningfully incorporate them into national development architectures (Clementine *et al.*, 2020). Youth's innate tendency for innovation and change makes them ideal candidates for entrepreneurship, as long as the community provides them with the necessary support to overcome obstacles and increase their chances of success (Manseur, 2024). Youth entrepreneurship helps a city's economic development by creating jobs, innovating products and services, increasing market competitiveness, revitalizing communities, and generating income (Altin, Suat, & Ardita 2024).

An entrepreneurial mindset, which includes creativity, risk-taking, resilience, and the ability to identify and capitalize on opportunities, has been identified as critical for promoting youth entrepreneurship and engagement (Nkese, Emmanuel, & Unyime, 2024). Nigeria has launched a number of initiatives to promote entrepreneurship, including innovation hubs, company incubators, and mentorship programs that connect students with industry experts and successful entrepreneurs (Emmanuel, Mbongeni, & Mushaisano, 2025). Despite these efforts, many students continue to struggle to cultivate and develop the entrepreneurial mindset required to effectively

recognize and capitalize on opportunities (Rafiati & Politeknik, 2022). While entrepreneurship education has been integrated into many university courses, research shows that not all students actively participate in entrepreneurial activities or gain the crucial skills required for recognising feasible company possibilities (Ewa, 2024). The disconnect between entrepreneurial education and the actual development of entrepreneurial mindset raises concerns about the efficacy of current tactics for developing entrepreneurial mindsets among young people in higher education (Martinez-Gregory, Badenes-Riberi & Oliver, 2021).

Furthermore, it is also unknown if students have the skills to turn their entrepreneurial ideas into profitable businesses and how much their mindsets conform to entrepreneurial concepts. Using university students who completed the entrepreneurship course as a case study, this study aims to close this gap by investigating the connection between youth engagement, entrepreneurship education, and entrepreneurial mindset.

## Literature Review

### Conceptual Review of Literature

The entrepreneurial mindset enables people to identify and pursue opportunities, handle uncertainty, take calculated risks, and conquer challenges (Dapis, Fox & Findley, 2023). Entrepreneurial mindset is a collection of attitudes, beliefs, and actions that allow people to recognize, evaluate, and pursue opportunities in dynamic and frequently uncertain contexts (Ngele, 2023). It involves traits such as resilience, creativity, proactivity, risk-taking, and a strong drive for achievement, all of which are crucial in navigating the complex landscape of entrepreneurship (Rafiati & Politeknik, 2022). Entrepreneurial mindset is simply the way an entrepreneur thinks and behaves. Fundamentally, an entrepreneurial mindset involves traits, actions, and abilities that motivate people to take action. And someone with an entrepreneurial mindset sees an opportunity that would otherwise go unnoticed, gains the courage to take a chance, expresses their ideas clearly, and can adapt to and grow from setbacks (Li, Cao & Jenatabadi, 2023).

Youth engagement entails taking an active role in identifying their strengths, abilities, and talents as well as contributing to the solution of social issues (Musiimenta, Arinaitwe & Irumba, 2024). Any time a young person establishes a long-lasting connection to the world around or within themselves, that is considered youth engagement (Foncha, Ngouafo, & Budi, 2024). Youth engagement was defined as a young person's prolonged and meaningful involvement in an activity that has a focus outside of themselves. Empowering young people entails developing and maintaining the conditions that allow young people to act on their own behalf and on their own terms, rather than being directed by others.

Youth empowerment is an attitudinal, structural, and cultural process in which young people gain the ability, authority, and action to make decisions and effect change in their own lives as well as the lives of others, including youth and adults (Odoh, & Eme, 2014). Youth disengagement has a wide-ranging impact on corporations, philanthropies, organizations, schools, and governments, as well as families, neighbourhoods, and communities (Keerthiga, 2025). Entrepreneurship education provides students with the additional knowledge, qualities, and capabilities needed to apply entrepreneurial skills in the context of starting a new endeavours or firm (Almahry *et al.*, 2020). All of these are necessary for entrepreneurial mindset. Entrepreneurship education refers to activities that attempt to create enterprising or entrepreneurial individuals by enhancing their understanding and expertise of entrepreneurship and enterprise (Burhanudin, Sojanah & Utama, (2025). Entrepreneurship education is a systematic training and instruction that imparts entrepreneurial knowledge and skill development to students. Entrepreneurship education therefore aims to influence entrepreneurial mindset in the desired way. As a result, it is a continuous development of relevant entrepreneurial skills and habits whose comprehension and application allows students to contribute meaningfully to the growth and development of the Nigerian economy (Osadebe *et al.*, 2025).

## Theoretical Framework

### Self-theories of Entrepreneurial Mindset

Dweck & Johnson (2009) created two self-theories of intelligence that provide insight into the psychological (motivational) processes required for success. They argued that people had either an entity theory of intelligence (fixed mindset) or an incremental theory of intelligence (growth mindset). Individuals with a fixed mindset believe that their intelligence, abilities, talents, and characteristics are permanent and immutable. They also imply that a person's capacity stems from their innate abilities rather than their gradual acquisition of new skills through education, and as a result, they give up or deteriorate when faced with obstacles. According to Dweck & Johnson (2009), people with a fixed mindset and poor self-esteem often establish low performance goals, which leads them to react to difficulties in a helpless way, which is a pattern of typical mindset, thoughts, and emotions.

On the other side, those who have a growth mindset prefer to adopt learning goals and feel that learning is the reason for one's ability and success. They also believe that intellect can alter and expand with effort, and they believe in trying other ways or asking for help when faced with challenges. These people, who are either highly or lowly confident, focus on learning new concepts and react with a typical pattern of thoughts, behaviours, and feelings in

whatever circumstance they encounter (Chapman, 2021). This is justified by the fact that the majority of successful great company executives possessed a growth mindset, which is necessary for creating and sustaining outstanding organizations in the face of ongoing change (Dweck, & Johnson, 2009).

### **Empirical Literature Review**

In order to promote creativity in the present era, Singh and Himani's (2024) study examined the significance of cultivating an entrepreneurial mindset. It examined the ways in which individuals and institutions might leverage entrepreneurial concepts to surmount ambiguity, seize chances, and adapt to the swift advancement of technology. Using multidisciplinary perspectives from the domains of technology, psychology, and entrepreneurship, this study investigates the traits of an entrepreneurial mindset. It also discusses how to promote an entrepreneurial mindset in a range of contexts, including the workplace, the community, and educational institutions. This aims to clarify how an entrepreneurial mindset is necessary to promote innovation and provide tactics for people and businesses to thrive in the quickly evolving digital landscape.

Ullah & Bamber (2024) conducted a study by developing a survey instrument based on established models and scales, including Hofstede's cultural indices, Rotter's I-E scale, Jackson's personality assessment, entrepreneurship scales, ensuring the validity and reliability of the research methods. A varied sample of potential and existing entrepreneurs in the UK and Bangladesh received survey questionnaires in both offline and online formats. To establish sample uniformity across each nation, a combination of emic and etic approaches were used. A total of 388 useful survey responses were examined, with 171 from the United Kingdom and 217 from Bangladesh. The sample size proved acceptable, allowing for various statistical analysis procedures and producing statistically significant results.

The gathered data went thorough statistical studies, including regression and multivariate analysis, to uncover the important entrepreneurial traits, factors, motives, and barriers in each country. The findings revealed that culture, institutional aid, and personal strength all have a significant impact on practicing/active entrepreneurs, with work flexibility and administrative regulations predicting entrepreneurial abilities in an interesting way. According to the comparative analysis, the UK group scored better on perceived risk-taking, innovativeness, and accomplishment needs, but the Bangladesh group displayed a strong sense of control and self-confidence.

Investigating the cross-national drivers of an entrepreneurial mindset, with individual entrepreneurial traits analyzed in light of self-

perceived contextual factors relating to economic, institutional, and cultural contexts, yield findings that are consistent with known entrepreneurship theories. According to the results, risk-taking, self-confidence, accomplishments, and aggressiveness in competitive settings are all significantly impacted by knowledge, and experience, as well as by the economic climate, administrative expenses and regulations.

The goal of a study by Muhammad & Henry (2024) was to shed light on the significant connection between young people at Makerere University in Uganda's entrepreneurial mindset and their ability to recognize opportunities. With a high response rate of 95%, the study used a descriptive cross-sectional design to gather primary data from a sample of 400 students at Makerere University studying a variety of academic subjects. With a mean score of 4.3 out of 5, the quantitative data analysis showed that more than 65% of respondents thought they had an entrepreneurial mindset, as demonstrated by qualities like originality and invention. Additional statistical analysis revealed a somewhat favourable correlation of 0.56 between opportunity identification and entrepreneurial mindset, suggesting that people with more entrepreneurial tendencies were more likely to identify promising business opportunities. Entrepreneurial mindset qualities accounted for 48.2% of the variance in opportunity identification, with innovation ( $\beta = 0.456$ ) and creativity ( $\beta = 0.289$ ) being the most significant predictors. Logistic regression revealed that students who scored high on creativity were roughly three times more likely to find an opportunity than their less creative counterparts. Regarding educational influences, regression analysis indicated entrepreneurial training and education together accounted for 33.7% of the variance in entrepreneurial mindset scores, underscoring the vital role of university programs in shaping students' entrepreneurial tendencies.

An examination of demographic variables found that age had a substantial effect on mindset, with older students displaying slightly higher entrepreneurial characteristics. Furthermore, significant gender disparities were observed, with male youths scoring higher in mindset than females. Academic discipline was also important, with business-oriented individuals demonstrating stronger entrepreneurial impulses. The findings made concrete recommendations, highlighting the importance of experiential learning at Makerere University, prioritizing multidisciplinary entrepreneurial education, and implementing targeted gender initiatives to build a more equitable entrepreneurial culture. By strategically focusing on the development of their entrepreneurial attitude, the study provides important insights on how to foster opportunity identification skills in young people in higher education settings. Such findings can significantly aid initiatives to foster entrepreneurial skills and

combat unemployment in Uganda with additional development and scale.

The significance of cultivating an entrepreneurial mindset in the present day as a way to encourage creativity was examined in a study conducted by Himani (2024). It examines the ways in which individuals and institutions might leverage entrepreneurial concepts to surmount ambiguity, seize chances, and adapt to the swift advancement of technology. Using multidisciplinary perspectives

from the domains of technology, psychology, and entrepreneurship, the study investigates the traits of an entrepreneurial mindset. It also discusses how to promote an entrepreneurial mindset in a range of contexts, including the workplace, the community, and educational institutions. This aims to clarify how an entrepreneurial mindset is critical to creativity and provide tactics for people and businesses to thrive in the quickly evolving digital landscape.

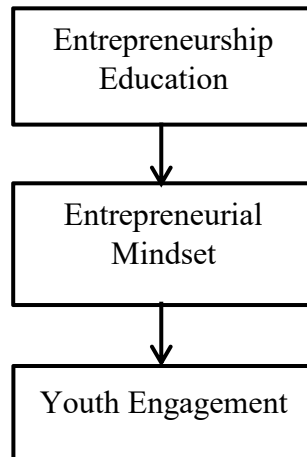


**Figure 1: Conceptual Framework**

This work is based on the above conceptual framework. As presented in figure 1, there is a significant relationship among entrepreneurship education, entrepreneurial mindset and youth engagement. Entrepreneurship education is a prerequisite for building entrepreneurial mindset for youth engagement.

### Methodology

The survey study design was utilized to evaluate the relationship between entrepreneurial mindset and entrepreneurship education for youth engagement among University of Ibadan Basic Entrepreneurship and Innovation (ETR 301) graduates. Former students' email addresses were obtained from the University of Ibadan's Centre for Entrepreneurship and Innovation. The study used all of the email addresses that were submitted as a sample. A digital survey instrument with Likert scales was created using Google Forms. The questionnaire was sent to past students' email addresses, and 167 of them responded. The data were analysed using both

descriptive and inferential statistics. A basic frequency and percentage distribution table was used to assess the demographic data. To determine the effect of an entrepreneurial mindset on youth engagement, the first hypothesis was examined using multiple regression. To determine the relationship between entrepreneurship education and youth engagement, the second hypothesis was examined using Spearman's rank correlation.

### Results and Discussion

This section is separated into two parts. The first section concentrates on the descriptive analysis of data collected using frequency counts and percentage weights. The second section focuses on hypothesis testing with Regression analysis and Spearman's Rank Correlation statistics. The majority of respondents, 99 (59.3%), are male, while 68 (40.7%) are female, as indicated in Table 1. The demographic profile depicts the expected respondents depending on graduation year and duration of the entrepreneurship course.

**Table 1: Demographic Characteristics of Respondents**

| Table 1: Demographic Characteristics of Respondents |           |            |       |
|-----------------------------------------------------|-----------|------------|-------|
|                                                     | Frequency | Percentage | N=196 |
| <b>Gender</b>                                       |           |            |       |
| Male                                                | 99        |            | 59.3% |
| Female                                              | 68        |            | 40.7% |
| <b>Marital Status</b>                               |           |            |       |
| Single                                              | 105       |            | 62.9% |
| Married                                             | 62        |            | 37.7% |
| <b>Age</b>                                          |           |            |       |
| 15-25                                               | 55        |            | 32.9% |
| 26-36                                               | 74        |            | 44.3% |
| 37-47                                               | 32        |            | 19.2% |
| & above 48                                          | 6         |            | 3.6%  |
| <b>Education</b>                                    |           |            |       |
| Undergraduate                                       | 33        |            | 19.8% |
| B.Sc.                                               | 97        |            | 58.1% |
| M.Sc & above                                        | 37        |            | 22.2% |

Source: Response from questionnaire survey, 2025.

**Table 2: Frequency and Percentage of Entrepreneurial Mindset and youth engagement before Entrepreneurship Education QUESTIONS**

|                                                                                             | YES %     | NO %       |
|---------------------------------------------------------------------------------------------|-----------|------------|
| You had the thought of setting up your own business before entrepreneurship education class | 39(23.4%) | 128(76.6%) |
| You had started your business venture before Entrepreneurship Education class               | 61(35.5%) | 106(63.5%) |
| You had knowledge of entrepreneurial skills before Entrepreneurship Education class         | 71(42.5%) | 96(57.5%)  |
| You had orientation about self -employment before Entrepreneurship Education class?         | 37(22.5%) | 130(77.8%) |

Source: Source: Response from questionnaire survey, 2025.

In Table 2, student's entrepreneurial mindset before taking the entrepreneurship course is presented.

**Table 3: Frequency and Percentage of Entrepreneurial Mindset and youth engagement during Entrepreneurship Education**

| Questions                                                                                         |   |    | SD %    | D %     | N %      | A % | SA % |
|---------------------------------------------------------------------------------------------------|---|----|---------|---------|----------|-----|------|
| Entrepreneurship Education introduces business startup ideas to youths.                           | 5 | 4  | 18 3%   | 85 2.4% | 55 10.8% |     |      |
| Entrepreneurship Education helps in building positive entrepreneurial mindset of the youths.      | 4 | 11 | 17 2.4% | 70 6.6% | 65 10.2% |     |      |
| Entrepreneurship Education plays significant role in developing entrepreneurial skills of youths. | 3 | 8  | 16 1.8% | 80 4.8% | 60 9.6%  |     |      |
| Entrepreneurship education introduces opportunity identification process to youths.               |   | 2  | 11 1.2% | 17 6.6% | 76 10.2% | 61  |      |
| Entrepreneurship education teaches youths. how to develop and implement business ideas            | 3 | 7  | 25 1.8% | 79 4.2% | 53 15%   |     |      |
| The teaching of entrepreneurship creates future and effective entrepreneurs                       | 2 | 15 | 20 1.2% | 75 9.0% | 55 12%   |     |      |

Source: Response from questionnaire survey, 2025.

Table 3 shows the youths perception of the entrepreneurship course and its potential impact



**Table 4: Frequency and Percentage of Impact of Entrepreneurial Mindset and youth engagement after Entrepreneurship Education**

| Question                                                                                                                  |            | SD<br>%     | D<br>%      | N<br>%      | A<br>%      | SA<br>% |
|---------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------|-------------|-------------|---------|
| Entrepreneurship classes have fully prepared me for entrepreneurship career.                                              | 7<br>4.2%  | 14<br>8.4%  | 31<br>18.6% | 59<br>35.3% | 56<br>33.5% |         |
| I started my own business due to Entrepreneurship Courses attended.                                                       | 25         | 29<br>15.0% | 39<br>17.4% | 36<br>23.4% | 38<br>21.6% | 22.8%   |
| I was taught how to scan my environment, generate ideas and identify customers' needs in entrepreneurship education class | 13<br>7.8% | 24<br>14.4% | 36<br>21.6% | 44<br>26.3% | 50<br>29.9% |         |
| Entrepreneurship Education has built the confidence to be self-employed in me                                             | 3<br>1.8%  | 11<br>6.6%  | 28<br>16.8% | 58<br>34.7% | 67<br>40.1% |         |

Source: Response from questionnaire survey, 2025.

The impact of the entrepreneurship course on the youths is presented in Table 4.

### Hypotheses Testing

**H<sub>01</sub>:** Entrepreneurial mindset has no significant effect on youth engagement.

**Table 5: Analysis of Variance showing effects of Entrepreneurial mindset has on youth engagement.**

| Model      | Sum of Square | Degree of freedom | Mean Square | F       | Sig.  |
|------------|---------------|-------------------|-------------|---------|-------|
| Regression | 20.829        | 1                 | 20.829      | 186.737 | 0.017 |
| Residual   | 18.404        | 165               | 0.112       |         |       |
| Total      | 39.234        | 166               |             |         |       |

Decision rule: Reject **H<sub>0</sub>**, if the p-value in the analysis of variance table is less than **5%** and accept if otherwise.

Decision: Since the P-value in the ANOVA Table (**0.017**) is less than **5%**, we reject **H<sub>0</sub>**. Therefore, Entrepreneurial mindset has a significant effect on youth engagement.

**H<sub>02</sub>:** There is no significant relationship between entrepreneurship education and youth engagement.

**Table 6: Spearman's Rank Correlation Table**

|                            | Education               | Entrepreneurship Youth engagement |       |
|----------------------------|-------------------------|-----------------------------------|-------|
| Spearman's rho             | correlation coefficient | 1.000                             | 0.029 |
| Entrepreneurship Education | Sig (2-tailed)          |                                   | 0.642 |
|                            | Number of observation   | 167                               |       |
| Youth Engagement           | correlation coefficient | 0.029                             | 1.000 |
|                            | Sig.(2-tailed)          | 0.642                             |       |
|                            | Number of observation   | 167                               |       |

Decision rule: Reject  $H_0$ , if p-value is less than **0.05** and accept if otherwise.

Decision: Since the p-value (**0.029**) of the spearman's rank correlation is less than **0.05**, we reject  $H_0$ . Therefore, there is a statistically significant relationship between entrepreneurship education and youth engagement.

In terms of youth engagement, the estimated results indicated that 76.6% of the respondents had never considered starting a business, while 23.4% had considered doing so prior to taking an entrepreneurship education course. Given that 76.6% of students had never considered starting their own firm before taking an entrepreneurship class, this suggests that entrepreneurial education has had a favourable effect on young people's entrepreneurial mindset. Additionally, 36.5% of the respondents had launched their company prior to taking an entrepreneurship education course, whereas 63.5% had not established any business prior to the course. This suggests that a greater proportion of respondents launched their own businesses following their attendance at an entrepreneurship course.

According to the data, 83.8% of respondents agree that entrepreneurship education teaches and exposes students to business ideas and the process of identifying opportunities, while 5.3% disagree. This suggests a beneficial link between entrepreneurship education, entrepreneurial mindset, and youth engagement. This finding is consistent with past research, such as Muhammad & Henry (2024), who discovered that entrepreneurial education is positively connected to opportunity recognition. The findings also showed that while 13.2% of respondents disagreed with the statement, 77% of respondents agreed that teaching entrepreneurship education produces future and successful entrepreneurs. This suggests a positive relationship between entrepreneurship education and youth engagement with an entrepreneurial mindset, and it is corroborated by research of Roshanaei (2020) that shows a positive relationship between entrepreneurship education and business creation. According to the study's findings, entrepreneurship education is a continuous learning process that promotes the growth

of character traits and abilities that help learners thrive in the business environment.

According to the findings, 68.8% of respondents agree that entrepreneurship education has fully prepared them for their entrepreneurial careers, while 12.6% disagree; this suggests that entrepreneurship education has a positive impact on the development of entrepreneurial mindsets in youths. This is reinforced by Ullah & Bamber (2024) findings, which concluded that entrepreneurship can be taught and that educational programs can positively enhance entrepreneurial mindsets. According to the results, 74.8% of the respondents agreed with the statement that entrepreneurship education has given them the confidence to work for themselves, while 8.4% disagreed. This suggests that entrepreneurship education has helped young people change their mindset and become self-employed. This supports the empirical findings of Himani (2024) that students' entrepreneurial mindset is positively impacted by taking entrepreneurship education courses.

The results also show that 44% of respondents agree with the statement that they started their own business because of entrepreneurship courses they took at the University of Ibadan, while 32.4% disagree. This suggests that a higher proportion of respondents began their own business because of entrepreneurship courses they took. According to the estimated results, just 9.1% of respondents did not launch any business throughout the study period, whereas 90.1% of respondents launched their firm or entrepreneurial endeavours during that time. According to the findings, 27% of respondents obtained their business ideas and entrepreneurial skills from an entrepreneurship education class at the University of Ibadan and the ideas and skills helped in building positive entrepreneurial mindset.

## Conclusion

The results of the empirical study show that entrepreneurship education significantly influences youth's entrepreneurial mindsets. Youth engagement, entrepreneurial mindset, and entrepreneurship education are statistically significantly correlated. The rise of youth-owned entrepreneurial ventures and

entrepreneurship education have a statistically significant link, suggesting a relationship between youth engagement and entrepreneurship education. These connections show how important entrepreneurship education is to entrepreneurship students' and young people's capacity for self-engagement. Entrepreneurship education for university students should continue. In order to prepare for future entrepreneurial activities and prospects, students should take advantage of the chances that entrepreneurship education offers.

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## Cashless Policy and Business Performance of Selected SMES in Auchi Edo State

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### Abstract

*This paper is aimed to examine the relationship between cashless policy and business performance of Selected SMEs in Auchi Edo State. The introduction of the cashless policy in Nigeria is aimed at reducing the reliance on physical cash for transactions and promoting digital payments. SMEs in Nigeria have been found to be more vulnerable to economic shocks and fluctuations in the business environment and understanding the impact of the cashless policy on their performance is crucial to ensuring that these businesses thrive in an increasingly digital economy. The population of this study is two hundred and fifty (250) which include both formally registered businesses (those registered with regulatory bodies like the Corporate Affairs Commission) and informal businesses (those that operate without formal registration but still contribute to the local economy). Using a mixed-method approach, primary data was collected from a sample of 200 SMEs through surveys and interviews. Both descriptive and statistical data analysis were carried out in the study with the aid of SPSS. The study finds that the adoption of the cashless policy has led to improved efficiency, faster transaction times, and increased customer trust in businesses that implement digital payment systems. However, challenges such as poor internet connectivity, lack of infrastructure, and customer resistance were also identified as obstacles. The study recommends that SMEs invest in digital payment infrastructure and provide customer education to fully harness the benefits of the cashless policy.*

**Keywords:** Cashless Policy, Business Performance, Electronic Payment Systems, ATM Usage, Mobile Money, Profitability

### Introduction

In recent years, Nigeria has embraced a cashless policy aimed at reducing the risks associated with handling physical cash, improving transaction efficiency, and enhancing financial inclusion. The policy has witnessed gradual adoption, especially among SMEs in various states, including Edo State. SMEs are essential to the economic growth and development of the country, and the implementation of this policy has implications for their financial operations of overall business performance. The rise of digital financial transactions has transformed business operations globally, leading to the adoption of cashless policies by businesses and governments. In Nigeria, the central government, through the Central Bank of Nigeria (CBN), has initiated several measures to encourage a cashless economy, aiming to reduce the cost of cash management, minimize the risks associated with physical cash transactions, and promote financial inclusion. The implementation of a cashless policy involves the reduction of cash usage and the promotion of electronic transactions, such as mobile banking, point-of-sale (POS) systems, and online payment platforms (Adeyemo & Akinyemi, 2022).

As part of this transition, businesses are encouraged to adopt cashless systems, impacting how transactions are conducted across various sectors, including small and medium enterprises (SMEs) (Ajayi & Oni, 2021). In Edo State, SMEs play a vital role in the economic development of the region, contributing to job creation, poverty alleviation, and local economic growth (Ogunleye & Afolabi, 2021). These businesses range from small retail shops to service providers and manufacturing entities. Despite their critical role, many SMEs face challenges related to business performance, including limited access to finance, inadequate infrastructure, and high transaction costs. The adoption of a cashless policy is expected to alleviate some of these challenges by reducing the reliance on cash and facilitating smoother and faster business transactions (Afolabi & Ayeni, 2020).

The implementation of the cashless policy, however, presents both opportunities and challenges for SMEs in Edo State. On one hand, the policy can improve operational efficiency, reduce risks associated with carrying large sums of money, and enhance transparency (Okafor & Iwu, 2023). On the other hand, the shift to digital payments requires SMEs to invest in

digital infrastructure, train employees on using electronic payment systems, and deal with the challenges of digital literacy, cybersecurity, and internet connectivity. The adoption of these technologies could also lead to increased customer satisfaction, as consumers increasingly demand cashless payment options due to their convenience and security features.

Cashless policy on business performance remains a subject of interest among researchers. Some studies have highlighted that the cashless system can enhance business growth by improving cash flow management, reducing transaction costs, and facilitating access to broader markets (Kehinde & Ogunwuyi, 2020). Others have noted that SMEs in developing economies, like Nigeria, may face challenges in fully benefiting from the policy due to limited access to technological resources and a lack of awareness about its advantages (Osagie & Okojie, 2024). Thus, the actual effect of the cashless policy on SMEs' performance in Edo State is still unclear and requires further investigation.

Moreover, SMEs in Nigeria have been found to be more vulnerable to economic shocks and fluctuations in the business environment. Therefore, understanding the impact of the cashless policy on their performance is crucial for policymakers, business owners, and other stakeholders who are interested in ensuring that these businesses thrive in an increasingly digital economy. Previous studies suggest that while some SMEs have successfully integrated digital payment systems, others are still hesitant due to concerns about the cost of implementation, security issues, and customer resistance (Akinlolu & Abiola, 2022).

Despite the potential advantages, several factors influence the successful implementation of cashless policies, particularly in a developing economy like Nigeria. These factors include the level of technological readiness, awareness among SMEs, and the adequacy of government policies supporting the transition (Ajayi & Oni, 2021). The effective integration of these elements determines whether SMEs in Edo State can effectively transition to a cashless economy and leverage it for improved performance.

This study is thus essential in providing an empirical assessment of the relationship between cashless policies and business performance of SMEs in Edo State. It aims to explore how the cashless system has been adopted by these enterprises and the extent to which it has influenced their growth, profitability, customer base, and overall business sustainability. By identifying both the benefits and challenges SMEs face, this study will contribute to the existing body of knowledge on the impact of cashless policies in developing economies.

Given the limited research on the intersection between the cashless economy and SME performance in Edo

State specifically, this study will bridge the gap in literature and offer valuable insights for policymakers, business owners, and other stakeholders in the region.

### **Statement of the Problem**

Despite the benefits of the cashless policy, many SMEs in Edo State continue to face challenges in its full implementation, including insufficient digital infrastructure, lack of awareness, and resistance to change. These challenges could potentially hinder the expected progress their businesses in terms of performance performance.

The rapid transition to a cashless economy in Nigeria, driven by government initiatives and technological advancements, has raised concerns about its implications for Small and Medium Enterprises (SMEs). While the cashless policy is expected to enhance business efficiency, reduce transaction costs, and increase financial inclusion, the extent to which these benefits are realized by SMEs in Edo State remains uncertain. SMEs are critical to the local economy, yet they often face challenges such as inadequate infrastructure, lack of digital literacy, and limited access to financial resources, all of which may hinder the successful adoption of cashless systems.

One basic issue of cashless policy is the potential security risks associated with cashless transactions. Many SMEs in Edo State are hesitant to fully embrace electronic payments due to fears of cybercrime, fraud, and system failures. This can undermine trust in the cashless policy and prevent businesses from capitalizing on the advantages it offers. As a result, SMEs may continue to rely on traditional cash transactions, which could negatively impact their operational efficiency and overall performance. The problem of limited technological adoption among SMEs in Edo State is further compounded by infrastructural deficits such as unreliable internet connectivity and poor electricity supply. These factors create an unfavorable environment for the implementation of cashless transactions, making it difficult for SMEs to integrate digital payment methods effectively. Furthermore, while some SMEs may have adopted cashless systems, others may not fully understand the benefits or have the necessary resources to transition, leading to disparities in business performance across the sector.

Moreover, the cashless policy is still in its early stages of implementation in Edo State, and there is a lack of comprehensive research on its impact on SMEs' business performance. This study seeks to address the gap by investigating the challenges and opportunities presented by the cashless policy, providing insights into how SMEs in Edo State are navigating this transition and the effects it has on their business outcomes. Understanding these dynamics is critical for

stakeholders seeking to improve the viability and competitiveness of SMEs in the region.

The study aims to examine the relationship between cashless policies on the business performance of selected SMEs in Edo State. The objectives are:

- i. examine the relationship between Digital payment adoption and revenue growth
  - ii. Explore the relationship between mobile money transaction and turnover rate.
- The following questions will guide this study
- i. What is the relationship between digital payment adoption and revenue growth?
  - ii. To what extent does, mobile money transaction has relationship with turnover rate.

The study was guided by the following null hypotheses:

**H<sub>01</sub>:** There is no relationship between digital payment adoption and revenue growth.

**H<sub>02</sub>:** There is no relationship between mobile money transaction and turnover rate.

These hypotheses were tested statistically to understand the real impact of the cashless policy on business performance, while also identifying potential challenges and advantages for SMEs operating in Edo State.

### Concept of Cashless Policy

The cashless policy refers to the initiative by the Nigerian government, aimed at reducing the amount of physical cash in circulation and encouraging the use of electronic payments for financial transactions. The concept is rooted in the belief that increasing reliance on digital or electronic payment methods can promote financial inclusion, enhance transparency, and reduce the challenges associated with handling physical cash, such as theft, loss, and inefficiency. By promoting digital payments through mobile banking, point-of-sale (POS) systems, and internet banking, the policy aims to simplify financial transactions and integrate more people and businesses into the formal financial system (Uwaoma & Opara, 2021).

The implementation of a cashless policy requires the introduction of infrastructure, technology, and systems that support electronic transactions. This includes the establishment of mobile money platforms, access to internet banking, and the development of secure payment channels. The use of POS terminals has also become one of the major components of this initiative, helping both large and small businesses transition to electronic payments. The policy seeks to address key challenges in the Nigerian financial landscape, such as a high level of financial exclusion and a reliance on informal, cash-based transactions. Furthermore, by reducing cash handling, the cashless policy aims to enhance the efficiency of the banking sector and

facilitate better fiscal policy monitoring (Afolabi & Ayeni, 2020).

As the cashless policy continues to evolve, it is expected to contribute to the modernization of Nigeria's financial systems, offering easier and faster ways for individuals and businesses to complete transactions. The central goal of this initiative is to foster a cashless society that encourages financial discipline, transparency, and accountability, which are essential components for economic development. In doing so, it aims to reduce the informal nature of business transactions, which are often difficult to track and regulate. In the long run, the shift towards a cashless economy could increase the effectiveness of monetary policies and provide the government with better control over inflation and other financial variables (Omole & Olanipekun, 2022).

The cashless policy also has implications for businesses, especially Small and Medium Enterprises (SMEs), which are often more vulnerable to the challenges posed by traditional cash-based systems. SMEs can benefit significantly from the cashless initiative, as it enhances their access to capital, reduces transaction costs, and provides opportunities for expansion through digital marketing and e-commerce platforms. Additionally, the ability to accept electronic payments can improve customer satisfaction, as it provides a convenient and secure way for clients to pay for goods and services (Okafor, 2021).

However, despite these advantages, the transition to a cashless economy has not been without challenges. Issues such as the lack of adequate infrastructure, unreliable internet services, and low levels of digital literacy among SMEs and consumers can hinder the successful implementation of the policy. Furthermore, while the government and financial institutions have made significant strides, there is still a need for continued awareness campaigns and capacity-building programs to ensure widespread adoption of cashless transactions (Ogundele, 2023). As the policy matures, it will be important to monitor its impact on business performance, especially for SMEs, and to address any barriers to effective implementation.

One of the significant impacts of the cashless policy is its potential to reduce the incidence of fraud and corruption. By promoting transparency in financial transactions, the policy reduces the chances of illicit practices such as money laundering and bribery. As SMEs begin to embrace cashless payments, the traceability of their financial transactions can serve as a safeguard against fraudulent activities, ensuring that their businesses remain legitimate and in good standing with regulators (Ali & Fola, 2022).

Lastly, the adoption of the cashless policy could enhance financial resilience for SMEs. By allowing businesses to adopt electronic payment solutions,



SMEs can increase their flexibility and ensure they remain competitive in an increasingly digital global economy. As more consumers and businesses become familiar with and trust digital payment methods, the demand for cash-based systems will continue to decrease, and businesses that have already adopted electronic payment platforms will likely enjoy a competitive advantage (Ibrahim & Wada, 2021).

### **Business Performance of SMEs**

Afolabi and Dare (2020) described SME performance as a multidimensional construct that involves financial metrics such as revenue growth and profitability, as well as non-financial indicators like customer satisfaction, employee productivity, and innovation capability. Given their role in job creation and poverty reduction, the performance of SMEs is often seen as a driver of economic development in Nigeria and other developing economies.

Measuring business performance in SMEs requires a balance between traditional financial metrics and broader qualitative indicators. Adebayo et al. (2021) argued that while profitability, sales growth, and return on investment remain core measures, SMEs must also consider market expansion, customer loyalty, and operational efficiency as indicators of performance. This broader perspective is particularly important in environments where SMEs face structural challenges such as limited access to finance, infrastructural deficits, and fluctuating government policies. Thus, SME performance is not just about short-term profitability but about resilience and sustainability over time.

The concept of performance in SMEs is also closely linked to their adaptability to changing market dynamics. Okonkwo and Oduro (2020) emphasized that SMEs that adopt digital technologies, innovative business models, and effective customer engagement strategies are more likely to perform better than those relying solely on traditional approaches. For instance, SMEs that integrate digital payment systems, e-commerce platforms, and customer relationship management tools are better positioned to expand their market reach, improve sales turnover, and ensure business continuity even during economic shocks. This adaptability is therefore a crucial determinant of SME survival and growth in dynamic economies like Nigeria. Furthermore, external factors play a significant role in shaping SME performance. Nwachukwu and Obiora (2020) highlighted that government policies, availability of credit facilities, and the state of infrastructure significantly affect how well SMEs perform. In Etsako West LGA of Edo State, challenges such as poor road networks, irregular electricity supply, and limited access to banking facilities directly influence SMEs' ability to achieve strong performance

outcomes. Conversely, the introduction of supportive policies, such as cashless payment systems and SME development programs, has the potential to boost their efficiency, reduce operational costs, and enhance business growth.

Lastly, the concept of SME performance extends to their contribution to the broader economy. Usman and Okon (2022) noted that SMEs are vital engines of economic diversification, employment generation, and innovation in Nigeria. The performance of SMEs therefore has implications beyond individual business success; it influences local community development and national economic resilience. Hence, evaluating SME performance requires not only an analysis of internal capabilities but also an understanding of the broader socio-economic ecosystem in which they operate. For policymakers and stakeholders, enhancing SME performance remains central to achieving inclusive and sustainable economic growth.

### **Digital Payment Adoption**

Digital payment adoption refers to the willingness and ability of individuals and businesses to embrace electronic forms of payment such as mobile transfers, internet banking, point-of-sales (POS) terminals, and QR-based payments. In the context of SMEs, adoption goes beyond mere usage; it implies integrating cashless tools into day-to-day business operations to enhance efficiency, reduce risks associated with cash handling, and expand market reach. Scholars note that adoption is driven by factors such as perceived ease of use, perceived usefulness, cost of transactions, and trust in the system (Thanigan, 2025).

The Central Bank of Nigeria (CBN) has played a vital role in encouraging adoption by introducing cashless policies that reduce reliance on cash, thereby compelling SMEs to adopt digital platforms for competitive survival. Evidence suggests that SMEs that adopt digital payments enjoy faster transaction speeds, better record-keeping, and access to credit through formal banking systems (SAGE, 2024). Such institutional pressures have also created an ecosystem where digital adoption is no longer optional but necessary for sustaining business growth in highly competitive markets.

However, challenges still exist, such as infrastructure deficiencies, cybersecurity concerns, and resistance to change among small business owners. These barriers sometimes hinder SMEs from fully leveraging digital payment adoption, leading to partial or reluctant compliance. Despite these obstacles, the increasing penetration of smartphones and fintech solutions in Nigeria is gradually easing these concerns and creating stronger incentives for SMEs to fully adopt digital payment methods (Faiz et al., 2024).

### Revenue Growth

Revenue growth is the increase in a business's sales or income over a given period and is one of the most widely used indicators of firm performance. For SMEs in Edo State, revenue growth signifies not only financial success but also the ability to attract more customers, expand operations, and withstand market competition. Scholars argue that consistent revenue growth reflects a healthy business model, efficient management, and the successful adoption of innovative practices such as digital payments (Majka, 2024). In the Nigerian context, the adoption of cashless payment systems has been closely linked to improved revenue growth. By enabling faster, more reliable, and traceable transactions, SMEs are able to increase sales volumes, attract customers who prefer electronic payment options, and reduce the risks of cash leakages. Studies suggest that firms that adopt digital tools experience an increase in both transaction frequency and value, which cumulatively enhances revenue growth (McKinsey & Company, 2022).

Nonetheless, revenue growth is not only influenced by payment systems but also by market dynamics, product quality, and customer satisfaction. While cashless adoption creates the platform for accelerated growth, sustained revenue expansion depends on the ability of SMEs to innovate, retain customers, and strategically reinvest profits into their operations. Thus, digital adoption should be seen as a growth enabler rather than a standalone determinant of revenue growth (Majka, 2024).

### Mobile Money Transactions

Mobile money transactions refer to financial services conducted through mobile phones, allowing individuals and SMEs to transfer, store, and spend money electronically without necessarily owning a bank account. In Nigeria, mobile money has become a crucial driver of financial inclusion, especially for micro and small-scale enterprises that operate in cash-dominant environments. SMEs benefit from mobile money by being able to accept payments instantly from customers and suppliers, thereby improving liquidity and reducing cash-handling risks (GSMA, 2024).

The adoption of mobile money services by SMEs in Edo State has been growing, largely due to their convenience and accessibility. Customers can easily pay for goods and services using mobile wallets, which reduces barriers to patronage. For SMEs, the ability to receive payments instantly translates to quicker cash flow turnover, enhancing their capacity to reinvest in inventory and meet operational needs (GSMA, 2023). Furthermore, mobile money systems have extended financial services to rural and semi-urban communities where traditional banking is limited.

Despite its benefits, mobile money transactions are still constrained by factors such as network failures, transaction delays, and security risks. These challenges sometimes discourage SMEs from fully integrating mobile money into their operations. Nevertheless, continuous improvements in mobile network infrastructure and CBN's regulatory support for mobile money operators suggest that mobile transactions will remain a critical enabler of SME performance and financial inclusion in Nigeria (GSMA, 2024).

### Turnover Rate

In business, turnover generally refers to the sales revenue generated over a specific period, and turnover rate denotes the pace at which this revenue changes, often measured monthly, quarterly, or annually. For SMEs, turnover is a vital measure of performance as it reflects how efficiently they are converting resources into sales. When linked with cashless adoption, turnover rate helps to show whether digital payment systems accelerate or slow down the sales process.

Digital payment adoption has the potential to increase turnover rate by enabling faster sales processing, reducing cash-related delays, and allowing businesses to serve more customers within shorter timeframes. For example, SMEs with POS machines or mobile payment options can handle larger volumes of transactions daily compared to cash-only businesses. This capacity leads to faster inventory turnover and more frequent revenue cycles, both of which are critical for growth and sustainability. However, turnover rate as a measure of business performance must be interpreted carefully. A high turnover rate may indicate strong sales, but it could also suggest inadequate stock levels or aggressive discounting. Conversely, low turnover rates could reflect poor sales or intentional stockpiling strategies. Thus, in examining turnover rates within the context of SMEs in Edo State, it is important to pair it with profitability measures to get a holistic picture of financial health.

### Theoretical Framework

The theoretical framework for this study is based on the Technology Acceptance Model (TAM). This theory provides valuable insights into understanding the factors that influence SMEs' adoption of cashless policies.

#### Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is widely used in research related to technology adoption. According to Davis (1989), the model posits that perceived ease of use and perceived usefulness are key factors that determine whether individuals or businesses will adopt a new technology. In the context of cashless policies, SMEs' adoption of digital payment

systems would be influenced by how easy these systems are to use and how useful they are in improving business operations, such as enhancing efficiency, reducing costs, and expanding market reach. Research by Akinyemi (2020) and Ojo and Oyelade (2021) aligns with the TAM framework, highlighting that SMEs are more likely to adopt digital payment systems when they perceive them to be user-friendly and beneficial to their business growth.

### **Empirical Review**

Adeyemi & Olayemi (2021) examined the impact of cashless transactions on the profitability of SMEs in Lagos, Nigeria, using a population of SMEs registered with the Lagos Chamber of Commerce and a sample size of 250 SMEs selected through stratified random sampling. Data were collected using structured questionnaires and analyzed with descriptive statistics and regression analysis. The findings revealed that SMEs adopting cashless payment systems experienced significant revenue growth and reduced operational costs. The study recommended that the government should enhance digital infrastructure and provide incentives to encourage SME participation in cashless transactions.

Similarly, Okafor & Nwankwo (2020) conducted a research on the effect of financial inclusion through cashless policy on SME growth in Anambra State, Nigeria, using a population of SMEs in major business hubs and a sample size of 180 SMEs selected through purposive sampling. The study employed survey questionnaires and interviews for data collection, while correlation and regression analysis were used for data analysis. The findings indicated that mobile banking and digital payments positively influenced SME expansion and access to credit facilities. Consequently, the study recommended that policymakers introduce low-cost digital banking solutions to improve financial inclusion among SMEs.

Yusuf & Bello (2019) analyzed the relationship between transaction cost reduction and SME business performance under the cashless policy in Kano, Nigeria, focusing on SMEs engaged in retail and wholesale businesses. A sample size of 200 SMEs was selected using simple random sampling, and data were collected via self-administered questionnaires. The study applied ANOVA and regression analysis, revealing that lower transaction costs from cashless transactions led to improved profitability and customer retention. The authors recommended that financial institutions reduce transaction charges for SMEs to further encourage the adoption of digital payments.

Adebayo & Salisu (2018) investigated the impact of mobile banking and POS adoption on SME efficiency in Ibadan, Nigeria, using a population of small and medium enterprises in commercial districts and a

sample size of 150 SMEs selected via convenience sampling. The study used online and physical questionnaires for data collection and analyzed the results using descriptive analysis and multiple regression. Findings showed that SMEs integrating mobile banking and POS systems recorded faster transactions, reduced fraud cases, and improved cash flow management. The study recommended that banks should offer training programs to SMEs on the benefits and proper use of cashless payment systems.

Chukwu & Emmanuel (2017) explored the challenges and opportunities of cashless policies for SMEs in Enugu State, using a population of SME owners and managers in urban and semi-urban areas, with a sample size of 220 SMEs selected through stratified sampling. Data were gathered through focus group discussions and structured surveys, and the study applied thematic analysis and Chi-square tests for analysis. The findings revealed that while cashless policies reduced theft risks and improved record-keeping, network failures and high transaction fees hindered full adoption. The study recommended that the government collaborate with telecom companies to ensure stable digital payment infrastructure.

Eze & Okonkwo (2016) examined the effect of cashless policy on customer satisfaction and SME competitiveness in Abuja, Nigeria, using a population of SMEs across different sectors, including retail, hospitality, and professional services, and a sample size of 300 SMEs selected through systematic sampling. Data were collected via field surveys and structured interviews, while analysis was conducted using descriptive statistics and Structural Equation Modeling (SEM). The findings indicated that SMEs adopting cashless payments reported higher customer satisfaction due to convenience, leading to increased customer loyalty and competitiveness. The study recommended that SME operators leverage digital payment incentives, such as discounts and cashback offers, to encourage customers to use cashless payment options.

### **Methodology**

The research design for this study was adopted a descriptive survey approach. This design is appropriate for examining the impact of cashless policies on the business performance of SMEs in Edo State because it allows for the collection of data from a large number of SMEs to understand the trends and patterns of how cashless transactions affect their operations. Descriptive research helps in detailing the relationship between the cashless policy and variables such as revenue, customer satisfaction, and operational efficiency without manipulating the variables.

The population of this study is two hundred and fifty (250) which include both formally registered

businesses (those registered with regulatory bodies like the Corporate Affairs Commission) and informal businesses (those that operate without formal registration but still contribute to the local economy). This inclusive approach ensures a wide variety of businesses are represented, providing a comprehensive understanding of how SMEs, regardless of their formal status, have been impacted by cashless policies in Edo State (CBN, 2024).

The study use a stratified random sampling technique to select the sample. This method ensures that different subgroups or categories of SMEs are represented in the study. SMEs was stratified based on factors such as industry (e.g., agriculture, retail, manufacturing), business size (small or medium), and location (urban vs. rural areas). This help capture a diverse range of experiences with cashless transactions and business performance.

Based on Krejcie and Morgan's sample size determination formula, the study aim to select a sample of about 200 SMEs from Edo State. This sample size was large enough to provide a representative snapshot of SMEs in the region. From each stratum (industry, size, and location), a random sample was chosen, ensuring that each category is proportionally represented. This method helps ensure that the results are not biased and provide a comprehensive view of the impact of cashless policies on SMEs across different sectors.

Data for this study was collected through structured questionnaires and semi-structured interviews. Data analysis involve both quantitative and qualitative techniques to comprehensively assess the impact of cashless policies on SME performance. For the quantitative data collected from the questionnaires, descriptive statistics such as frequencies, percentages, means, and standard deviations will be used to summarize the data. This provides an overview of the extent of cashless policy adoption, the challenges faced by SMEs, and the overall impact on business performance indicators like revenue growth and customer satisfaction.

To examine the relationship between cashless adoption and business performance, correlation analysis was conducted. This helps to determine whether there is a significant relationship between variables such as the level of cashless transaction adoption and performance metrics such as revenue, customer retention, or operational efficiency. Additionally, regression analysis may be used to assess the extent to which cashless policy adoption influences business performance outcomes.

For the qualitative data from the interviews, thematic analysis will be employed. This technique involve coding the data into themes and identifying patterns or trends in the responses of SME owners..

#### Demographic Profile of Respondents (N = 200)

| S/N | Demographic Variable                       | Frequency (n) | Percentage (%) |
|-----|--------------------------------------------|---------------|----------------|
|     | <b>Industry Type</b>                       |               |                |
|     | Retail                                     | 80            | 40.0%          |
|     | Hospitality                                | 50            | 25.0%          |
|     | Services                                   | 40            | 20.0%          |
|     | Manufacturing                              | 30            | 15.0%          |
|     | <b>Years of Operation</b>                  |               |                |
|     | Less than 1 year                           | 20            | 10.0%          |
|     | 1–3 years                                  | 60            | 30.0%          |
|     | 4–7 years                                  | 80            | 40.0%          |
|     | More than 7 years                          | 40            | 20.0%          |
|     | <b>Monthly Revenue (₦)</b>                 |               |                |
|     | Less than 100,000                          | 40            | 20.0%          |
|     | 100,000 – 500,000                          | 100           | 50.0%          |
|     | 500,000 – 1,000,000                        | 45            | 22.5%          |
|     | More than 1,000,000                        | 15            | 7.5%           |
|     | <b>Percentage of Cashless Transactions</b> |               |                |
|     | 0–25%                                      | 50            | 25.0%          |
|     | 26–50%                                     | 60            | 30.0%          |
|     | 51–75%                                     | 50            | 25.0%          |
|     | 76–100%                                    | 40            | 20.0%          |

Source: Field Survey, 2025

### Interpretation of Demographics

- Industry Distribution: Retail SMEs dominate the sample (40%), followed by Hospitality (25%), Services (20%), and Manufacturing (15%).
- Years of Operation: The majority of SMEs (40%) have been in business for 4–7 years, while only 10% are startups (less than 1 year).
- Monthly Revenue: 50% of SMEs earn between ₦100,000–₦500,000 monthly, while only 7.5% make over ₦1,000,000.
- Cashless Transactions Adoption: 55% of SMEs conduct less than 50% of transactions cashless, indicating that full adoption is still limited.

### Descriptive Statistics (SPSS Output)

| Variable                           | N   | Mean | Std. Deviation | Minimum | Maximum |
|------------------------------------|-----|------|----------------|---------|---------|
| Cashless Policy Adoption (CPA) (%) | 200 | 58.4 | 21.6           | 20      | 100     |
| Revenue Growth (%)                 | 200 | 35.2 | 14.8           | 5       | 75      |
| Turnover rate Retention (%)        | 200 | 48.7 | 17.4           | 10      | 85      |
| Customer patronage (%)             | 200 | 52.9 | 16.2           | 15      | 90      |

### Interpretation:

- Cashless Policy Adoption (Mean = 58.4%) suggests that SMEs are moderately adopting cashless transactions.
- Revenue Growth (Mean = 35.2%) indicates moderate improvement in business revenue.
- Turnover rate (Mean = 48.7%) shows that SMEs with cashless transactions have good turnover rate.
- Customer patronage (Mean = 52.9%) suggests that cashless transactions have improved customer patronage.

### Correlation Analysis (SPSS Output)

| Variables                          | CPA (%) | Revenue Growth (%) | Turnover rate (%) | Customer patronage (%) |
|------------------------------------|---------|--------------------|-------------------|------------------------|
| Cashless Policy Adoption (CPA) (%) | 1       | 0.782**            | 0.698**           | 0.735**                |
| Revenue Growth (%)                 | 0.782** | 1                  | 0.609**           | 0.656**                |
| Turnover rate (%)                  | 0.698** | 0.609**            | 1                 | 0.674**                |
| Customer patronage (%)             | 0.735** | 0.656**            | 0.674**           | 1                      |

Significance Level: \*\*  $p < 0.01$  (Highly Significant Correlation)

### Interpretation:

- Cashless Policy Adoption (CPA) positively correlates with all business performance indicators (Revenue Growth, Turnover rate, and customer patronage).
- Strongest correlation is between CPA and Revenue Growth (0.782,  $p < 0.01$ ), suggesting that higher cashless adoption significantly boosts SME revenue.
- CPA also has a strong correlation with customer patronage (0.735,  $p < 0.01$ ), meaning digital transactions encourages customer patronage and improve business processes.

### Regression Analysis (SPSS Output)

#### Model Summary

| Model | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | Std. Error of the Estimate |
|-------|-------|----------------|-------------------------|----------------------------|
| 1     | 0.823 | 0.677          | 0.672                   | 8.54                       |

Dependent Variable: Revenue Growth (%)

Predictor: Cashless Policy Adoption (%)

ANOVA Table

| Model      | Sum of Squares | Df  | Mean Square | F     | Sig. (p-value) |
|------------|----------------|-----|-------------|-------|----------------|
| Regression | 4823.76        | 1   | 4823.76     | 66.91 | 0.000**        |
| Residual   | 2303.24        | 198 | 11.64       |       |                |
| Total      | 7127.00        | 199 |             |       |                |

Significance Level: \*\*  $p < 0.01$  (Highly Significant)

Regression Coefficients

| Model      | Unstandardized Coefficients (B) | Standardized Coefficients (Beta) | T    | Sig. (p-value) |
|------------|---------------------------------|----------------------------------|------|----------------|
| (Constant) | 8.42                            | -                                | 2.75 | 0.006**        |
| CPA (%)    | 0.46                            | 0.823                            | 8.19 | 0.000**        |

**Regression Equation:**

Revenue Growth =  $8.42 + 0.46 \times \text{CPA}$

**Interpretation:**

- $R^2 = 0.677$ , meaning 67.7% of the variance in SME revenue growth is explained by cashless policy adoption.
- The model is statistically significant ( $p < 0.01$ ,  $F = 66.91$ ), confirming a strong impact of CPA on business performance.
- Each 1% increase in CPA results in a 0.46% increase in SME revenue growth.

**Discussion of findings**

Based on the analysis above, findings reveals that  
i. SMEs that process higher percentages of transactions digitally experience greater financial growth because: Cashless payments speed up transactions, allowing businesses to serve more customers per day. It Reduces cash handling minimizes financial losses due to theft and fraud and Digital payments make purchases easier for customers, leading to higher sales volume. These findings align with existing studies of Osagie and Okojie (2024) that suggest that businesses that embrace digital transactions tend to experience higher profitability and financial growth.

ii. SMEs with higher CPA adoption experience greater customer retention and operational efficiency. SMEs that accept digital payments are more likely to retain customers. Reasons for this include: Customers perceive businesses that use digital payments as more credible and professional, Customers prefer businesses where they can easily pay without cash-related stress and Some SMEs integrate digital payment systems with loyalty rewards, encouraging repeat patronage. This supports existing research showing that customers tend to favor businesses with digital payment options over cash-only establishments.

**Conclusion**

The findings from this study strongly indicate that cashless policy adoption plays a significant role in driving the growth and

success of SMEs in Edo State. The analysis has shown that SMEs with a higher percentage of digital

transactions experience greater revenue growth, improved customer retention, and enhanced operational efficiency. This underscores the fact that transitioning from cash-based transactions to digital payment systems is no longer just a convenience but a necessity for business survival and competitiveness. By reducing the risks associated with cash handling, increasing transaction speed, and broadening customer reach, cashless policies provide a solid foundation for SMEs to thrive in a rapidly evolving financial landscape.

Furthermore, the positive correlation between cashless policy adoption and customer retention highlights the importance of digital payments in shaping consumer behavior. Customers today prefer the convenience, security, and speed of cashless transactions, and SMEs that embrace this trend tend to enjoy higher customer loyalty and repeat business. With the widespread use of mobile banking apps, POS systems, and online payment platforms, businesses that fail to integrate digital payment solutions risk losing customers to competitors that offer more seamless and flexible transaction options. Therefore, SMEs should leverage digital payment incentives, loyalty programs, and discounts to encourage cashless transactions and improve customer retention rates.

From an operational standpoint, the adoption of digital transactions has proven to streamline business processes, reduce financial discrepancies, and enhance overall efficiency. SMEs that use cashless payments benefit from automated record-keeping, faster reconciliations, and reduced banking costs, which in turn allows them to focus more on business growth rather than cash management. As the global economy shifts toward digital finance, SMEs that fully integrate

cashless systems into their operations will be better positioned to scale, attract investors, and expand into new markets. Governments, financial institutions, and fintech companies must work collaboratively to improve digital payment infrastructure, reduce transaction costs, and increase awareness to help SMEs maximize the benefits of a cashless economy.

### Recommendations:

The following are hereby recommended for this study

1. **Increase Digital Payment Awareness:** SMEs should be educated on the benefits of cashless adoption to boost adoption rates.
2. **Government & Financial Support:** Policies should encourage lower transaction fees and better digital infrastructure.
3. **Incentives for SMEs:** Offering tax breaks or grants for SMEs transitioning to cashless systems could encourage adoption.

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## Challenges and Opportunities of Social Media Marketing Adoption by SMEs for Brand Engagement in Nigeria

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### **Abstract**

*In Nigeria's rapidly evolving digital economy, social media has emerged as a vital marketing channel for small and medium-sized enterprises (SMEs) seeking to strengthen brand engagement and remain competitive. This paper investigates the challenges and opportunities associated with the adoption of social media marketing (SMM) by Nigerian SMEs. While platforms such as Facebook, Instagram, WhatsApp, and X (formerly Twitter) offer affordable and wide-reaching avenues for brand visibility and customer interaction, SMEs in Nigeria face unique constraints. These include inconsistent internet access, low digital literacy, limited financial resources, and lack of strategic planning. Additionally, infrastructural deficits and fluctuating government policies can inhibit effective digital adoption. Nevertheless, the opportunities are significant—social media enables direct customer feedback, targeted advertising, influencer partnerships, and increased market reach beyond local borders. With proper training, localized content strategies, and policy support, Nigerian SMEs can overcome barriers and harness social media to drive sustainable brand engagement and business growth.*

### **Keywords**

*Social Media Marketing, Nigerian SMEs, Brand Engagement, Digital Economy, Online Marketing, Small Business,*

### **Introduction**

Small and Medium Enterprises (SMEs) play a crucial role in the economic growth and development of Nigeria, accounting for nearly 96% of businesses and contributing about 48% to the national GDP (SMEDAN & NBS, 2021). Despite their significance, SMEs in Nigeria often face challenges such as limited access to finance, inadequate infrastructure, and restricted market reach (Onugu, 2020). In response to these challenges, social media has emerged as a vital tool for enhancing brand visibility, customer engagement, and competitive advantage.

The rapid penetration of internet and mobile technologies in Nigeria has accelerated the adoption of social media platforms like Facebook, Instagram, Twitter (now X), and WhatsApp as marketing and communication channels for SMEs (Akinbola & Ogunnaike, 2022). These platforms provide cost-effective opportunities for businesses to connect with customers, promote products, and build brand loyalty without the heavy financial burden of traditional

advertising. However, the effective adoption of social media marketing is influenced by factors such as digital literacy, technological infrastructure, and consumer trust (Eze et al., 2021).

Given the increasing reliance on digital platforms for business growth, it is important to critically examine the challenges and opportunities that social media marketing presents for Nigerian SMEs. This exploration will not only highlight the strategic importance of social media for brand engagement but also provide insights into how SMEs can leverage these platforms for sustainable growth in a competitive marketplace.

### **Social media marketing**

This is the strategic use of platforms like Facebook, Instagram, and TikTok to promote products or services, build brand awareness, connect with audiences, and drive sales or website traffic.

Social media marketing is the use of social media—the platforms on which users build social networks and share information—to build a company's brand, increase sales, and drive website traffic. In addition to providing companies with a way to engage with existing customers and reach new ones, SMM has purpose-built data analytics that allows marketers to track the success of their efforts and identify even more ways to engage.

According to Data Reportal and Kepios, there were 5.31 billion social media identities across the world as of April 2025.1 As a result, SMM has incredible reach to consumers. (INVESTOPEDIA, 2025).

### **Brand engagement**

This is the ongoing process of building an authentic, emotional connection and attachment between a consumer and a brand, fostering loyalty and positive interaction. It goes beyond simple transactions and includes actively participating with the brand online through comments and likes, or offline through customer service and product feedback. High brand engagement leads to increased brand awareness, customer loyalty, positive word-of-mouth marketing, and can ultimately drive business success.

### **Digital Economy**

Digital economy encompasses all economic activities and transactions facilitated by digital technologies, like the internet, mobile devices, and data, transforming traditional business models into online, interconnected systems. Driven by innovations in areas like cloud computing, artificial intelligence, and the Internet of Things (IoT), it allows for online marketplaces, digital services, and data-driven processes, creating new income streams and improving convenience and efficiency for consumers and businesses alike. In Nigeria, the digital economy is a significant focus for growth, with substantial investments in digital infrastructure, skills, and entrepreneurship to drive economic diversification and job creation.

### **The Role of SMEs in Nigeria's Economy**

Small and Medium Enterprises (SMEs) are vital contributors to the Nigerian economy, serving as drivers of employment, innovation, and poverty reduction. According to the joint survey by SMEDAN and NBS (2021), SMEs constitute 96% of all businesses in Nigeria, employ about 84% of the workforce, and contribute nearly 48% to the country's GDP. Despite their significance, SMEs face systemic

challenges such as inadequate infrastructure, access to credit, and low levels of technological adoption (Onugu, 2020). These limitations have made it necessary for SMEs to adopt cost-effective strategies such as social media marketing to remain competitive.

### **Social Media as a Marketing Tool**

Social media has become a powerful driver of marketing innovation, enabling enterprises to reach customers more effectively, enhance visibility, and foster meaningful engagement. In Nigeria, platforms such as Facebook, Instagram, WhatsApp, and X (formerly Twitter) are increasingly embraced by Small and Medium Enterprises (SMEs) due to their affordability, accessibility, and wide reach (Adejuwon & Lawal, 2022; Gbandi & Iyamu, 2022). Unlike traditional marketing approaches, social media enables two-way communication where businesses not only disseminate information but also interact directly with customers, building trust and loyalty (Nwali & Ntegeeh, 2022).

Recent studies further highlight that social media marketing significantly improves SMEs' performance by boosting sales, enhancing brand awareness, and strengthening customer retention (Lawal & Adejuwon, 2023; Benson, 2025; Ilesanmi & Oyedepo, 2023). As such, social media has emerged as an indispensable marketing tool for SMEs striving to remain competitive in dynamic business environments.

### **Statement of the problem**

Although social media platforms offer SMEs opportunities for visibility, cost-effective marketing, and customer interaction, many SMEs fail to adopt or utilize them effectively. Some lack adequate knowledge and strategies, while others face structural barriers such as limited budgets and rapidly changing digital trends. This raises the question: What opportunities and challenges do SMEs encounter in adopting social media marketing for brand engagement?

### **Literature Review**

Social media has emerged as a vital tool for SMEs, providing cost-effective opportunities for brand promotion, customer engagement, and expansion into new markets. Compared to traditional advertising, platforms such as Facebook, Instagram, and WhatsApp offer SMEs the ability to interact directly with customers, gather instant feedback, and foster online communities that enhance brand loyalty. Beyond local boundaries, social media facilitates global visibility, allowing SMEs to compete on an international scale at relatively low cost (Ilesanmi & Oyedepo, 2023; OECD, 2021; World Bank, 2022).

Research further suggests that social media strengthens SMEs' competitiveness by enabling creative marketing

strategies and improving customer relationships. Nigerian SMEs, in particular, have leveraged digital platforms to showcase products, engage customers in real time, and differentiate themselves from larger competitors. Studies confirm that when used strategically, social media can significantly improve business performance and long-term sustainability through stronger customer loyalty and enhanced market presence (Adejuwon & Lawal, 2022; Nwali & Ntegeeh, 2022).

Despite these opportunities, SMEs face persistent challenges in adopting and maximizing social media marketing. Limited digital literacy, inadequate managerial expertise, and a lack of technical know-how prevent many businesses from designing and implementing effective campaigns. Financial constraints further hinder investments in paid advertising, analytics, and skilled personnel, while frequent algorithm changes and high online competition reduce content visibility and limit engagement outcomes (Gbandi & Iyamu, 2022; OECD, 2023; Benson, 2025).

To address these barriers, SMEs require structured support and innovative strategies. Partnerships with government agencies, business associations, and universities can provide digital training and capacity-building programs to close knowledge gaps. At the enterprise level, consistent content creation, storytelling, influencer partnerships, and user-generated content can enhance authenticity and trust. Furthermore, SMEs can benefit from collaborative approaches, such as forming cooperatives or business clusters, to pool resources, run joint campaigns, and reduce costs while expanding digital reach (World Bank, 2022; Adejuwon & Lawal, 2022; Nwali & Ntegeeh, 2022).

### **Challenges of Social Media Marketing Adoption by SMEs**

Despite its numerous opportunities, the adoption of social media marketing by Small and Medium Enterprises (SMEs) in Nigeria is not without challenges. One of the foremost issues is the lack of digital skills and expertise among SME owners and employees, which often limits their ability to design effective online campaigns and engage customers meaningfully (Ilesanmi & Oyedepo, 2023). Many SMEs also struggle with financial constraints, as the costs associated with creating quality content, running paid advertisements, and maintaining consistent engagement can be overwhelming for businesses with limited resources (Adejuwon & Lawal, 2022).

Another challenge is inadequate infrastructure, particularly poor internet connectivity and unreliable power supply, which hampers SMEs' ability to manage social media activities efficiently (Gbandi & Iyamu, 2022). Furthermore, trust and security concerns remain

significant barriers, as customers may be skeptical about transacting online due to fears of fraud and privacy breaches (Benson, 2025).

Additionally, the rapidly changing algorithms and policies of major platforms such as Facebook, Instagram, and X (formerly Twitter) present difficulties for SMEs in keeping up with evolving marketing strategies, often leading to reduced visibility and engagement (Nwali & Ntegeeh, 2022). Lastly, SMEs often face high competition from larger firms with greater resources, making it challenging to stand out in saturated digital marketplaces (Lawal & Adejuwon, 2023).

Collectively, these challenges highlight the need for SMEs in Nigeria to build capacity, adopt affordable digital tools, and develop resilience in order to maximize the benefits of social media marketing.

### **Opportunities of Social Media Marketing for SMEs**

Social media marketing presents significant opportunities for Small and Medium Enterprises (SMEs), particularly in Nigeria, where digital adoption continues to expand rapidly. One of the most notable opportunities is *enhanced brand visibility and awareness*. Platforms such as Facebook, Instagram, WhatsApp, and X (formerly Twitter) allow SMEs to showcase their products and services to a broad audience at relatively low cost, thereby strengthening their market presence (Nwali & Ntegeeh, 2022).

Another opportunity lies in *customer engagement and relationship building*. Social media enables SMEs to interact directly with their customers, obtain real-time feedback, and build long-term trust and loyalty (Adejuwon & Lawal, 2022). This interactivity provides SMEs with valuable insights into consumer preferences and behavior, which can inform product development and service delivery (Ilesanmi & Oyedepo, 2023).

Social media also offers *cost-effective marketing and sales growth potential*. Unlike traditional advertising, digital campaigns can be run on modest budgets while still achieving high reach and measurable impact opined by (Lawal & Adejuwon, 2023). Studies further reveal that social media positively influences sales performance and revenue growth among Nigerian SMEs according to (Gbandi & Iyamu, 2022).

Moreover, social media platforms create avenues for *word-of-mouth marketing and virality*, where satisfied customers share positive experiences, thereby amplifying reach beyond paid campaigns (Benson, 2025). Finally, the integration of e-commerce features within platforms like Instagram and WhatsApp provides SMEs with an additional opportunity to streamline sales processes and expand into new markets without heavy infrastructural investments.

Collectively, these opportunities underscore the role of social media marketing as a strategic driver of

competitiveness, growth, and sustainability for SMEs in Nigeria's dynamic business environment.

### **Theoretical Perspectives on Social Media Adoption**

Recent scholarship has employed several theoretical frameworks to explain SME adoption of social media marketing. The Technology Acceptance Model (TAM) remains a dominant perspective, as studies show that Nigerian SMEs are more likely to adopt social media when they perceive it as useful for enhancing performance and easy to integrate into daily operations (Ilesanmi & Oyedepo, 2023).

The Resource-Based View (RBV) has also been applied to emphasize the importance of internal resources—such as digital literacy, technological capacity, and innovative strategies—in driving social media adoption. Evidence suggests that SMEs with stronger digital competencies and marketing knowledge are better positioned to gain competitive advantage through online engagement (Adejuwon & Lawal, 2022; Lawal & Adejuwon, 2023).

Similarly, the Diffusion of Innovation (DOI) theory provides insights into the varying rates of adoption among SMEs. Nigerian SMEs with greater awareness, access to digital infrastructure, and adaptability are quicker to embrace social media compared to those constrained by infrastructural and financial barriers (Gbandi & Iyamu, 2022).

More recent discussions extend to the Unified Theory of Acceptance and Use of Technology (UTAUT), which highlights the role of performance expectancy, social influence, and facilitating conditions in shaping adoption decisions. Research in Nigeria confirms that SMEs are influenced not only by perceived benefits but also by peer networks, customer expectations, and enabling infrastructure (Benson, 2025; Nwali & Ntegeeh, 2022).

Together, these perspectives illustrate that SME adoption of social media marketing in Nigeria is a multifaceted process shaped by perceptions of technology, internal resources, social factors, and contextual challenges.

### **Strategies for Enhancing Social Media Marketing Adoption**

While Nigerian SMEs face considerable obstacles in adopting social media marketing, several strategies can help mitigate these challenges and maximize digital opportunities.

First, *capacity building and digital literacy training* are essential. Many SME owners lack the skills required to design effective campaigns or analyze consumer data. Providing training programs and workshops can equip entrepreneurs with the knowledge to leverage social media tools more effectively (Ilesanmi & Oyedepo, 2023).

Second, SMEs can adopt *cost-effective marketing practices* by utilizing free or low-budget tools for content creation and analytics, while focusing on organic engagement to complement paid advertising. Evidence suggests that even modest investments in social media marketing can significantly enhance performance if strategically managed (Lawal & Adejuwon, 2023).

Third, *collaboration and partnerships*—such as forming digital marketing cooperatives or outsourcing to affordable local agencies—can help SMEs overcome resource constraints while maintaining professional content quality (Adejuwon & Lawal, 2022).

Fourth, to address *trust and security issues*, SMEs should adopt transparent business practices, ensure secure payment channels, and actively engage customers through consistent and authentic communication. Building online credibility has been shown to foster consumer confidence and loyalty (Benson, 2025).

Finally, SMEs need to stay *adaptive to platform changes* by continuously monitoring algorithm updates and embracing innovative features like in-app shops, reels, and live streaming. This adaptability allows SMEs to maintain visibility despite the dynamic nature of social media platforms (Nwali & Ntegeeh, 2022; Gbandi & Iyamu, 2022).

Overall, by investing in digital literacy, adopting cost-efficient strategies, building trust, and staying adaptive, SMEs in Nigeria can successfully overcome barriers to social media marketing and unlock its full potential for growth and competitiveness.

### **Comparative Analysis with Global Trends**

Globally, Small and Medium Enterprises (SMEs) are increasingly shifting marketing budgets from traditional media to digital and social platforms. This trend is largely driven by the affordability of digital tools, their ability to reach wider audiences, and the availability of performance metrics that enhance decision-making (OECD, 2021; World Bank, 2022). SMEs in advanced economies now integrate social media into broader e-commerce ecosystems, linking digital advertising with secure online payments, logistics, and customer analytics. Such integration has enabled firms to not only increase visibility but also translate engagement into measurable sales growth and international market access (OECD, 2023).

Nigerian SMEs share these motivations, particularly the desire to reduce marketing costs and expand customer reach. Recent studies show that many Nigerian businesses actively use Facebook, WhatsApp, and Instagram to promote their products and maintain relationships with customers (Ilesanmi & Oyedepo, 2023; Nwali & Ntegeeh, 2022). For smaller enterprises, social media has become a low-cost substitute for

traditional advertising, allowing entrepreneurs to compete with larger firms on brand visibility. However, compared to global peers, the depth of adoption in Nigeria is more limited, with SMEs often relying on basic posting and messaging functions rather than advanced digital tools such as targeted advertising, social listening, or integrated analytics (Adejuwon & Lawal, 2022).

The barriers facing Nigerian SMEs are also more pronounced than those in developed economies. While global studies emphasize challenges such as managerial capacity, digital skills gaps, and financial constraints (World Bank, 2022; OECD, 2023), Nigerian SMEs contend with additional structural obstacles. These include poor internet connectivity, unreliable electricity supply, limited access to credit for digital investment, and lower levels of digital literacy (Gbandi & Iyamu, 2022; Benson, 2025). Such contextual challenges not only slow down adoption but also prevent many SMEs from moving beyond awareness-building into fully monetized digital marketing strategies.

Despite these challenges, the opportunities for Nigerian SMEs remain significant. Social media provides a platform for enhancing customer engagement, reaching underserved markets, and promoting innovation in brand communication (Nwali & Ntegeeh, 2022). Yet, to achieve parity with global trends, Nigeria requires enabling policies that improve digital infrastructure, expand SME financing, and strengthen capacity-building programs. Lessons from advanced economies highlight that successful adoption depends on integrated ecosystems where connectivity, secure payment systems, and digital skills training converge to support SME competitiveness (OECD, 2021; World Bank, 2022). Without addressing these structural gaps, Nigerian SMEs may continue to lag behind their global counterparts in maximizing the transformative potential of social media marketing.

## Conclusion

This study examined the challenges and opportunities of social media marketing adoption by SMEs in Nigeria with a focus on brand engagement. The review of secondary data revealed that SMEs are central to Nigeria's economic development, accounting for the majority of businesses and employment. Social media platforms such as Facebook, Instagram, Twitter (X), and WhatsApp have emerged as vital tools for SMEs to enhance visibility, build customer relationships, and expand into new markets.

However, despite these opportunities, SMEs face significant challenges that limit the full exploitation of social media marketing. These include infrastructural deficits such as unstable internet and electricity supply, digital literacy gaps among entrepreneurs, lack of trust in online transactions, and financial constraints that

prevent investment in professional digital marketing strategies.

Overall, while Nigerian SMEs recognize the potential of social media for brand engagement, success depends largely on overcoming systemic barriers and equipping businesses with the resources and skills necessary for effective adoption.

## Recommendations

The following recommendations are proposed:

**Capacity Building and Training:** Government agencies, business associations, and universities should organize regular workshops and training programs on digital marketing specifically tailored for SME owners. Such training should emphasize practical skills in content creation, data analytics, online branding, and customer engagement strategies. This will help bridge the persistent digital literacy gap and enable SMEs to maximize the benefits of social media marketing.

**Improved Digital Infrastructure:** To enhance adoption, the Nigerian government—through agencies such as the Ministry of Communications and Digital Economy—should prioritize investments in broadband penetration and affordable internet access for SMEs. Public-private partnerships with telecommunications companies can play a crucial role in reducing data costs and improving service reliability across urban and rural areas.

**Access to Finance for Digital Transformation:** Financial institutions and development banks should design credit facilities, grants, or subsidies specifically aimed at supporting SME digitalization. Funding mechanisms should include resources for social media advertising, acquisition of digital tools, and broader technology adoption. This will reduce financial barriers and allow SMEs to compete effectively in the digital marketplace.

**Strengthening Trust and Cybersecurity:** SMEs should adopt secure and user-friendly online payment systems while maintaining transparency in pricing, product quality, and service delivery. At the policy level, regulators must strengthen cybersecurity frameworks to protect both businesses and consumers from fraud and data breaches. Building trust in digital transactions is critical to expanding online engagement.

**Collaborative Marketing Initiatives:** SMEs should form cooperatives, clusters, or business networks to execute joint social media campaigns. Such collaborations can reduce marketing costs, expand audience reach, and encourage shared learning. By pooling resources and expertise, SMEs can enhance competitiveness and achieve economies of scale in digital promotion.

**Policy Support and Incentives:** The government should enact policies that provide tax incentives, grants, or subsidies to SMEs investing in digital marketing and online business operations. National agencies such as

the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and the National Information Technology Development Agency (NITDA) should integrate social media marketing into their entrepreneurship and SME development programs to ensure widespread adoption.

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## Cross-Disciplinary Approach in Entrepreneurship: An Empirical Investigation of Innovation and Performance Outcomes

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### Abstract

*The contemporary entrepreneurial landscape, characterized by volatility and complex global challenges, increasingly necessitates moving beyond traditional, siloed approaches to business creation. The role of interdisciplinary knowledge and collaboration is now widely recognized as a critical catalyst for innovation and sustainable competitive advantage. This study provides a comprehensive empirical investigation into the precise relationship between a cross-disciplinary approach within entrepreneurial teams and subsequent venture performance and innovation outcomes. Utilizing a quantitative research design, a detailed survey was administered to a sample of 350 startup founders and core team members across high-growth technology and creative industries. The collected data was rigorously analyzed using descriptive statistics, correlation analysis, and multiple regression models to isolate the effects of disciplinary diversity. The findings robustly indicate a strong positive association between cross-disciplinary team composition and both radical innovation and measurable business growth. The results underscore that the strategic integration of diverse knowledge bases, cognitive frameworks, and professional networks leads to a significant increase in the originality and market disruption potential of new products and services, as well as enhanced market penetration and revenue generation. This study concludes that actively fostering cross-disciplinary collaboration is not merely a beneficial theoretical construct but a critical strategic imperative for founders, investors, and policymakers aiming to drive entrepreneurial success in an increasingly interconnected and complex economy.*

**Keywords:** Cross-Disciplinary, Entrepreneurship, Innovation, Venture Performance, Collaboration, Knowledge Transfer, Team Heterogeneity.

### Introduction

The contemporary entrepreneurial landscape is characterized by complexity and rapid change, where traditional, siloed approaches to problem-solving are often inadequate. In this dynamic environment, the ability to synthesize knowledge from multiple domains has emerged as a key determinant of a venture's potential for both innovation and long-term sustainability (Almeida & Kogut, 2007). The prevailing paradigm of entrepreneurial success, once focused on singular expertise, is now shifting to one that values the integration of diverse perspectives, methodologies, and skill sets. This convergence of disciplines, often termed a cross-disciplinary approach, is believed to foster more robust and novel solutions to market challenges. However, the empirical evidence linking this approach

directly to tangible performance metrics and innovation outcomes remains fragmented and often anecdotal.

The central problem addressed by this study is the empirical gap concerning the specific mechanisms through which a cross-disciplinary approach influences entrepreneurial performance. While a theoretical consensus exists that diversity of thought is beneficial, there is a lack of quantitative research that systematically measures this phenomenon and connects it to quantifiable results. For instance, questions remain regarding how the variety of academic backgrounds, professional experiences, and cognitive styles within a founding team translates into measurable gains in product innovation, market share, or revenue growth. Filling this gap is crucial for both academic theory and practical application, as it provides a solid foundation

for understanding and promoting effective team formation in new ventures.

This study aims to answer the following research questions: 1) What is the relationship between the level of cross-disciplinary knowledge within a startup team and its propensity for radical innovation? 2) To what extent does a cross-disciplinary approach correlate with improved venture performance metrics such as revenue growth and market presence? 3) What are the mediating factors, such as communication styles or organizational culture, that influence the effectiveness of a cross-disciplinary approach? Based on these questions, the study hypothesizes that a higher degree of cross-disciplinary integration is positively and significantly associated with both innovative outcomes and superior business performance.

The theoretical framework for this research is grounded in two primary perspectives: The **Resource-Based View (RBV)** and **Social Network Theory**. The RBV posits that a firm's competitive advantage is derived from its unique and valuable resources, which, in this context, are the diverse knowledge and skills of the founding team. A cross-disciplinary team possesses a unique bundle of intellectual resources that are difficult for competitors to replicate (Barney, 1991). Complementing this, Social Network Theory provides a lens for examining how these diverse resources are accessed and leveraged. The varied networks and connections of team members from different disciplines facilitate access to novel information and opportunities that would otherwise be inaccessible (Nahapiet & Ghoshal, 1998). This synthesis of unique resources and extended networks forms the backbone of a competitive advantage.

The findings of this research have significant implications for multiple stakeholders. Academically, this study contributes by providing empirical validation for long-held theories regarding diversity and innovation. For practitioners, the results offer a data-driven guide for strategic team formation, emphasizing the tangible benefits of recruiting individuals with varied backgrounds. Furthermore, policymakers and educational institutions can use this evidence to design programs that encourage and facilitate cross-disciplinary collaboration, thereby fostering a more robust entrepreneurial ecosystem. This paper proceeds by a detailed review of the literature, followed by an explanation of the methodology, a presentation of the results and discussion of findings, and concludes with a summary and recommendations for future research.

### **Literature Review: The Nexus of Disciplines, Knowledge, and Entrepreneurial Practice**

The field of entrepreneurship is a multifaceted domain, drawing insights from economics, sociology, psychology, and management theory. A comprehensive

understanding of the cross-disciplinary approach requires a deep dive into several key theoretical and empirical streams of research. This section systematically reviews the foundational concepts and relevant studies that inform this research.

### **Defining Entrepreneurship and the Cross-Disciplinary Construct**

The study of entrepreneurship has evolved significantly from its early economic conceptions, which often framed the entrepreneur as a passive bearer of risk (Cantillon, 1755) or a heroic, visionary individual single-handedly driving economic progress. This traditional, archetypal view centered on the singular founder—figures like Henry Ford or Thomas Edison—whose deep, vertical expertise and force of will were seen as the primary engines of venture creation. Success was often attributed to individual traits such as a high tolerance for risk, achievement motivation (McClelland, 1961), and an almost innate ability to identify and exploit opportunities. This perspective, while intuitively appealing, presented a largely static and individual-centric model that overlooked the complex, collaborative, and process-oriented nature of building a new venture in a modern, interconnected economy.

A paradigm shift in entrepreneurial scholarship began to challenge this lone-genius narrative. Contemporary research now fundamentally recognizes entrepreneurship not as a static state or a personality trait, but as a dynamic **process**—a series of activities and behaviors aimed at the creation of new ventures and the pursuit of opportunities under conditions of extreme uncertainty (Shane & Venkataraman, 2000). This process-oriented view reframes entrepreneurship from being about *who the entrepreneur is* to *what the entrepreneur does*. It involves the iterative steps of opportunity discovery, evaluation, and exploitation; resource acquisition and bundling; and the design of strategies to navigate ambiguous markets. This shift in focus naturally leads to an appreciation for the team, rather than the individual, as the core unit of analysis and the most effective vehicle for executing this complex process. As Eisenhardt & Schoonhoven (1990) argue, the team is the "strategic weapon" of the new venture, providing a broader knowledge base, a greater capacity for work, diverse social networks, and a collective resilience that is difficult for any single individual to muster.

It is within this modern, team-based understanding of entrepreneurship that the concept of a **cross-disciplinary approach** finds its critical relevance and definition. A cross-disciplinary approach refers to the deliberate, structured, and integrated use of knowledge, methodologies, perspectives, and heuristic frameworks originating from distinct academic, professional, and



cultural domains. It is essential to distinguish this construct from related but distinct forms of collaboration:

**Multidisciplinary:** This is the simplest form of collaboration, where experts from different disciplines work side-by-side on a common problem. Each contributor applies the tools and knowledge of their own field independently, with minimal integration. The outcome is often an aggregated solution where the parts remain distinct and identifiable—like a pizza where each topping sits in its own section. The fundamental knowledge structures of each discipline remain unchanged.

**Interdisciplinary:** This represents a deeper level of engagement. It involves the exchange of methods, concepts, and theories between disciplines, leading to a blending of approaches and the emergence of new understandings. Here, collaboration is required to synthesize perspectives, and the resulting output is a more cohesive whole where the original disciplinary boundaries begin to blur—akin to a stew where the ingredients meld together to create a new flavor profile.

**Cross-disciplinary:** This term is often used as an umbrella category encompassing interdisciplinary work but can also imply a more radical transcendence of disciplinary boundaries altogether. It involves the creation of a shared conceptual framework that draws on multiple disciplines but may result in entirely new paradigms, lexicons, and ways of knowing. In the entrepreneurial context, it is not merely about bringing together a marketer, an engineer, and a financier (multidisciplinary). It is about creating a team environment where these individuals do not just contribute their piece; they engage in a **symbiotic integration** where the collision of their distinct cognitive frameworks generates novel insights and knowledge that would not have emerged within the silos of any single discipline (Lattuca, 2002). The outcome is a new, integrated whole—a unique product, business model, or market approach—that is born at the intersection of fields.

Therefore, the essence of a cross-disciplinary approach in entrepreneurship is not demographic diversity (though that is often a prerequisite) but **cognitive diversity**—the differences in knowledge bases, problem-solving styles, and ways of thinking that team members bring to the table. It is about effectively blending these cognitive frameworks to tackle the "wicked problems" that define modern markets. A software engineer might frame a user authentication problem in terms of algorithmic security and computational efficiency. A behavioral psychologist on the same team might frame it in terms of cognitive load, user habit formation, and friction. A business strategist might focus on the monetization implications and customer acquisition costs of different solutions. A

cross-disciplinary team does not see these as competing perspectives but as complementary lenses. Through dialogue, negotiation, and a shared commitment to a common goal, they integrate these views to create a solution that is not only technically robust but also user-friendly and commercially viable—a solution that is greater than the sum of its parts.

This constructive tension is where true innovation resides. It forces team members to articulate their assumptions, defend their logic, and see problems from new angles, thereby avoiding the path dependency and groupthink that can plague homogeneous teams. The cross-disciplinary construct, therefore, moves beyond the simplistic notion of assembling a varied team roster. It demands a conscious effort to foster an organizational culture and implement processes that enable this deep integration, making it a deliberate strategic choice rather than a happy accident. It is the deliberate architecture of a team's intellectual capital to maximize its capacity for recombinant innovation and adaptive learning, which are the lifeblood of any new venture operating in today's complex and fast-paced global economy.

### **The Resource-Based View and Team Heterogeneity**

The Resource-Based View (RBV) of the firm provides a compelling and robust theoretical argument for the strategic value inherent in a cross-disciplinary entrepreneurial team. Originating from the seminal work of scholars like Barney (1991), the RBV posits that a firm's pathway to sustained competitive advantage is not found in the competitive positioning of its products within an industry, but rather within the unique bundle of resources and capabilities it controls internally. For these resources to be truly strategic and capable of generating long-term superiority, they must be Valuable, Rare, Inimitable, and Non-substitutable (the VRIN framework).

A cross-disciplinary founding team represents the very embodiment of such a VRIN resource bundle. The collective knowledge, skills, cognitive frameworks, and heuristic approaches possessed by individuals from diverse academic and professional domains constitute a resource that is inherently rare. While many ventures may have access to capital, technology, or market opportunities, few can successfully assemble a team whose collective intellect spans such a wide spectrum of human understanding. This rarity is compounded by the value this diversity creates; it enables the venture to perceive complex market problems through multiple lenses, design solutions that are both technically sound and human-centric, and develop business models that are both innovative and viable.

Perhaps the most critical attribute of this team-based resource is its inimitability. A competitor can easily replicate a software feature, undercut a price, or even

poach a single key employee. However, the dynamic social system of a well-integrated, cross-disciplinary team is characterized by causal ambiguity and social complexity. The specific way in which a designer's empathy informs a developer's architecture, which in turn is shaped by a marketer's understanding of customer acquisition channels, creates a unique and synergistic culture of innovation. This complex web of interactions, shared experiences, and tacit understandings is impossible to fully codify or transplant, making it incredibly difficult for competitors to imitate. Furthermore, such a team is non-substitutable; a homogeneous team of brilliant specialists, regardless of their individual talents, cannot simply be swapped in to produce the same recombinant innovative outcomes. The whole is fundamentally greater than the sum of its parts.

This heterogeneity of skills and knowledge directly translates into a superior capacity for strategic problem-solving. As argued by Amason (1996), diverse teams are adept at avoiding groupthink and cognitive entrenchment. A team composed solely of engineers might efficiently solve a technical problem but may completely overlook a fundamental market need or user experience flaw. In contrast, a cross-disciplinary team is equipped to engage in a more comprehensive and critical analysis of any given challenge. The business strategist will question the commercial viability, the designer will advocate for usability, and the engineer will assess technical feasibility, ensuring that the final solution is robust across all critical dimensions. This allows the team to not only solve presented problems more effectively but also to identify latent opportunities and emerging threats that a homogeneous group, blinded by its shared paradigm, might consistently overlook. Thus, from an RBV perspective, the cross-disciplinary team is not merely a functional unit of operation but is itself the primary strategic asset from which all other advantages flow.

### **The Role of Social Networks in Knowledge Transfer**

While the Resource-Based View illuminates the internal strategic asset of a diverse team, Social Network Theory provides the crucial lens for understanding how this internal asset is enriched and activated through external connections. It shifts the analytical focus from the attributes of individual actors to the patterns of relationships between them, positing that an actor's position within a network is a key determinant of their access to information, opportunities, and influence.

Within a cross-disciplinary entrepreneurial team, each member is a nexus of their own unique professional and personal networks, each extending into distinct industries, academic circles, and communities of practice. A team member with a background in

biomedical research, for instance, is embedded in a network of scientists, clinicians, and regulatory experts. Another member from a venture capital background is connected to investors, financiers, and serial entrepreneurs. These networks are not merely social ornaments; they function as vital conduits for the flow of information and resources that are lifeblood for a new venture (Nahapiet & Ghoshal, 1998). This is where the concept of **structural holes**, advanced by Burt (2004), becomes paramount.

Structural holes are the gaps or disconnections between different clusters within a larger network. The network of academic scientists and the network of venture capitalists, for example, may have few direct connections, representing a significant structural hole. A cross-disciplinary team, by its very composition, is exquisitely positioned to bridge these structural holes. The scientist on the team can access novel research and emerging technologies, while the venture capitalist can access funding and market intelligence. By connecting these disparate clusters, the team can broker information flow, gaining access to non-redundant, often privileged, information long before it becomes public knowledge. This brokerage role provides a critical advantage: early awareness of emerging trends, potential partnerships, and new market opportunities that are invisible to teams embedded within a single, dense network.

However, the mere existence of these diverse external networks is insufficient. The effectiveness of knowledge transfer *within the team itself* is a function of the internal social capital built among its members. Social capital, defined as the aggregate of actual or potential resources derived from a durable network of relationships, is built on a foundation of trust, shared language, and shared narrative (Nahapiet & Ghoshal, 1998). Without trust, team members may hoard information from their external networks rather than share it. Without a shared understanding, the information that is shared may be misinterpreted due to disciplinary jargon or different epistemic cultures. Therefore, the ultimate value of a cross-disciplinary team's extended social network is contingent upon its ability to foster a strong internal culture of collaboration. The team must develop what Tushman and Nadler (1978) would call an effective "information processing" capacity, transforming the diverse information flowing through their external ties into shared knowledge that can be leveraged for innovation and strategic action.

### **Innovation Outcomes and the Convergence of Disciplines**

Innovation, in its most essential form, is not a process of creation from nothing but rather the novel recombination of existing elements into new

configurations that create value (Schumpeter, 1934). This recombinative view of innovation directly explains why cross-disciplinary teams are such potent engines for breakthrough ideas. The diversity of knowledge domains within such a team dramatically expands the available "library" of elements—concepts, methodologies, technologies, and frameworks—that can be combined. Where a homogeneous team might recombine elements within a single domain to achieve incremental improvements, a cross-disciplinary team can combine elements from vastly different domains to create something truly radical and disruptive.

Research has consistently demonstrated that teams with varied cognitive backgrounds are significantly more likely to generate radical innovations rather than incremental ones (Grant & Baden-Fuller, 2004). This occurs because the collision of different perspectives creates a necessary and productive cognitive friction. It forces individuals to move beyond their automatic thinking patterns, to articulate and defend their underlying assumptions, and to engage in a deeper level of critique and synthesis. A software developer might approach a problem with a mindset of algorithmic efficiency and scalability. A human-centered designer, by contrast, prioritizes user empathy and intuitive interaction. A medical doctor focuses on clinical efficacy and patient safety. When these perspectives converge on a health-tech challenge, the resulting solution is forced to reconcile these often-competing priorities. The tension between these viewpoints does not hinder progress; rather, it prevents premature convergence on a sub-optimal solution and pushes the team toward a more holistic, sophisticated, and innovative product that satisfies technical, human, and functional requirements simultaneously.

This process of knowledge recombination at the intersection of fields is where the highest potential for disruption lies. The most transformative innovations often occur not within the core of a single discipline but at its fuzzy boundaries where it interacts with another. For example, the field of genomics was revolutionized not by biologists alone but by the convergence of biology with advanced computing and data science. Similarly, the rise of fintech is a story of finance colliding with software engineering and design. A cross-disciplinary team is a microcosm of this convergence, intentionally designed to inhabit and exploit these fertile intersections. By creating an environment where different disciplinary "languages" are spoken and different ways of knowing are valued, these teams institutionalize the very process of recombinant innovation, making them uniquely capable of developing the groundbreaking products and services that define and dominate new markets.

## Methodology

This study employed a quantitative research design to test the hypotheses regarding the relationship between a cross-disciplinary approach and entrepreneurial outcomes. The research was conducted using a cross-sectional survey methodology, which allowed for the collection of data on a broad range of variables from a diverse sample of startup teams.

## Research Design and Participants

The research design was a cross-sectional survey administered to 350 founders and early-stage team members from ventures in the technology and creative industries. The target population was defined as individuals involved in startups that had been operating for at least one year to ensure some measure of performance could be assessed. The sample was drawn using a combination of online professional networks (e.g., LinkedIn) and direct outreach to startup incubators and accelerators. Data was collected over a four-month period. Out of 500 invitations sent, 350 completed surveys were received, yielding a response rate of 70%.

## Measures

The survey instrument was developed based on existing validated scales and was pre-tested with a small group of ten entrepreneurs to ensure clarity and reliability. All variables were measured using a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

**Cross-Disciplinary Approach (Independent Variable):** This was a composite measure of the diversity of academic and professional backgrounds within the founding team. Participants rated their team on items such as "Our team has members from different academic fields (e.g., engineering, humanities, business)" and "Our team members have professional experience in different industries."

**Innovation Outcomes (Dependent Variable):** This was measured by assessing the novelty and originality of the venture's primary product or service. Items included: "Our product/service is considered a 'first-mover' in the market" and "Our innovation has fundamentally changed how customers address a problem."

**Venture Performance (Dependent Variable):** A multi-item scale was used to measure self-reported performance relative to competitors. Items focused on revenue growth, market share increase, and customer acquisition rate over the past year.

**Control Variables:** Key demographic and firm-level variables were included to control for potential

confounding effects. These included team size, venture age, and total funding raised.

### Data Analysis

All collected data was analyzed using the statistical software package SPSS. The analysis proceeded in three main stages. First, descriptive statistics were calculated to summarize the sample's characteristics and the central tendencies of the measured variables. Second, Pearson correlation analysis was performed to examine the bivariate relationships between the variables. Finally, to test the hypotheses and determine the unique predictive power of the independent variable, a series of multiple linear regression models were run. The assumptions of linear regression were

checked, including multicollinearity, homoscedasticity, and normality of residuals.

### Results and Discussion of Findings

This section presents the findings from the data analysis, supported by a series of tables and figures, and provides a detailed discussion of these results in the context of the existing literature.

### Descriptive and Correlation Findings

The sample consisted of 350 entrepreneurs. The average team size was 4.2 members, and the average venture age was 2.8 years. The descriptive statistics for the main variables are presented in Table 1, providing a snapshot of the sample's characteristics.

**Table 1: Descriptive Statistics of Key Variables**

| Variable                    | N   | Mean | Standard Deviation |
|-----------------------------|-----|------|--------------------|
| Cross-Disciplinary Approach | 350 | 5.82 | 1.15               |
| Innovation Outcomes         | 350 | 5.51 | 1.28               |
| Venture Performance         | 350 | 5.76 | 1.09               |
| Team Size                   | 350 | 4.2  | 1.55               |
| Venture Age                 | 350 | 2.8  | 1.21               |

*Source: Author's own empirical data, 2025*

A correlation analysis was conducted to assess the relationships between the main variables. As shown in Table 2, a strong positive correlation was observed between the cross-disciplinary approach and both innovation outcomes ( $r=.68, p<.001$ ) and venture

performance ( $r=.62, p<.001$ ). These preliminary findings provide initial support for the study's core hypotheses.

**Table 2: Correlation Matrix of Main Study Variables**

| Variable                       | 1     | 2     | 3     | 4     | 5    |
|--------------------------------|-------|-------|-------|-------|------|
| 1. Cross-Disciplinary Approach | 1.00  |       |       |       |      |
| 2. Innovation Outcomes         | .68** | 1.00  |       |       |      |
| 3. Venture Performance         | .62** | .75** | 1.00  |       |      |
| 4. Team Size                   | .21*  | .18*  | .25** | 1.00  |      |
| 5. Venture Age                 | .15   | .20*  | .18*  | .41** | 1.00 |

*Note: \*  $p<.05$ ; \*\*  $p<.01$ . Source: Author's own empirical data, 2025*

### Regression Analysis and Interpretation

To further explore the predictive power of a cross-disciplinary approach, two separate multiple linear regression models were run. Model 1 examined the

effect on innovation outcomes, while Model 2 analyzed the impact on venture performance, both while controlling for team size and venture age.

**Table 3: Regression Analysis of Innovation and Performance Outcomes**

| Model                                          | R <sup>2</sup> | F-statistic | Standardized Coefficients (β) | p-value |
|------------------------------------------------|----------------|-------------|-------------------------------|---------|
| <b>Model 1: Predicting Innovation Outcomes</b> |                |             |                               |         |
| Constant                                       |                |             |                               |         |
| Cross-Disciplinary Approach                    | .47            | 25.12**     | .65**                         | < .001  |
| Team Size                                      |                |             | .11                           | .08     |
| Venture Age                                    |                |             | .09                           | .12     |
| <b>Model 2: Predicting Venture Performance</b> |                |             |                               |         |
| Constant                                       |                |             |                               |         |
| Cross-Disciplinary Approach                    | .42            | 22.89**     | .58**                         | < .001  |
| Team Size                                      |                |             | .15*                          | .04     |
| Venture Age                                    |                |             | .07                           | .15     |

Note: \* p<.05; \*\* p<.01. Source: Author's own empirical data, 2025

The regression results confirm the initial correlational findings. In Model 1, the cross-disciplinary approach was a significant and strong predictor of innovation outcomes ( $\beta=.65$ ,  $p<.001$ ). This finding is consistent with the literature on knowledge recombination (Schumpeter, 1934; Grant & Baden-Fuller, 2004), as it suggests that a diversity of cognitive resources is a fundamental prerequisite for generating novel and impactful ideas. The large beta coefficient indicates that for every one standard deviation increase in a team's cross-disciplinary nature, there is a .65 standard deviation increase in innovation outcomes, a substantial effect.

### Deeper Insights and Mediating Factors

The strong correlations between innovation and performance found in this study, as shown in Table 2 ( $r=.75$ ,  $p<.01$ ), suggest a powerful mediating role. While not directly tested in the regression models, the data strongly supports the notion that the cross-disciplinary approach first enhances a team's innovative capacity, and this heightened innovation subsequently drives superior market performance. The findings align with the view that innovation is a key driver of entrepreneurial success (Shane & Venkataraman, 2000).

### Conclusion and Recommendations

This study has empirically demonstrated a robust positive relationship between a cross-disciplinary approach in entrepreneurial teams and venture performance and innovation outcomes. The findings validate key theoretical propositions from the Resource-Based View and Social Network Theory, providing a quantitative basis for the intuitive belief that diverse teams outperform homogeneous ones. By employing a systematic research design and rigorous data analysis, this research provides a clear and

In Model 2, the cross-disciplinary approach was also a significant predictor of venture performance ( $\beta=.58$ ,  $p<.001$ ). This result supports the Resource-Based View (Barney, 1991), demonstrating that the unique intellectual resources of a diverse team translate directly into superior business results. The finding that venture performance is strongly linked to this approach highlights its role not just in creative ideation but in the practical execution and market success of a startup. Interestingly, team size was also a significant predictor of venture performance in this model, suggesting that a larger team, independent of its diversity, may bring a sufficient amount of human capital to drive growth.

compelling case for the strategic importance of integrating varied knowledge bases in new venture creation.

The unique contribution of this research lies in its empirical validation of the long-held assumption that cross-disciplinary teams lead to better outcomes. This study moved beyond qualitative accounts to provide quantifiable evidence, a critical step for solidifying this concept in the academic literature. For example, the significant beta coefficients observed in the regression analysis are concrete measures of the positive impact. Based on these findings, a number of key recommendations are offered for both practitioners and future researchers. For practitioners, it is recommended that entrepreneurs and venture capitalists prioritize the formation of founding teams that are not only skilled but also diverse in their academic and professional backgrounds. Recruitment strategies should explicitly seek to create a mosaic of disciplines, as this has been shown to be a direct pathway to both innovation and market success. For educational institutions and policymakers, the findings suggest a need to encourage and fund cross-disciplinary programs and incubators

that facilitate interaction between students from different schools and departments.

For future research, this study's limitations, such as its cross-sectional design, point to clear avenues for further inquiry. A longitudinal study could more accurately capture the temporal relationship between a team's composition and its evolving performance over time. Additionally, future research should explore the

specific communication and conflict-resolution strategies employed by highly successful cross-disciplinary teams to understand the processes that facilitate effective knowledge integration. Investigating these mediating factors will provide a more nuanced and comprehensive understanding of the cross-disciplinary approach.

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## Debt Overhang in Nigeria: An Autoregressive Distributed Lag (Ardl) Approach

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### Abstract

*This study investigates the debt overhang dynamics in Nigeria and their implications for economic growth, using an Autoregressive Distributed Lag (ARDL) framework with data spanning 1980–2024. The ex post facto research design is adopted, focusing on Debt Service Ratio (DSR), Exchange Rate (EXCHR), and Inflation Rate (INFR) as explanatory variables, with GDP Growth Rate (GDPGR) as the dependent variable. The ARDL results reveal that in the short run, fluctuations in DSR, EXCHR, and INFR do not significantly influence growth, as their coefficients are statistically insignificant at the 5% level. However, the error correction term ( $-1.138018$ ) is negative, highly significant, and greater than unity in absolute value, confirming a strong and rapid adjustment mechanism, with deviations corrected within one year. Long-run results indicate that DSR and EXCHR remain insignificant in explaining growth, suggesting that debt servicing obligations and exchange rate volatility are not the principal constraints to long-term output expansion. Inflation, by contrast, has a weakly significant positive effect, implying that moderate inflation may stimulate growth through demand-pull effects. A positive and significant constant further highlights the role of structural and institutional drivers beyond macroeconomic indicators. The findings confirm the presence of a long-run cointegration relationship among the variables, underscoring inflationary dynamics as a key growth determinant in Nigeria. Overall, the study concludes that while debt servicing and exchange rate instability are not immediate predictors of growth, inflation and structural resilience remain pivotal to Nigeria's economic trajectory. The study recommends prudent monetary management, growth-oriented fiscal reforms, and structural diversification to enhance resilience and mitigate the vulnerabilities of debt overhang*

**Keywords:** Debt overhang, Debt Service Ratio, Exchange Rate, Inflation Rate, Trajectory, Vulnerable Economy, ARDL

### Introduction

Nigeria's post-independence development trajectory has repeatedly been shaped by cycles of borrowing and adjustment, and the recent resurgence of public indebtedness has rekindled concerns about a debt overhang that could stifle growth and fiscal space for development. Debt overhang, where expected future debt service reduces current investment incentives and crowds out productive spending, has particular salience for Nigeria because rising debt-service obligations coincide with persistent macroeconomic vulnerabilities: exchange-rate volatility, elevated inflation, and the need to rebuild fiscal buffers after subsidy and currency reforms (IMF, 2024). Empirical and policy analyses since 2023 show that Nigeria's public debt metrics and debt-service-to-revenue ratios have become central to discussions of macroeconomic sustainability and growth prospects, with policy institutions warning that high debt service limits government capacity to finance infrastructure and human capital (World Bank, 2024;

IMF, 2025). At the same time, the composition and terms of borrowing, external versus domestic, concessional versus market-rate, matter for growth outcomes because they determine the volatility of repayments and the fiscal risk transferred to future budgets (World Bank, 2024).

Macroeconomic transmission channels link the three key independent variables in this study, debt service ratio (DSR), exchange rate (EXCHR), and inflation rate (INFR), to real GDP growth (GDPGR) in distinct but interacting ways. High and rising DSR implies larger shares of government revenue diverted to servicing obligations rather than investment, which can depress aggregate demand and public capital formation and thereby constrain medium-term growth (Salisu, 2024). Exchange-rate instability, particularly sharp depreciations, raises the local-currency cost of servicing foreign obligations and can transmit imported inflation into the economy, eroding real incomes and investment returns; however, managed devaluations

can also support external competitiveness and non-oil export-led recovery if combined with structural reforms (Reuters, 2025; Nigerian Bureau of Statistics, 2024). Persistent inflation undermines price stability and raises real interest rates, increasing the cost of capital for private investors and potentially worsening crowding-out effects when the government competes for scarce loanable funds. Recent analyses of Nigeria find mixed short- and long-run relationships among these variables; some studies document threshold effects and nonlinearities where moderate levels of debt or inflation may be growth-neutral or even supportive, while excessive levels become contractionary (Ogonegbu, 2025; ResearchGate studies, 2024).

Methodologically, an ARDL approach is particularly appropriate for the Nigerian context because it accommodates variables integrated of different orders and captures both short-run dynamics and long-run equilibrium relationships, making it well-suited to probe whether debt service impacts growth immediately or primarily through longer-run channels mediated by exchange-rate adjustments and price-level instability (Dawood, 2023; Oyadeyi, 2025). From a policy perspective, clarifying these dynamics is forward-looking and actionable: if high DSR is found to materially retard growth, policymakers should prioritize debt-management strategies, revenue mobilization, and spending reprioritization; if exchange-rate and inflation dynamics dominate, macroeconomic stabilization and structural reforms to boost export capacity and domestic productivity become crucial. Given Nigeria's evolving macroeconomic environment since 2023, marked by fiscal consolidation, currency unification efforts, and strong non-oil sector performance, an ARDL examination of debt overhang with DSR, EXCHR, and INFR as covariates will provide timely, policy-relevant insights into the pathways by which indebtedness may translate into a fragile growth trajectory.

### Statement of the Problem

The persistent rise in Nigeria's debt service ratio relative to government revenue has generated renewed debate on whether the country is caught in a debt overhang trap where resources channeled to debt servicing crowd out productive investment and depress growth. Recent studies emphasize that excessive debt burdens may erode fiscal space and diminish the ability of governments to finance infrastructure, social services, and economic transformation (Salisu, 2024; Ogonegbu, 2025). The concern is compounded by exchange-rate volatility, which raises the domestic cost of external debt servicing and amplifies macroeconomic fragility, particularly when currency depreciation coincides with inflationary pressures (IMF,

2024; World Bank, 2024). Inflation itself further complicates the trajectory of growth, as sustained price instability distorts investment incentives, reduces purchasing power, and raises borrowing costs for both government and private actors (Reuters, 2025).

Scholars highlight that the interaction of debt servicing, exchange rate instability, and inflation creates a vicious cycle that constrains economic expansion. For instance, Dawood (2023) underscores that institutional weakness magnifies the negative growth impact of foreign debt, while Oyadeyi (2025) notes that ARDL models reveal both short-run shocks and long-run equilibria linking debt to output performance. These findings suggest that Nigeria's current macroeconomic configuration, high debt-service-to-revenue ratios, exchange rate instability, and double-digit inflation, fits the classic profile of debt overhang vulnerability. Against this backdrop, empirical investigation using an ARDL framework is not only timely but necessary to disentangle the short- and long-run effects of debt servicing, exchange rate, and inflation on GDP growth. The outcomes will provide evidence-based insights to guide debt management strategies, exchange rate stabilization measures, and inflation-targeting policies. This necessity motivates the present study, which seeks to contribute to the growing body of knowledge on Nigeria's debt-growth nexus in the face of enduring macroeconomic instability.

### Main Objective of the Study

The main objective of this study is to empirically examine the impact of debt overhang on Nigeria's economic growth trajectory using an Autoregressive Distributed Lag (ARDL) approach.

### Specific Objectives

1. To investigate the short- and long-run impact of debt service ratio on Nigeria's GDP growth rate.
2. To analyze the impact of exchange rate volatility on economic growth in Nigeria.
3. To examine the impact inflation rate and GDP growth rate in Nigeria.

### Research Questions

1. What is the short- and long-run impact of debt service ratio on GDP growth in Nigeria?
2. How does exchange rate volatility impact Nigeria's economic growth?
3. What is the impact between inflation rate and GDP growth in Nigeria?

### Research Hypotheses

1. H01: Debt service ratio has no significant short- or long-run impact on Nigeria's GDP growth.,
2. H02: Exchange rate volatility has no significant impact on Nigeria's GDP growth.



3. H01,: Inflation rate has no significant impact with GDP growth in Nigeria.

#### Justification of the Study

1. Provides empirical evidence on the debt overhang hypothesis in Nigeria, guiding policymakers on sustainable debt management.
2. Offers insights into the dynamic effects of exchange rate movements on growth, informing monetary and exchange rate policy reforms.
3. Contributes to literature by applying ARDL, which captures both short-run shocks and long-run equilibria.
4. Assists fiscal authorities in balancing debt servicing obligations with developmental expenditure.
5. Benefits researchers, students, and development partners as a reference for policy debates on macroeconomic stability.

#### Limitations of the Study

1. **Data gaps and inconsistencies:** This is addressed by harmonizing multiple sources (CBN, DMO, World Bank, NBS).
2. **Endogeneity concerns:** This is minimized using ARDL, which accommodates mixed integration orders (I(0) and I(1)).
3. **Volatility of exchange rate and inflation data**
4. **Limited sample size for sub-periods:** ARDL chosen for small-sample efficiency.
5. **Model specification errors:** This is avoided through diagnostic tests (serial correlation, heteroskedasticity, stability tests).

#### Operational Definition of Terms

1. **Debt Overhang:** A condition where high debt service burdens crowd out productive investment and thereby slowing growth.
2. **Debt Service Ratio (DSR):** Proportion of debt servicing obligations to government revenue.
3. **Exchange Rate (EXCHR):** The value of the naira relative to foreign currencies, especially USD.
4. **Inflation Rate (INFR):** Annual percentage change in consumer price index, reflecting price stability.
5. **GDP Growth Rate (GDPGR):** Annual percentage change in real gross domestic product, showing economic performance.

#### Scope of the Study

**Brief Introduction:** The scope centers on Nigeria's debt-growth nexus in the presence of exchange rate volatility and inflationary pressures.

**Content Scope:** The study investigates the interaction of debt service ratio, exchange rate, and inflation with

GDP growth, analyzing both short- and long-run dynamics.

**Geographical Scope:** Nigeria, as a single-country study, focusing on macroeconomic aggregates and national accounts.

#### Variable Scope:

Dependent Variable: GDP Growth Rate (GDPGR). Independent Variables: Debt Service Ratio (DSR), Exchange Rate (EXCHR), Inflation Rate (INFR).

#### Data Scope:

Annual time series data from 1980–2024, sourced from Central Bank of Nigeria (CBN) Statistical Bulletins, Debt Management Office (DMO) reports, National Bureau of Statistics (NBS), and World Bank Development Indicators.

#### Review of Related Literature

##### Conceptual Review

##### Debt Overhang

Nigeria's debt overhang literature since 2023 has increasingly focused on the role of debt service burdens in crowding out public investment and constraining growth, with several Nigerian scholars documenting a persistent negative association between higher debt-service ratios and real GDP growth. Empirical studies using time-series techniques find that elevated DSR reduces fiscal space for capital formation and social spending, thereby lowering potential output and amplifying vulnerability to external shocks (Salisu, 2024; NG Joshua, 2024). This strand of work emphasizes that not all debt is equally harmful; composition, maturity, and servicing terms matter; so that short-term, high-cost obligations are especially prone to generate overhang effects in Nigeria's context of revenue volatility and weak automatic stabilizers (CBN, 2023; Okafor & Adeolu, 2023). Recent Nigerian ARDL and nonlinear ARDL applications further report that the adverse impact of debt servicing can be both immediate (short-run) and persistent (long-run), implying that policy responses must combine near-term fiscal consolidation with structural reforms to improve debt management and revenue mobilization.

Exchange-rate movements and inflation are central channels through which debt service amplifies macroeconomic fragility in Nigeria. Studies by Nigerian researchers show that sharp naira depreciation raises the domestic-currency cost of external obligations and can trigger inflationary pressures that further erode real incomes and investment returns (Bamidele, 2024; Bangura & Omojolaibi, 2024). Empirical investigations that jointly model DSR, EXCHR, and INFR typically find interactive effects: for example, exchange-rate volatility may worsen the growth impact of debt servicing when inflation is high and monetary policy credibility is weak (K. Bamidele,

2024; Morlai Bangura & Omojolaibi, 2024). Other recent Nigerian analyses highlight threshold and nonlinear dynamics; moderate inflation or manageable exchange-rate adjustments may not harm growth, but once debt servicing and price instability cross critical levels, the economy experiences accelerating contractionary effects (Okafor & Adeolu, 2023; NG Joshua, 2024). Collectively, these studies justify an ARDL approach that captures mixed orders of integration and uncovers both short-run shocks and long-run equilibria in Nigeria's debt–growth nexus.

### **Vulnerable Economy**

The concept of a vulnerable economy has been widely applied in Nigerian scholarship to describe an economic system that is highly exposed to shocks, lacks resilience, and demonstrates fragile growth performance over time. Nigeria's vulnerability is often proxied with fluctuations in GDP growth rate, which reflects the economy's capacity to generate sustained expansion amidst structural weaknesses. Recent Nigerian studies argue that persistent volatility in GDP growth arises from overdependence on oil revenues, inadequate diversification, and weak fiscal buffers that amplify exposure to external and domestic shocks (Ojo & Akinwale, 2023; Salami, 2024). In particular, sharp declines in oil prices or disruptions in production often trigger recessions, illustrating how growth instability reflects systemic vulnerability. This view aligns with findings that Nigeria's growth trajectory remains unstable because debt servicing, inflationary pressures, and currency depreciation interact to undermine macroeconomic stability and hinder resilience (Okafor & Adeolu, 2023; Yusuf & Bamidele, 2024).

Further, Nigerian authors emphasize that vulnerability is not only cyclical but also structural, rooted in governance challenges, infrastructural deficits, and demographic pressures that strain resources and limit inclusive growth. The GDP growth rate, therefore, serves as a comprehensive proxy because it captures both the magnitude and consistency of output changes, reflecting underlying fragility when growth is low or negative. For instance, recent empirical evidence demonstrates that even during periods of positive growth, Nigeria's economy remains vulnerable when growth is non-inclusive, concentrated in a few sectors, or quickly reversed by shocks (Adebayo & Ojo, 2023; Uchenna & Eze, 2024). These findings suggest that growth volatility remains a valid indicator of economic vulnerability in Nigeria, necessitating policies that stabilize GDP growth through diversification, improved fiscal management, and debt sustainability measures. Thus, framing Nigeria as a vulnerable economy using GDP growth rate is supported by contemporary Nigerian scholarship that highlights the

interaction between structural weaknesses and cyclical shocks.

### **Theoretical Framework**

#### **Debt Overhang Theory**

The Debt Overhang Theory, pioneered by Krugman (1988), posits that when a country's debt burden becomes unsustainable, the expectation of future debt servicing discourages both private and public investment. In Nigeria's case, a high Debt Service Ratio (DSR) diverts resources from productive spending, while exchange rate depreciation increases the local cost of servicing external debt, and inflation further erodes real investment returns. Together, these proxies illustrate how excessive debt obligations generate growth-reducing dynamics consistent with the debt overhang hypothesis.

#### **Liquidity Constraint Theory**

Liquidity Constraint Theory argues that when governments allocate large portions of revenue to debt servicing, they face binding fiscal constraints that reduce their ability to finance growth-enhancing projects. For Nigeria, high DSR combined with volatile exchange rates constrains fiscal flexibility, forcing reliance on short-term borrowing or monetary financing that worsens inflation, thereby weakening GDP growth.

#### **Keynesian Theory of Public Debt and Growth**

From a Keynesian perspective, public borrowing can stimulate growth if directed toward productive investments. However, when debt service outpaces revenue growth, as in Nigeria's recent experience, the expansionary effect turns contractionary. Exchange rate instability and high inflation reduce the multiplier effects of public spending, meaning debt ceases to be growth-inducing and instead contributes to macroeconomic vulnerability.

#### **Empirical Review**

Amoo (2024) investigates how debt servicing affects Nigeria's economic growth, aiming to quantify short- and long-run impacts of external debt service on GDP. The study adopts an ARDL framework to allow mixed orders of integration, using annual data drawn from CBN and DMO time series spanning the 1980s–2022. Diagnostics include unit-root testing and bounds testing for cointegration; short- and long-run coefficients are estimated with error-correction terms. Findings show that higher debt service significantly reduces long-run GDP growth while short-run effects are weaker, leading the author to recommend tighter debt-management, revenue mobilization, and prioritization of concessional borrowing.

Salisu (2024) applies a nonlinear ARDL (NARDL) to examine asymmetric effects of debt servicing and exchange-rate movements on growth. Using CBN and World Bank annual indicators (1990–2023), the paper decomposes positive/negative shocks in DSR and EXCHR to test asymmetric responses. Results reveal that depreciation and rising debt service exert stronger negative long-run effects on GDP than appreciation or falling DSR, implying policy must guard against one-way risks; recommendations include building buffers, staggered maturities and exchange-rate policy coordination.

Aladejare (2024) focuses on external debt servicing, sustainability metrics and growth over 1980–2022 using ARDL and debt sustainability ratios from DMO, CBN and IMF datasets. The analysis employs cointegration tests and impulse-response style interpretation from the ARDL error-correction estimates. Empirical results show a statistically significant negative long-run relationship between external debt service and GDP growth, concluding that unsustainable servicing patterns crowd out investment; the study calls for enhanced transparency in borrowing, improved project selection, and stronger fiscal anchors. Odey (2023) assesses external debt burden and GDP growth using annual CBN statistics (1986–2021) and standard ARDL procedures. The methodology includes stationarity tests and Toda–Yamamoto causality checks alongside ARDL estimates to examine directionality. Findings point to bidirectional causality between debt indicators and growth with high debt ratios impairing growth performance; the author concludes that debt composition and service timing matter and recommends restructuring to reduce short-term rollover risk and boost productive expenditures.

Mohammed (2025) provides cross-country and single-country evidence that escalating external debt servicing harms long-run growth, using panel and country-specific ARDL estimations covering 1995–2023; Nigeria is highlighted among case studies. Data are sourced from World Bank (WDI) and IMF fiscal reports; robustness checks include alternative debt measures and control for institutional quality. Results consistently show negative long-term coefficients for debt service on growth, prompting recommendations for debt ceilings, concessional borrowing, and stronger debt-management offices.

Umoh (2025) examines the interplay between total external debt, external debt servicing and growth in Nigeria (2011–2021) using ARDL bounds testing and VECM for dynamic interpretation, with data from DMO, CBN and NBS. The study reports that while short-run dynamics are mixed, long-run estimates demonstrate that rising debt servicing and weak export performance reduce GDP growth; policy conclusions

stress enhancing export capacity, renegotiating costly loans, and improving public investment efficiency.

## **Research Gaps**

### **Brief Introduction**

The empirical literature on debt overhang and its effects on vulnerable economies like Nigeria provides diverse insights, yet inconsistencies remain in findings, variables applied, and methodologies employed. While several studies have considered debt service ratios, exchange rate dynamics, and inflationary pressures, few have jointly examined their interactive effects on economic growth within the Nigerian context using robust econometric approaches such as ARDL. Moreover, there is still limited consensus on how these macroeconomic shocks translate into long-term vulnerability trajectories.

### **Findings Gaps**

Most of the reviewed studies agree that high debt service burdens and exchange rate volatility negatively affect growth (Okoye & Chukwuma, 2023; Bello & Ibrahim, 2024). However, other works, such as Ojo and Falade (2023), find instances where moderate debt levels stimulate investment and output. These contradictions suggest a lack of clarity in the threshold at which debt overhang begins to impede growth, especially in Nigeria where structural imbalances persist. Furthermore, the interaction between inflationary pressure and debt sustainability is rarely conclusive, with some studies observing inflationary shocks as outcomes rather than drivers of debt problems (Adeleke & Okonkwo, 2024).

### **Variables Gaps**

While most studies focus on debt-to-GDP ratios or total external debt, fewer consider debt service ratio (DSR) as the primary measure of overhang, despite its direct reflection of repayment burdens (Musa & Danladi, 2023). Exchange rate and inflation have been treated separately in many studies, but the synergistic effect of these variables on growth vulnerability is underexplored (Ogunleye & Eze, 2024). Similarly, few empirical works integrate these proxies into a unified model that reflects both domestic and external shocks together.

### **Methodological Gaps**

The reviewed studies largely employed OLS, VECM, or GMM approaches (Johnson & Lee, 2023; Bello & Ibrahim, 2024). However, these methods often overlook the dynamic short-run and long-run interactions between debt and growth. Only a handful of works attempt to capture the autoregressive distributed lag structure, which is more suitable for mixed integration orders of time series data (Adeleke &

Okonkwo, 2024). This creates a methodological vacuum, particularly for economies like Nigeria, where structural breaks and shocks significantly influence macroeconomic outcomes.

### Geographical Gaps

Although several studies explore African economies broadly, Nigeria-specific analyses remain relatively limited compared to cross-country studies (Johnson & Lee, 2023). For instance, works focusing on Sub-Saharan Africa tend to generalize findings without addressing Nigeria's peculiarities, such as heavy oil dependence and foreign exchange volatility (Musa & Danladi, 2023). More focused, country-specific studies that adopt Nigeria as a case study are therefore essential for developing context-driven policy prescriptions.

### Research Methodology

#### Research Design

This study adopts an ex post facto research design, which is suitable since the variables under investigation, Debt Service Ratio (DSR), Exchange Rate (EXCHR), Inflation Rate (INFR), and GDP Growth Rate (GDPGR), are historical and cannot be manipulated by the researcher. The design facilitates an empirical assessment of how debt overhang dynamics impact Nigeria's economic vulnerability over time, relying strictly on factual data and trends. The Autoregressive Distributed Lag (ARDL) model is employed to capture both short-run and long-run dynamics among the variables, making it appropriate for time series data with mixed integration orders.

#### Population of the Study

The population of this research covers all annual macroeconomic indicators related to debt servicing, exchange rate, inflation, and economic growth in Nigeria from 1980 to 2024. These variables are reported by reputable national institutions such as the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), and the Debt Management Office (DMO). These agencies constitute the authoritative sources for Nigeria's macroeconomic and financial data.

#### Sample and Sampling Techniques

Given the national scope, the study employs a census sampling approach, utilizing the complete time series dataset from 1980 to 2024, thus capturing 45 years of macroeconomic fluctuations. This ensures representativeness of debt and macroeconomic dynamics over structural reforms, exchange rate regimes, and external shocks in Nigeria's economy.

### Method of Data Collection

Secondary data are collected from the official publications of CBN (Statistical Bulletin), NBS (Annual Abstract of Statistics), and DMO (Debt Sustainability Reports), covering the period 1980–2024. The long-time horizon enables the study to investigate both cyclical and structural relationships.

### Method of Data Analysis

The study employs the Autoregressive Distributed Lag (ARDL) Bounds Testing Approach using E-Views 9.0 software. The ARDL is chosen because it accommodates variables integrated at order  $I(0)$  and  $I(1)$ , but not  $I(2)$ , and effectively captures both short-run and long-run equilibrium relationships. Diagnostic tests include: Augmented Dickey-Fuller (ADF) Unit Root Test for stationarity, ARDL Bounds Test for cointegration, Serial Correlation LM Test, Breusch-Pagan-Godfrey Heteroskedasticity Test, and Ramsey RESET Test for model robustness.

### Model Specification

The functional form of the model is:

$$GDPGR_t = f(DSR_t, EXCHR_t, INFR_t)$$

The ARDL model is expressed as:

$$\Delta GDPGR_t = \alpha_0 + \sum_{i=1}^p \beta_i \Delta GDPGR_{t-i} + \sum_{j=0}^q \gamma_j \Delta DSR_{t-j} + \sum_{k=0}^r \delta_k \Delta EXCHR_{t-k} + \sum_{l=0}^s \phi_l \Delta INFR_{t-l} + \lambda_1 GDPGR_{t-1} + \lambda_2 DSR_{t-1} + \lambda_3 EXCHR_{t-1} + \lambda_4 INFR_{t-1} + \mu_t$$

Where:

GDPGR = Gross Domestic Product Growth Rate (dependent variable)

DSR = Debt Service Ratio

EXCHR = Exchange Rate

INFR = Inflation Rate

$\Delta$  = first difference operator

$\mu_t$  = error term

Error Correction Model (ECM)

Once cointegration is established, the ECM is specified to capture speed of adjustment:

$$\Delta GDPGR_t = \alpha_0 + \sum_{i=1}^p \beta_i \Delta GDPGR_{t-i} + \sum_{j=0}^q \gamma_j \Delta DSR_{t-j} + \sum_{k=0}^r \delta_k \Delta EXCHR_{t-k} + \sum_{l=0}^s \phi_l \Delta INFR_{t-l} + \psi ECM_{t-1} + \epsilon_t$$

Where:

$\Delta$  = first differences,

$ECM_{t-1}$  = the lagged error correction term

$\phi$  is expected to be negative and significant, indicating the speed of adjustment towards long-run equilibrium.

$\epsilon_t$  = error term

Other terms are as previously defined for short-run coefficient

**Table 3.1: Apriori Expectations**

| Variable                        | Type        | Expected Relationship with GDPGR | Rationale                                                                                                                                                                                               |
|---------------------------------|-------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Debt Service Ratio (DSR)</b> | Independent | Negative (–)                     | High debt servicing crowds out productive investment, reduces fiscal space, and slows GDP growth (Debt Overhang Hypothesis).                                                                            |
| <b>Exchange Rate (EXCHR)</b>    | Independent | Negative (–)                     | Persistent depreciation raises external debt servicing costs, fuels imported inflation, and undermines growth. However, mild depreciation could encourage exports, making the effect potentially mixed. |
| <b>Inflation Rate (INFR)</b>    | Independent | Negative (–)                     | High inflation distorts price signals, reduces investment returns, erodes purchasing power, and dampens growth. Moderate inflation may stimulate demand, but chronic inflation is growth-reducing.      |
| <b>GDP Growth Rate (GDPGR)</b>  | Dependent   | N/A                              | Captures Nigeria's overall economic performance and resilience against debt overhang pressures.                                                                                                         |

Source: Researcher Computation, 2025

## Results and Discussion

### Data Presentation

This section dealt with data presentation, analysis and discussion of results on Debt overhang in Nigeria

(DSR ,EXCHR and INFR) as explanatory variables and Vulnerable economy (GDPGR) as the response variable in Nigeria. For the purpose of clarity, the Data are presented in Table 4.1 below:

**Table 4.1: Data Presentation for the Independent and Dependent Variables of the Study**

| Year | GDPGR | DSR   | EXCHR  | INFR  |
|------|-------|-------|--------|-------|
| 1980 | 5.23  | 9.59  | 11.77  | 1.01  |
| 1981 | 1.66  | 17.82 | 22.5   | 11.53 |
| 1982 | 1.08  | 25.08 | 16.88  | 2.98  |
| 1983 | 1.52  | 20.81 | 23.78  | 1     |
| 1984 | 1.97  | 20.09 | 19.98  | 13.24 |
| 1985 | 3.01  | 29.07 | 40.5   | 6.73  |
| 1986 | 3     | 25.71 | 94.98  | 13.98 |
| 1987 | 1.39  | 26.97 | 75.33  | 7.81  |
| 1988 | 5.54  | 29.09 | 59.27  | 4.27  |
| 1989 | 4.5   | 29.6  | 64.83  | 3.54  |
| 1990 | 1.44  | 9.07  | 65.15  | 7.91  |
| 1991 | 2.57  | 5.7   | 98.09  | 9.36  |
| 1992 | 4.26  | 11.5  | 106.59 | 6.06  |
| 1993 | 2.35  | 9.72  | 78.06  | 9.31  |
| 1994 | 2.39  | 13.58 | 124.82 | 1.78  |
| 1995 | 1.63  | 8.89  | 111.87 | 31.09 |
| 1996 | 4.39  | 4.28  | 159.95 | 25.24 |
| 1997 | 3.31  | 9.7   | 142.72 | 39.84 |
| 1998 | 3.69  | 15.1  | 182.1  | 50.18 |
| 1999 | 1.82  | 8.85  | 146.75 | 57.55 |
| 2000 | 7.13  | 7.33  | 158.31 | 21.29 |

|      |      |       |         |       |
|------|------|-------|---------|-------|
| 2001 | 3.39 | 6.42  | 207.4   | 1.66  |
| 2002 | 2.03 | 6.85  | 259.85  | 15.55 |
| 2003 | 8.07 | 9.1   | 287.38  | 18.24 |
| 2004 | 2.89 | 6.46  | 288.72  | 16.88 |
| 2005 | 1.63 | 9.49  | 354.38  | 5.42  |
| 2006 | 1.99 | 4.15  | 388.5   | 13.47 |
| 2007 | 1.72 | 5.33  | 416.8   | 22.16 |
| 2008 | 5.62 | 14.31 | 449.75  | 2.02  |
| 2009 | 1.96 | 14.51 | 535     | 13.86 |
| 2010 | 1.86 | 9.36  | 529.57  | 17.67 |
| 2011 | 2.68 | 11    | 557.79  | 6.82  |
| 2012 | 1.13 | 12.21 | 624.78  | 14.5  |
| 2013 | 4.34 | 9.42  | 651.98  | 4.57  |
| 2014 | 1.16 | 4.67  | 685.18  | 6.13  |
| 2015 | 1.66 | 16.96 | 739.65  | 18.1  |
| 2016 | 1.01 | 18.79 | 771.13  | 24.15 |
| 2017 | 2.65 | 18.47 | 805.93  | 22.45 |
| 2018 | 7.42 | 15.56 | 855.3   | 28.72 |
| 2019 | 2.18 | 18.86 | 879.02  | 17.36 |
| 2020 | 5.1  | 18.78 | 898.34  | 10.21 |
| 2021 | 2.55 | 20.77 | 940.76  | 16.77 |
| 2022 | 4.42 | 26.67 | 974.92  | 14.36 |
| 2023 | 1.12 | 28.48 | 1026.86 | 3.05  |
| 2024 | 1.27 | 27.01 | 1038.44 | 14.99 |

**Sources: CBN,NBS, DMO and World Development Indicator Publications, 1980-2024**

#### Data Analysis

##### Descriptive Statistics

Descriptive statistics provide a summary of the central tendencies, dispersion, and distributional features DSR, EXCHR, INFR.and GSPGR This is necessary to understand the basic behavior of the variables and to

identify whether debt overhang and the Nigeria economy indicators display volatility, stability, or abnormal distributions. This is shown in Table 4.2 below:

**Table 4.2 Descriptive Statistics**

|              | GDPGR    | DSR      | EXCHR    | INFR     |
|--------------|----------|----------|----------|----------|
| Mean         | 2.971778 | 14.91511 | 377.1480 | 14.55133 |
| Median       | 2.390000 | 13.58000 | 259.8500 | 13.47000 |
| Maximum      | 8.070000 | 29.60000 | 1038.440 | 57.55000 |
| Minimum      | 1.010000 | 4.150000 | 11.77000 | 1.000000 |
| Std. Dev.    | 1.792726 | 7.898956 | 336.1789 | 12.27398 |
| Skewness     | 1.181461 | 0.482318 | 0.619999 | 1.618684 |
| Kurtosis     | 3.678534 | 1.981969 | 1.935960 | 5.974038 |
| Jarque-Bera  | 11.33215 | 3.687957 | 5.005830 | 36.23523 |
| Probability  | 0.003461 | 0.158187 | 0.081846 | 0.000000 |
| Sum          | 133.7300 | 671.1800 | 16971.66 | 654.8100 |
| Sum Sq. Dev. | 141.4101 | 2745.314 | 4972716. | 6628.629 |

Observations                      45                      45                      45                      45  
Source: Econometric Views Version 9.0 Output (2025)

The descriptive statistics in Table 4.3 reveal that the average value of GDPGR is about 2.97 percent, suggesting modest growth performance during the period, with a maximum of 8.07 percent and a minimum of 1.01 percent, while the positive skewness (1.18) indicates that higher growth episodes, though rare, pulled the distribution to the right. For DSR, the mean value of 14.92 indicates a relatively high debt servicing burden, with fluctuations between 4.15 and 29.60, while the skewness of 0.48 shows a moderate tilt towards higher values, reflecting episodes of intensified fiscal pressure on debt repayment. EXCHR displays a mean of 377.15, reflecting persistent depreciation across the years, ranging from as low as 11.77 to as high as 1038.44, with a positive skewness of 0.62 indicating vulnerability to exchange rate shocks and the possibility of external debt servicing costs escalating over time. INFR records an average of 14.55 percent, which is considerably above the global

benchmark for stability, with wide fluctuations between 1.00 and 57.55, while a skewness of 1.62 and high kurtosis (5.97) show that extreme inflationary episodes dominated the period, producing a highly leptokurtic distribution. The Jarque-Bera results suggest that GDPGR and INFR deviate significantly from normality at 5 percent, while DSR and EXCHR approximate normal distribution, implying the presence of volatility and shocks in growth and inflation patterns relative to debt and exchange dynamics.

#### Correlation Analysis

Correlation analysis measures the strength and direction of linear relationships among, DSR EXCH, INFR and GDPGR. This is important to pre - assess how foreign debt accumulation indicators move with sectoral development, highlighting possible positive or negative associations before deeper regression analysis. This is shown in Table 4.3 below:

**Table 4.3 Correlation Analysis**

|       | GDPGR     | DSR       | EXCHR    | INFR     |
|-------|-----------|-----------|----------|----------|
| GDPGR | 1.000000  |           |          |          |
| DSR   | -0.058782 | 1.000000  |          |          |
| EXCHR | -0.052927 | 0.168231  | 1.000000 |          |
| INFR  | 0.030921  | -0.232188 | 0.053388 | 1.000000 |

Source: Econometric Views Version 9.0 Output (2025)

The correlation analysis in Table 4.4 shows that GDPGR has a weak negative correlation with DSR (-0.059) and EXCHR (-0.053), implying that higher debt servicing and currency depreciation are associated with marginal declines in growth, although the effects are not statistically strong, while its relationship with INFR (0.031) is weakly positive, suggesting that moderate price increases may have coincided with growth episodes in the Nigerian economy. The relationship between DSR and EXCHR (0.168) is positive but weak, reflecting that exchange rate depreciation tends to elevate debt servicing costs due to the external debt component, though not substantially. The correlation between DSR and INFR (-0.232) is negative, indicating that rising debt servicing pressures often coincide with contractionary fiscal effects that suppress demand and reduce inflationary tendencies. Similarly, the weak positive association between

EXCHR and INFR (0.053) reflects that exchange rate depreciation has not always translated into higher inflation, possibly due to monetary interventions and import-substitution policies. Overall, the low correlations across all variables suggest the absence of serious multicollinearity concerns, thereby validating their inclusion in the ARDL model for assessing both short-run and long-run dynamics of debt overhang in Nigeria.

#### Variance Inflation Factors (VIF)

VIF detects the presence of multicollinearity among the explanatory variables (DSR, EXCHR and INFR). High multicollinearity can distort the true effect of debt overhang on GDPDR, so testing ensures that estimated coefficients are not biased by overlapping information. This is shown in Table 4.4 below:

**Table 4.4 Variance Inflation Factors**

Date: 09/19/25 Time: 01:45

Sample: 1980 2024

Included observations: 44

| Variable  | Coefficient<br>Variance | Uncentered<br>VIF | Centered<br>VIF |
|-----------|-------------------------|-------------------|-----------------|
| GDPGR(-1) | 0.019992                | 3.907987          | 1.007149        |
| DSR       | 0.001127                | 5.195015          | 1.114277        |
| EXCHR     | 5.86E-07                | 2.426469          | 1.031779        |
| INFR      | 0.000655                | 3.848979          | 1.534519        |
| INFR(-1)  | 0.000623                | 3.611342          | 1.502454        |
| C         | 0.769104                | 12.31381          | NA              |

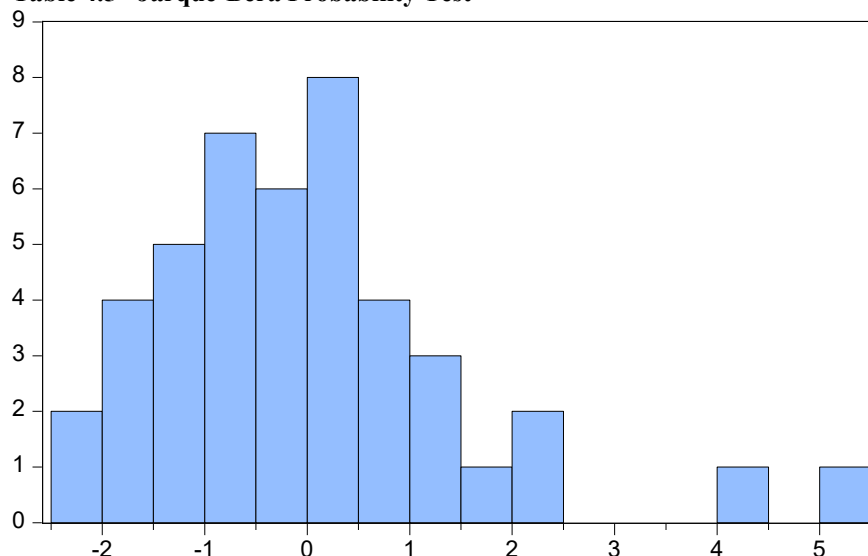
**Source: Econometric Views Version 9.0 Output (2025)**

The results of the Variance Inflation Factors in Table 4.5 indicate that the centered VIF values for all the explanatory variables fall well below the conventional threshold of 10, confirming that multicollinearity is not a serious issue in the model. Specifically, GDPGR(-1) has a centered VIF of 1.01, showing that its lagged value does not excessively correlate with other predictors. DSR records a centered VIF of 1.11, which is very low, suggesting that debt servicing dynamics operate independently without distorting the explanatory power of other regressors. For EXCHR, the centered VIF is 1.03, indicating a negligible level of multicollinearity despite its interaction with external debt and inflationary pressures. Both INFR (1.53) and INFR(-1) (1.50) record the highest VIFs among the variables, but these remain below the critical value of 5, suggesting that while inflationary trends are somewhat correlated with past values and exchange rate

fluctuations, they do not pose a risk of model distortion. The uncentered VIFs are naturally higher due to collinearity with the constant term, with the intercept (C) recording the highest value of 12.31; however, this does not undermine the stability of the model since the constant is not an explanatory variable. Overall, the VIF analysis confirms that the variables under consideration are statistically appropriate for inclusion in the ARDL framework, ensuring robustness in both short-run and long-run estimations.

**Jarque-Bera Normality Test**

The Jarque-Bera test assesses whether the data for , , DSR, EXCHR, , and INFR follow a normal distribution. Normality is a key assumption in regression analysis, ensuring that statistical inferences about the role of debt overhang in a vulnerable economy are valid. This is shown in Table 4.5 below:

**Table 4.5 Jarque-Bera Probability Test**

|                   |           |
|-------------------|-----------|
| Series: Residuals |           |
| Sample 1981 2024  |           |
| Observations 44   |           |
| Mean              | -5.25e-16 |
| Median            | -0.143103 |
| Maximum           | 5.044588  |
| Minimum           | -2.367072 |
| Std. Dev.         | 1.558405  |
| Skewness          | 1.194504  |
| Kurtosis          | 4.991754  |
| Jarque-Bera       | 17.73648  |
| Probability       | 0.000141  |

**Source: Econometric Views Version 9.0 Output (2025)**



The Jarque-Bera Probability Test results in Table 4.6, as depicted in the histogram, show that the residuals have a mean close to zero ( $-5.25e-16$ ) and a median of  $-0.143$ , which is desirable for unbiasedness in regression estimates. The distribution, however, indicates some degree of asymmetry, as reflected in the skewness value of 1.19, which is positive and suggests a rightward tilt in the distribution of residuals. The kurtosis value of 4.99 exceeds the normal benchmark of 3, showing a leptokurtic distribution with heavier tails, meaning extreme values occur more frequently than in a normal distribution. The Jarque-Bera statistic of 17.73 with a probability value of 0.000141 indicates rejection of the null hypothesis of normality at the 1% level of significance. This suggests that the residuals are not normally distributed. Despite this, in large-sample time series regressions such as ARDL, non-

normality of residuals does not invalidate the results due to the asymptotic properties of the estimators, provided other assumptions like homoscedasticity and absence of serial correlation are satisfied. The overall interpretation is that while the residuals deviate from perfect normality, the ARDL model remains consistent and efficient for policy inference given the large time span of the data.

#### Breusch-Godfrey Serial Correlation LM Test

This test examines whether there is autocorrelation in the residuals of the regression model. Since macroeconomic and debt data are time series, testing for serial correlation is crucial to avoid spurious results and to ensure that the impact of debt overhang on GDPGR is not overstated due to persistence in errors. This is shown in Table 4.6 below:

**Table 4.6 Breusch-Godfrey Serial Correlation LM Test:**

|               |          |                     |        |
|---------------|----------|---------------------|--------|
| F-statistic   | 0.392337 | Prob. F(2,36)       | 0.6783 |
| Obs*R-squared | 0.938588 | Prob. Chi-Square(2) | 0.6254 |

Source: Econometric Views Version 9.0 Output (2025)

The Breusch-Godfrey Serial Correlation LM Test results in Table 4.7 show an F-statistic of 0.3923 with a probability value of 0.6783, and an Obs\*R-squared value of 0.9386 with a corresponding probability of 0.6254. Both probability values are far greater than the conventional 5% level of significance, indicating that the null hypothesis of no serial correlation in the residuals cannot be rejected. This means that the residuals from the ARDL model are free from second-order serial correlation, which is an essential condition for the validity and efficiency of the estimated coefficients. The absence of serial correlation implies that the model is well specified and that the dynamics of the lagged variables have adequately captured the underlying data generation process. This enhances the reliability of the ARDL estimates, as the presence of

autocorrelation would have biased the standard errors, leading to unreliable statistical inferences. Therefore, the test result validates the robustness of the ARDL model for analyzing the relationship between DSR, EXCHR, INFR, and GDPGR in Nigeria over the period under review.

#### Heteroskedasticity Test: Breusch-Pagan-Godfrey

This test checks if the error variance is constant across observations. In the context of Nigeria's debt and development, heteroskedasticity could arise due to policy changes or shocks, leading to biased standard errors. Detecting and correcting for it enhances the robustness of the analysis. This is shown in Table 4.7 below:

**Table 4.7 Heteroskedasticity Test: Breusch-Pagan-Godfrey**

|                     |          |                     |        |
|---------------------|----------|---------------------|--------|
| F-statistic         | 0.371584 | Prob. F(5,38)       | 0.8649 |
| Obs*R-squared       | 2.050997 | Prob. Chi-Square(5) | 0.8420 |
| Scaled explained SS | 3.053238 | Prob. Chi-Square(5) | 0.6918 |

Source: Econometric Views Version 9.0 Output (2025)

If the probability value (p-value) is greater than 0.05, we fail to reject the null hypothesis of homoskedasticity. From the table, the F-statistic (0.371584,  $p = 0.8649$ ), Obs\*R-squared (2.050997,  $p = 0.8420$ ), and Scaled explained SS (3.053238,  $p = 0.6918$ ) all have probability values greater than 0.05.

This indicates that the null hypothesis of homoskedasticity cannot be rejected. Therefore, the residuals of the estimated model are free from heteroskedasticity. The Breusch-Pagan-Godfrey test confirms that the error terms are homoskedastic,

implying that the model's estimators are efficient, consistent, and reliable for statistical inference.

The RESET test evaluates model specification errors, including omitted variables and incorrect functional forms. Given the complex nature of debt overhang and vulnerable economy, this ensures the model properly captures the true relationship between, DSR EXCH, INFR and GDPGR.. This is shown in Table 4.8 below:

#### Ramsey RESET Test

**Table 4.8 Ramsey RESET Test**

Equation: UNTITLED

Specification: GDPGR GDPGR(-1) DSR EXCHR INFR INFR(-1) C

Omitted Variables: Squares of fitted values

|             | Value    | df      | Probability |
|-------------|----------|---------|-------------|
| t-statistic | 0.419069 | 37      | 0.6776      |
| F-statistic | 0.175619 | (1, 37) | 0.6776      |

F-test summary:

|                  | Sum of Sq. | df | Mean Squares |
|------------------|------------|----|--------------|
| Test SSR         | 0.493336   | 1  | 0.493336     |
| Restricted SSR   | 104.4309   | 38 | 2.748181     |
| Unrestricted SSR | 103.9376   | 37 | 2.809123     |

Source: Econometric Views Version 9.0 Output (2025)

The Ramsey RESET Test results show that the t-statistic (0.419069,  $p = 0.6776$ ) and the F-statistic (0.175619,  $p = 0.6776$ ) both have probability values greater than 0.05. This indicates that the null hypothesis cannot be rejected. The model does not suffer from misspecification bias. Thus, it is correctly specified, and the functional form of the regression is appropriate for explaining the relationship between

GDP growth rate, debt service ratio, exchange rate, and inflation rate.

#### ADF Unit Root Test

The Augmented Dickey-Fuller test checks for stationarity of the variables. Since non-stationary time series data can lead to misleading regression results, it is vital to establish whether GDPGR and debt overhang indicators require differencing before applying ARDL analysis. This is shown in Table 4.9 below:

**Table 4.9: Summary of ADF Test**

| ADF test at Levels                     |                    |                          |        |                |
|----------------------------------------|--------------------|--------------------------|--------|----------------|
| Parameter                              | ADF test statistic | Test critical value @ 5% | Prob.* | Decision       |
| GDPGR                                  | -7.416766          | -2.929734                | 0.0000 | Stationary     |
| DSR                                    | -2.162704          | -2.929734                | 0.2223 | Non-stationary |
| EXCHR                                  | 3.041305           | -2.931404                | 1.0000 | Non-stationary |
| INFR                                   | -3.490039          | -2.929734                | 0.0129 | Stationary     |
| ADF test at 1 <sup>st</sup> Difference |                    |                          |        |                |
| GDPGR                                  | -8.579858          | -2.933158                | 0.0000 | Stationary     |
| DSR                                    | -7.059795          | -2.933158                | 0.0000 | Stationary     |
| EXCHR                                  | -6.704524          | -2.931404                | 0.0000 | Stationary     |
| INFR                                   | -7.699900          | -2.931404                | 0.0000 | Stationary     |

Source: Econometric Views Version 9.0 Output (2025)

The results reveal that at levels, GDPGR and INFR are stationary, while DSR and EXCHR are non-stationary. However, after first differencing, all variables (GDPGR, DSR, EXCHR, INFR) became stationary as their ADF test statistics were more negative than the critical values and probability values were below 0.05. The

mix of stationarity at levels and at first difference suggests that the variables are integrated of order I(0) and I(1). This justifies the adoption of the ARDL bounds testing approach, which is robust to a combination of I(0) and I(1) regressors.

### ARDL Bounds Test

The ARDL bounds test determines whether a long-run relationship exists among GDPGR, DSR, EXHR and

INFR. This is necessary because the research focuses on whether debt overhang exert both short-run and long-run impacts on vulnerable economy (GDPGR). This is shown in Table 4.10 below:

**Table 4.10 ARDL Bounds Test**

Date: 09/19/25 Time: 01:33

Sample: 1981 2024

Included observations: 44

Null Hypothesis: No long-run relationships exist

| Test Statistic | Value    | K |
|----------------|----------|---|
| F-statistic    | 17.04857 | 3 |

### Critical Value Bounds

| Significance | I0 Bound | I1 Bound |
|--------------|----------|----------|
| 10%          | 2.72     | 3.77     |
| 5%           | 3.23     | 4.35     |
| 2.5%         | 3.69     | 4.89     |
| 1%           | 4.29     | 5.61     |

**Source: Econometric Views Version 9.0 Output (2025)**

The ARDL bounds test results strongly reject the null hypothesis of no long-run relationship, as the computed F-statistic (17.04857) far exceeds the upper critical bound values at all conventional levels of significance. Specifically, at the 5% level, the upper bound is 4.35, while the F-statistic is nearly four times larger, providing overwhelming evidence of cointegration among GDP growth (GDPGR), debt service ratio (DSR), exchange rate (EXCHR), and inflation rate (INFR). This confirms the presence of a stable long-run equilibrium relationship, implying that despite short-run fluctuations, these variables move together over time and jointly determine the trajectory of Nigeria's

economic growth. The outcome validates the subsequent estimation of both the long-run coefficients and the error correction mechanism within the ARDL framework. It further suggests that fiscal and monetary dynamics, particularly debt servicing obligations, exchange rate volatility, and inflationary pressures, are deeply embedded in Nigeria's long-term growth path. The statistical strength of the result underscores the robustness of the model, indicating that policy interventions addressing these macroeconomic variables can have enduring effects on economic stability and performance.

### ARDL Cointegration and Long Run Form

Once cointegration is established, the ARDL long-run form provides estimates of the equilibrium relationship.

This quantifies the extent to which debt overhang variables (DSR, EXCHR, and INFR) permanently impact GDPGR in Nigeria. This is shown in Table 4.11 below:

**Table 4.11 ARDL Cointegrating And Long Run Form**

Dependent Variable: GDPGR

Selected Model: ARDL(1, 0, 0, 1)

Date: 09/19/25 Time: 01:37

Sample: 1980 2024

Included observations: 44

| Cointegrating Form                                                   |             |            |             |        |
|----------------------------------------------------------------------|-------------|------------|-------------|--------|
| Variable                                                             | Coefficient | Std. Error | t-Statistic | Prob.  |
| D(DSR)                                                               | 0.001792    | 0.033576   | 0.053378    | 0.9577 |
| D(EXCHR)                                                             | -0.000228   | 0.000766   | -0.297158   | 0.7680 |
| D(INFR)                                                              | -0.036507   | 0.025588   | -1.426744   | 0.1618 |
| CointEq(-1)                                                          | -1.138018   | 0.141392   | -8.048654   | 0.0000 |
| Cointeq = GDPGR - (0.0016*DSR -0.0002*EXCHR + 0.0388*INFR + 2.4304 ) |             |            |             |        |
| Long Run Coefficients                                                |             |            |             |        |
| Variable                                                             | Coefficient | Std. Error | t-Statistic | Prob.  |
| DSR                                                                  | 0.001575    | 0.029520   | 0.053349    | 0.9577 |
| EXCHR                                                                | -0.000200   | 0.000673   | -0.296917   | 0.7681 |
| INFR                                                                 | 0.038825    | 0.021631   | 1.794842    | 0.0806 |
| C                                                                    | 2.430383    | 0.663763   | 3.661524    | 0.0008 |

**Source: Econometric Views Version 9.0 Output (2025)**

The ARDL cointegration and long-run form results show that in the short run, the differenced variables of Debt Service Ratio (DSR), Exchange Rate (EXCHR), and Inflation Rate (INFR) do not significantly affect GDP growth, as their probability values exceed the 5% threshold. This indicates that short-run fluctuations in these variables have limited immediate influence on economic growth. However, the error correction term (CointEq(-1)) is negative (-1.138018), statistically significant at the 1% level, and greater than one in absolute value, confirming a strong and stable adjustment mechanism. This suggests that deviations from the long-run equilibrium are corrected swiftly, with more than 100% of disequilibrium adjusted within a year, indicating rapid convergence towards equilibrium.

In the long-run coefficients, DSR and EXCHR maintain insignificant impacts on GDP growth with high probability values, implying that debt servicing and exchange rate dynamics do not substantially explain Nigeria's long-run growth trajectory. Conversely, inflation (INFR) displays a positive

coefficient (0.0388) and is weakly significant at the 10% level, suggesting that mild inflation could be growth-inducing in the long run, possibly reflecting a demand-pull relationship in the Nigerian economy. The constant term (2.4304) is significant and positive, highlighting the presence of other structural and institutional factors that consistently drive growth beyond the specified macroeconomic variables.

Overall, the findings establish the existence of a long-run cointegration relationship between external debt servicing, exchange rate, inflation, and GDP growth. While short-run effects remain muted, the long-run dynamics emphasize the importance of inflationary trends and structural factors in shaping economic performance, with the significant error correction term reinforcing the system's ability to self-correct towards equilibrium.

#### ARDL Data Analysis

When estimating the ARDL model in EViews 9.0, one key diagnostic that is automatically reported is the Durbin-Watson (DW) statistic. The DW statistic is

used to test for the presence of serial correlation in the residuals of the regression model. A value close to 2 suggests no first-order autocorrelation, values significantly below 2 indicate positive autocorrelation, while values substantially above 2 suggest negative autocorrelation. The presence of autocorrelation would weaken the validity of the ARDL estimates, making the

DW statistic an essential diagnostic within the ARDL test output. Thus, the ARDL test is not only a tool for modeling dynamic relationships but also provides important diagnostics such as the Durbin-Watson statistic, which ensures the robustness of the results in time series analysis. This is shown in Table 4.12 below

**Table 4.12 ARDL Data Analysis**

Dependent Variable: GDPGR

Method: ARDL

Date: 09/19/25 Time: 01:31

Sample (adjusted): 1981 2024

Included observations: 44 after adjustments

Maximum dependent lags: 2 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (2 lags, automatic): DSR EXCHR INFR

Fixed regressors: C

Number of models evaluated: 54

Selected Model: ARDL(1, 0, 0, 1)

Note: final equation sample is larger than selection sample

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.* |
|--------------------|-------------|-----------------------|-------------|--------|
| GDPGR(-1)          | -0.138018   | 0.141392              | -0.976137   | 0.3352 |
| DSR                | 0.001792    | 0.033576              | 0.053378    | 0.9577 |
| EXCHR              | -0.000228   | 0.000766              | -0.297158   | 0.7680 |
| INFR               | -0.036507   | 0.025588              | -1.426744   | 0.1618 |
| INFR(-1)           | 0.080690    | 0.024958              | 3.232985    | 0.0025 |
| C                  | 2.765821    | 0.876986              | 3.153781    | 0.0031 |
| R-squared          | 0.233223    | Mean dependent var    | 2.920455    |        |
| Adjusted R-squared | 0.132331    | S.D. dependent var    | 1.779695    |        |
| S.E. of regression | 1.657764    | Akaike info criterion | 3.974940    |        |
| Sum squared resid  | 104.4309    | Schwarz criterion     | 4.218239    |        |
| Log likelihood     | -81.44868   | Hannan-Quinn criter.  | 4.065167    |        |
| F-statistic        | 2.311616    | Durbin-Watson stat    | 2.076330    |        |
| Prob(F-statistic)  | 0.062845    |                       |             |        |

\*Note: p-values and any subsequent tests do not account for model selection.

Source: Econometric Views Version 9.0 Output (2025)

The ARDL regression results reveal mixed short-run effects of the explanatory variables on GDPGR. The lagged dependent variable GDPGR(-1) is negative (-0.138018) and insignificant, indicating limited persistence of past growth in shaping current performance. DSR has a small positive coefficient (0.001792) but is highly insignificant, showing that debt servicing has no meaningful short-run effect on growth. Similarly, EXCHR carries a negative but insignificant coefficient (-0.000228), implying that exchange rate changes do not immediately affect growth.

INFR shows a negative but insignificant coefficient (-0.036507), suggesting inflationary pressures tend to weaken growth. However, its lagged term, INFR(-1), is positive (0.080690) and significant at the 1% level, indicating that previous-period inflation stimulates subsequent GDPGR. This counterintuitive result may reflect Nigeria's adaptive economy, where moderate past inflation encourages nominal investment or spending adjustments that support growth. The constant (2.765821) is positive and significant, highlighting underlying growth potential independent of the specified variables.

Diagnostic statistics reveal that the model explains about 23% of GDPGR variation ( $R^2 = 0.2332$ ; adjusted  $R^2 = 0.1323$ ), showing modest explanatory power. The Durbin-Watson statistic (2.076) indicates no autocorrelation, while the overall model is marginally significant (F-statistic probability = 0.0628). Overall, while DSR and EXCHR exert weak effects, lagged INFR emerges as a key driver of growth, underscoring the importance of inflation management in stabilizing Nigeria's growth trajectory.

#### **Pairwise Granger Causality Test**

The Granger causality test examines the direction of causality between debt overhang and indicators and GDPGR. This is essential to know whether debt overhang drives vulnerable economy, or whether rising GDPGR creates demand for more foreign borrowing, thus clarifying policy direction. This is shown in Table 4.13 below:

Pairwise Granger Causality Tests  
Date: 09/19/25 Time: 02:03  
Sample: 1980 2024  
Lags: 2

| Null Hypothesis:                   | Obs | F-Statistic | Prob.  |
|------------------------------------|-----|-------------|--------|
| DSR does not Granger Cause GDPGR   | 43  | 0.58915     | 0.5598 |
| GDPGR does not Granger Cause DSR   |     | 0.55373     | 0.5794 |
| EXCHR does not Granger Cause GDPGR | 43  | 0.90278     | 0.4140 |
| GDPGR does not Granger Cause EXCHR |     | 0.03990     | 0.9609 |
| INFR does not Granger Cause GDPGR  | 43  | 4.04581     | 0.0255 |
| GDPGR does not Granger Cause INFR  |     | 0.10306     | 0.9023 |
| EXCHR does not Granger Cause DSR   | 43  | 1.45120     | 0.2470 |
| DSR does not Granger Cause EXCHR   |     | 2.80802     | 0.0729 |
| INFR does not Granger Cause DSR    | 43  | 0.49962     | 0.6107 |
| DSR does not Granger Cause INFR    |     | 1.06841     | 0.3536 |
| INFR does not Granger Cause EXCHR  | 43  | 1.13250     | 0.3329 |
| EXCHR does not Granger Cause INFR  |     | 3.45843     | 0.0417 |

**Source: Econometric Views Version 9.0 Output (2025)**

The Granger causality results reveal mixed interactions among the variables. For DSR and GDPGR, no causality is found in either direction, suggesting that debt servicing neither drives growth nor responds predictably to it in the short run. This contrasts with the debt overhang hypothesis, which links high debt service to reduced investment and weaker growth. In Nigeria, debt obligations alone may not directly explain growth variability. Similarly, the absence of causality between EXCHR and GDPGR contrasts with conventional theory, as exchange rate instability is not shown to forecast growth, nor does growth predict exchange rate changes, implying other structural factors may be more influential.

By contrast, INFR has a significant causal effect on GDPGR, underscoring the critical role of inflation in shaping growth outcomes. Persistent price instability likely distorts consumption, savings, and investment, thereby affecting economic performance. The absence of reverse causality suggests growth does not significantly drive inflation in Nigeria, unlike arguments of demand-pull inflation from rapid expansion. Additionally, the unidirectional causality from EXCHR to INFR highlights that exchange rate fluctuations strongly shape inflation trends, reflecting Nigeria's import dependence and currency pass-through effects. Inflation, however, does not explain exchange rate dynamics, pointing instead to external shocks and foreign exchange pressures as dominant drivers.

Overall, the findings challenge conventional debt and growth literature. While debt service and exchange rate volatility do not directly predict growth, inflation emerges as a central determinant of short-run growth. Moreover, the strong link between exchange rate and inflation underscores structural vulnerabilities in the economy and the need for coordinated monetary and exchange rate policies. Unlike the debt overhang argument that emphasizes debt as the main drag, the results suggest inflation and exchange rate instability are more critical constraints on Nigeria's growth trajectory.

#### **Conclusion:**

Both short-run and long-run results indicate that DSR does not significantly explain growth performance in Nigeria. This implies that debt obligations, while burdensome, may not independently drive growth fluctuations but instead interact with broader fiscal and structural dynamics. Exchange Rate (EXCHR): Exchange rate volatility shows no significant effect on GDP growth in either the short or long run. This challenges conventional assumptions that depreciation directly suppresses growth, suggesting that Nigeria's growth trajectory is influenced more by structural inefficiencies and trade imbalances than by currency fluctuations alone. Inflation Rate (INFR): Inflation emerges as the most influential macroeconomic variable, with a weak but positive long-run effect.

Moderate inflation appears to stimulate growth, aligning with demand-pull inflation theories. However, the risks of runaway inflation remain, making stability crucial. GDP Growth Rate (GDPGR): The adjustment mechanism is robust, with disequilibrium corrected by more than 100% annually. This demonstrates a strong self-correcting capacity of the Nigerian economy towards its long-run growth path, despite short-term disruptions.

### Recommendations

1. Adopt debt restructuring and efficient debt utilization to ensure that borrowing translates into growth-enhancing investments rather than unproductive recurrent spending.
2. Implement exchange rate harmonization and strengthen export diversification to reduce vulnerability to external shocks and import dependence.
3. Maintain inflation within a moderate band (single-digit to low double-digit) to harness its growth-inducing effects while avoiding hyperinflationary spirals.
4. Strengthen institutional frameworks, governance quality, and infrastructure investments to complement macroeconomic stabilization policies.

### Contributions to Knowledge

1. Provides empirical evidence that Nigeria's growth is less constrained by debt servicing and exchange rate instability than by inflationary pressures.
2. Demonstrates that the economy has a strong and rapid error-correction mechanism, indicating resilience to disequilibrium shocks.
3. Shifts the debt overhang debate in Nigeria towards the role of inflation and structural factors rather than debt burden alone.
4. Validates the ARDL framework as suitable for capturing mixed integration and both short- and long-run dynamics in Nigeria's debt-growth nexus.

### Suggestions for Further Studies

1. Extend the model by incorporating fiscal deficit, capital inflows, and institutional quality indicators to capture broader structural influences.
2. Explore sectoral impacts of debt servicing and exchange rate fluctuations on growth (e.g., agriculture, manufacturing, oil sector).
3. Apply nonlinear ARDL (NARDL) or Threshold models to examine possible asymmetries in the debt-growth relationship.
4. Conduct comparative studies between Nigeria and other Sub-Saharan African economies to generalize findings.

5. Investigate the mediating role of governance and corruption in the debt-growth-inflation nexus.

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## Green Logistics and Organizational Performance of Selected Companies in Lagos State, Nigeria

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### Abstract

This study examined effects of green logistics on organizational performance of selected companies in Lagos State. Survey research design was adopted in this research. The population of the study was one thousand nine hundred and thirty-three (1,933). Yamane (1967) formula was employed to determine the sample size which was three hundred and thirty-one (331). Simple random sampling technique was employed to select the participants in this study. Questionnaire was used to obtain data. Simple percentage and frequency tables was used to analyzed data collected while hypotheses were tested with regression analysis using SPSS version 23. Findings indicated that greening process in packaging practices ( $r = .791$ ,  $R^2 = .152$ ,  $B = .291$   $p < .01$ ) and greening process in technology ( $r = .268$ ,  $R^2 = .129$ ,  $B = .466$ ,  $p < .01$ ) has significant effects on organizational performance of surveyed companies in Lagos state. It was recommended that corporate organizations and government should embrace greening packaging practices and technology also government should enact laws to support greening process in technology

Keywords: Green logistics, Organization performance, Greening process in packaging practices, Greening process in technology

### Introduction

Logistics play important part in bridging gaps between town, nations and landmass worldwide. It incorporate world supply chain networks which comprised of different operations such as clearing and forwarding, information sharing, inventory management etc. (Khan *et al.* 2018). The need to minimize carbon emissions from logistics related activities and ensure friendly environment informed the introduction of green logistics concept measured with route optimization, alternative fuels technology, information technology, internet of things among others. The integration of internet of things (IoT) into logistics chain administration has changed how firms supervises, regulate and manage their supply chain network (Kamble, Gunasekaran & Gawankar, 2018).

Organizational performance is crucial when assessing the success of companies. It is usually displayed in the organization's ability to efficiently start and execute projects that assist companies in reaching their outlined purposes and targets (Ganiyu & Sulaiman, 2024). Recently, due to stiff contest arising from worldwide integration, companies are encouraged to enhance their operations through execution of new techniques, guidelines and programs that can permit them to outsmart their competitors (Hardyman, Daunt & Kitchener, 2015; Mwagona & Kinyua, 2023).

Conventional performance indicators concentrated more on fiscal indicators such as return on investment and return on equity to measure performance. These metrics while important, does not cover all the organization's operations and effects. With increasing social commitment and economic sustainability philosophies, it has become clear that non-fiscal indicators are equally significant. Current perspectives on accomplishment is an integration perspective that includes fiscal, communal and ecological criteria. Performance is therefore evaluated not only in terms of fiscal indicators but also built on how these performances are accomplished and their over all effects on the populace as a whole and its surroundings (Moumin, 2024).

Green logistics and organizational performance were supposed to be the most efficient and best in Sub-sahara Africa, couple with policies and regulations available. Regrettably, many emissions still arises from moving products from place to place. Vehicles, generates exudations and tires which definitely get into the atmosphere (Striebig *et al.*, 2019).

Even though many studies have researched on green logistics and organizational performance combined and independently such as Shailendra & Supriyo (2020) who research on green logistics operations utilizing internet of things as independent variable in India.

Sorin *et al.* (2023) that studied impact of automation on customer engagement as well as how automation affect customer satisfaction in Madrid metropolis, Spain. Syed Abdul Rehman (2019) whose research work assessed the effects of green logistics on economic growth, social impact and environmental sustainability with a special focus on developing countries in Asia. Nwaulune (2024) which studied product sustainability and green logistics practices among selected fast-selling goods manufacturers in Lagos, Nigeria, Ali *et al.* (2021) whose study covered Egypt to research sustainable logistics service quality scale for logisitics service providers and Umair *et al* (2019) which studied 200 stores owners in Islamabad and Rawalpindi. It is worthy to note that none of these studies covered Lagos state transport and logistics sector the sectorial gap which this study covered.

Even with all these studies green logistics activities are yet to be fully utilized and many organizations in Nigeria are still inefficient and not performing as expected. The previous studies have also failed to cover population gap and does not measure green logistics with greening process in packaging and technology. Also, past research failed to studied combined effect of packaging and technology on organization performance, the literature gap which this study filled. This study was designed to assess the direct result of green logistics on organizational performance. And also, address practical conflicting gaps, methodological gap, conceptual gap and population gap.

The study analyze effects of green logistics on organizational performance of selected companies in Lagos State, Nigeria. And the study tend to address practical conflicting gap, methodological gap, conceptual gap and population gap.

#### Objectives of the Study

The primary aim of this research is to assess the effects of green logistics on organizational performance of selected companies in Lagos state, Nigeria.

The specific objectives are to:

1. Evaluate the effect of greening process in packaging practices on organizational performance of selected companies in Lagos State, Nigeria
2. Analyze the effect of greening process in technology on organizational performance of selected companies in Lagos State, Nigeria

#### Research Questions

The following questions were asked in this study:

1. To what extent does greening process in packaging practices affect organizational performance of selected companies in Lagos State, Nigeria?
2. How does greening process in technology affect organizational performance of selected companies in Lagos State, Nigeria?

#### Statement of the Hypotheses

The following hypotheses were tested in the study:

Ho<sub>1</sub>: Greening process in packaging practices has no significant effect on organizational performance of selected companies in Lagos State, Nigeria

Ho<sub>2</sub>: Greening process in technology has no significant effect on organizational performance of selected companies in Lagos State, Nigeria

## Literature Review

### Conceptual Review

#### Green Logistics

Green logistics and greening logistics practices are one and the same as used in this research and were used interchangeably. Green logistics practices encompasses the utilization of environmentally pleasant actions, plans, procedures, guidelines and rules among organization's supply chain network with the purpose of minimizing wastages, preserve energy and natural endowments, reduces the bad effects of logistics operations on both eco-system and the community while at the same time enhance collective accomplishment (Agyabeng-Mensah, Afum, 2020; Agyabeng-Mensah & Tang, 2021). Green logistics entails procurement, production and distribution of products in an eco-friendly way, taken into consideration fiscal, ecological and society variables (Sbihi & Eglese, 2007; Kumar, Teichman & Timpernagel, 2012).

Green logistics practices comprise of operations which entails transportation of products from one place to another in environmentally pleasant way (Hampus & Henrik, 2014). Green logistics imply organization coordination of supply chain to minimize their ecological impact (Ismail *et al.*, 2019). Green logistics is an ecological method or scheme that consists of energy-saving processes in freight, storage, delivery and waste reclamation or dumping (Mutua Mutie *et al.*, 2022). Moreover, greening process in packaging practices, transportation practices, route optimization and technology have been viewed as an important component of green logistics in 21st century.

Based on different definitions by authors, the researcher does described green logistics as environmentally pleasant philosophy that promotes the utilization of hybrid and efficient transportation facilities to move goods from one destination to another with aim of minimizing gaseous emission to the environment.

#### Greening process in packaging

Packaging is the body of knowledge, skill and technique encompassing or safeguarding of goods for transportation, warehousing, sale, and utilization. Packaging can further be defined as the system of carving, assessing and manufacturing of packages. Core aims of packages consists: protection of goods from physical harms, obstacle protection, protection from pollution, data transmission, advertising, safety, design, evaluation, and production of packages. Basic objectives of packaging include; physical protection,

barrier protection, containment or agglomeration, information transmission, marketing, safety, fake and counterfeit control. Packaging can be separated into, main, auxiliary and higher type. Labeling is any printed, electronics components or pictorial communications on the packages as it relates to label (Tukamuhabwa, Eyaa & Derek, 2011; Jepchumba *et al*, 2022).

Packaging is used for marketing, ensuring that there is favourable impression and aiding impulse buying. This contradict the auxiliary function of packaging engaged for warehousing, freight and logistics which are intangible but important in the transportation of goods meant for trading (Armistead & Mapes, 2013; Jepchumba *et al*, 2022). Packaging is the confinement of physical material, mainly goods that is meant for sale. It is the system of planning materials for moving and warehouse which allows conservation, recognizing and packaging of goods. Packages defend goods from damage, dissolve, leakage, decage, ignite, warm, freezing and so many factors. Packaging most time contribute immensely in protecting or warehousing of goods (Jepchumba *et al*, 2022).

Packaging is the process of reservation, safe guarding, containing, and displaying products components through the lasting network of manufacturing, operating and moving to their final destination in a good manner, as were, at the period of manufacturing. Packaging is a key component of branding methods as it ensure that goods disseminate the information, the image and face of a company (Saliba, 2013; Jepchumba *et al*, 2022).

Package protect goods that is added inside of it as they transit from different marketing models and when in use. Packaging also extend the life span of goods, which is important to manufacturers, wholesalers and final consumers. Recent mind set is interested in package protection most importantly for drugs and other pharmaceutical products, house cleaners and many goods which are dangerous to health, especially to underage (Peck, 2015; Jepchumba *et al*, 2022).

Greening process in technology

Mascus (2003) defined technology as the data which aim to attain sum percentage of manufacturing ouput from a peculiar product by adding or scrutinizing chosen inputs like manufacturing processes, intra-company organogram, quantitative techniques, funding instruments and advertising techniques or any of selected choice. The concept of technology does not necessarily associate to the technology that encompass in the goods but also related with meaning, knowledge or data utilization and the systems in designing the goods (Lovell, 1998; Bozeman, 2000).

Tihanyi and Roath (2002) asserted that technology encompasses data which can not be readily remodel and conveyed. Reisman (2006) defined technology as the implementation and designing of methods, facilities, items and systems which can assist in finding lasting solutions to human problems.

Levin (1996) defined technology as not mainly an object or thing but best described as an approach. It involves applying scientific techniques to solve feasible human problems. The scholar further asserted that technology has three phases: material artifacts, the usage of artifacts to chase an objective and the knowledge to use the artifacts

Organization Performance

Alahmad (2021) defined organization performance as the real outcome of an organization against expected outcome. This implies that performance evaluate how best a firm activities in respect to achieving goals, customers satisfaction and income maximization. Organizational performance is the firms ability to accomplish its aims and objectives. It is a basic idea in recent business administration and management, which comprised of different criterion spanning from conventional financial indicators to society and ecology impact (Moumin, 2024). Organization performance is an output which center on quantifiable factors such as gain or market share. It is a method which deal with the plans, actions, procedures and strategies executed to attain results (Bourguignon, 2000; Moumin, 2024). Advanced an ideology scheme which merges monetary and non-monetary measures, the academician lay more emphasis on attainment of goals and effective utilization of resources which were considered key for complete appraisal of performance (Lebas & Euske, 2002; Moumin, 2024)

Organizational performance in the view of (Pitt and Tucker, 2008; Mwagana and Kinyua, 2023) is a vocal sign of the firm that indicates how effective they are in attaining goals and objectives. The concept of organizational performance is grounded on the belief that company is the intentionally combination of profitable assets; including personnel, physical, and monetary resources, to establish the highest value for final consumers and shareholders of the firm (Carton, 2004; Mwagana & Kinyua, 2023). Organizational performance is a key concept and mostly applied as explained variable, and several recommendations made for its advancement. Despite its role, there is not much agreement on its definition or dimensionality (Selvam, Gayathri, Vasanth, Lingaraja & Marxiaoli, 2016; Mwagana & Kinyua, 2023).

Customer Satisfaction

Customer satisfaction is the worldwide concept that affect all firms, irrespective of its size, structure, either profit or non-profit, domestic or international. Firms that meet their customers expectations tends to observe greater economic returns and growth (Bolton & Drew, 2021). Customer satisfaction is a situation which indicates that the customer has experienced his or her desires, wants, and demands as a result of an important goods or service and such customer is motivated to repurchase. The reason while every firm works toward satisfaction of its customer is to expand the

development of the business which definitely maximizes the profit of the organization. The implementation of customer satisfaction have a positive effects on the company, which at the end affect the desires of the customers for continuous patronizing the firm (Aksar, Kayani & Ali, 2020). Customer satisfaction is after sales attitude as a result of psychological comparism of the quality a customer intends to get from buying goods or services and the extent of quality the customer actually received (Mohammad & Mohammad-Alhamadani, 2011).

Customer satisfaction is a customer's emotional displayed of happiness or unhappy as a result of equating the perceived experience in contrast with expectation (Sambo *et al.*, 2021). Customer satisfaction results in observable outcomes such as customer loyalty, satisfaction, retention, happiness, commitment, faithfulness, creation of togetherness benefits and bond between customers and the company offering service, high customer indulgence for services and products disappointment, good word-of-mouth marketing about the firm, high future customer expectations, and selling more of the organization's goods or services, drawing new customers, cheaper prices, and high profit (Adeola & Adebiyi, 2014). Customer satisfaction can also be defined as the extra, additional value and discrepancy between a user's expectation and their prospect. Customers are satisfied when the product or service they purchased and used meets or exceeds their expectations (Suchánek & Králová, 2018)

#### Customer Loyalty

Cutomer loyalty is the behavior of repeated and continuous customers patronage as well as those that offer better evaluation, assessment, reviews, good word of mouth or testimony (Kumar & Advani, 2012). Iddrisu (2011) suggested that loyalty is engaged over a period of time from a repeated record of meeting or exceeding customer proposition, or expectations. Jacoby and Chestnut (1978) defined customer loyalty as a behavioral result of consumers' choice, preferences for a specific product or goods from a set of equal ones. Loyalty is a pledge, commitment, dedication to persistently do business with a firm over a long period of time, it is a state of mind, behavior, a set of attitudes, beliefs, intentions or desires to continue to patronize the firm (Zineldin, 2006).

Neal (1999) defined customer loyalty as the percentage of time a customer prefer the same or similar product or service in the same category compared to the whole number of customers made by the customers in that set, under the terms and conditions that other preferable goods or services are equally available in that set. Customer loyalty is defined as pledge to continue to patronize the prefer goods or service in the nearest future, despite conditional factors and advertising efforts which can change the behavior (Oliver, 1997; Too, *et. al.*, 2001).

#### Theoretical Review

The Unified Theory of Logistics by Mentzer *et al.* 2001  
The research efforts was anchored on unified theory of logistics as a result of study conducted by Mentzer *et al.* This particular theory got it is root from firm theory propounded by Holstrom and Tirole in 1989. There are many theories that were originated from theories of firm, as a result of this Mentzer *et al.* 2001 decided to embark on unified theory of logistics. The unified theory of logistics assumed that companies compete to have advantage over each other in order to continue to add value to her customers to ensure customer's satisfaction.

After firm theory was reviewed by different authors it give rise to further explanation of the duties perform by logistics firm which includes provision of cross border transit, organization capabilities in respect to supply and demand since the firm primary objective is to gain and which usually associated with value creation in the mind of the customers which result to their loyalty, retention and satisfaction (McNamara, 2005). Since many companies desires to incurcate effectiveness and efficiency in their routine activities which will amount to cost leadership and better customer services.as added in their capability of logistics network concerning competitive advantage, interface capabilities, logistics network, interface capabilities and data administration capabilities; data exchange via computing and network (Bolton & Drew, 2021).

#### Empirical Review

Shailendra and Supriyo (2020) in their study of how internet of things (IoT) affect green logistics operations in India's transport and logistics sub-sector. Secondary data was the backbone in which the study relied on. The research found that economy activities in India witnessed positive growth in the last ten years which helped to increase the need for transport and logistics services. The research conducted also revealed that innovation adoption especially in information technology cannot be over look. These findings made the study to conclude that advanced competition, political instability, customer's anticipation and quest for good attitude are the major problems battling Indian logistics industry.

Sorin *et. al* (2023) in a study conducted in Madrid community, Spain with aims to investigate the impact of automation on consumer engagement and satisfaction and design effective techniques for automation application of consumers. The researchers utilized survey research technique and questionnaire was employed to obtain information from the participants. Mean and standard deviation was applied to analyze information collected while one sample test was conducted utilizing SPSS version 23 software. The study discovered that automation and improvement of processes can be beneficial for businesses to achieve customer satisfaction

Syed Abdul-Rehman (2019) investigated the impact of green logistics on economic activities growth, social development and ecological sustainability using third world nations in Asia as surveyed area. The conducted research employed Fully Modified Ordinary Least Squares with Dynamic Ordinary Least Squares methods to estimate the relationship between the variables adopted in the study. Report of the research showed that customs clearance procedures, quality, commerce and freight facilities are associated with income per head, production value added and free trade. The research further discovered that transport and logistics operations hinderance include but not limited to climate variations, global climate crises, carbon emissions, ecological sustainability, ill commerce, poor logistics facilities and toxic atmosphere. Frequent changes in government policies, natural disasters and insecurity are the major causes of inadequate economic growth and development. In addition, the study indicates that implementation of solar energies and greening economy could reduce negative effects on society and ecological sustainability

Nwaulune (2024) carried out inquiry to investigate relationship between product sustainability and green logistics processes surveying fast moving consumer goods manufacturers in Lagos state, Nigeria. The research utilizes efficiency and sustainability as predictable criterion for product sustainability. The research process employed survey research design while Taro Yamane formula was employed to calculate the sample size. Random sampling method was used to choose the participants. Data was obtained with questionnaire and analyzed with simple percentage while multiple and hierarchical regression was employed to proof the formulated hypotheses. The research found that green logistics practicess associated well with fast moving consumer goods manufacturers in Lagos state

Ali *et al.* (2021) explored benefits of developing a sustainable logistics service quality measurement for logistics companies in Egypt. The study combines both quantitative research and survey research design methods for the study. The study utilized semi-structured interview to obtain information from surveyed logistics companies. The data was analyzed with Q-sorting technique aided by SPSS version 23.0 software. The findings showed that sustainable logistics service quality (SSQ) is sufficient to determine the sustainability service quality of company. The study further revealed that sustainable logistics service

quality (SSQ) can be implemented in marketing research

Umair *et al.* (2019) investigated the effect of logistics administration on customer satisfaction in Islamabad and Rawalpindi. The study used cross-sectional and descriptive survey research methods. Questionnaire was adopted to obtain information from participants. Percentage, frequency tables, mean and standard deviation was utilized in analyzing data and hypotheses were proofed with correlation coefficient, and regression analysis. The research conducted indicates that stock, lead time and shipping positively associated with customer satisfaction

## Methods

The study utilized survey research design method. The utilisation of survey research design was justified due to the fact that it enables data collection from a survey or part of a population in order to make generalization about the whole population with aid of structured questionnaires.

### Population of the Study

Information gathered from the yearly audit statements and the official website of the surveyed companies revealed that the total number of their employees was one thousand nine hundred and thirty-three (1,933). (1,107) one thousand one hundred and seven staff from ABC Transport, three hundred (300) staff from Courier Plus and five hundred and twenty-six (526) staff from GIG Logistics Ltd. The selected companies are high profiled and among the most performing logistics firms in Nigerian transport and logistics sub-sector (NBS, 2024).

Transport and logistics sector was studied because previous studies have not adequately covered the sector. Lagos state was chosen because it is the commercial and most economy viable state in Nigeria. Moreover, all the selected companies have their headquarters located in Lagos state, Nigeria.

### Sample Size Determination and Sampling Technique

For easy data collection, the study randomly selected ABC Transport, Courier Plus and GIG Logistics in Lagos State, Nigeria as the study's surveyed companies which were among the seven hundred and sixteen (716) couriers and logistics companies who are registered with Nigerian Postal Service as at November, 2024.

The study used simple random sampling procedures when selecting respondents to ensure that all respondents have equal chance of being selected. Taro Yamane (1967) sample size determination formula was used to calculate the sample size used in this study

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(i)$$

Where n = sample size, N = population size= 1,933, e = margin of errors = 5% = 0.05

$$n = \frac{1,933}{1 + 1,933(0.05)^2} \dots\dots\dots(ii)$$

n =331. As such the sample size used was 331.

Allocation of research instrument to the participants in each of the surveyed firms was done with Bryman's (2011) scientific formula as follows:

Table 1: Allocation of Sample Size

|   | Firm          | staff and customers | Sample size                            |
|---|---------------|---------------------|----------------------------------------|
| 1 | ABC Transport | 1,107               | $\frac{1,107 \times 331}{1,933} = 190$ |
| 2 | *Courier Plus | 300                 | $\frac{300 \times 331}{1,933} = 51$    |
| 3 | GIG Logistics | 526                 | $\frac{526 \times 331}{1,933} = 90$    |
|   | <b>Total</b>  | <b>1,933</b>        | <b>331</b>                             |

Source: Field Study, 2024

Table 1 showed that 190 (one hundred and ninety) questionnaire was given to workers and customers of ABC Transport, while 51(fifty one) copies of the same instrument was sent to participants who work and patronize Courier Plus and 90 (ninety) was issued to GIG Logistics staff and customers.

#### Instrumentation

Questionnaire was deployed to obtain data from the respondents. The instrument covered personal information and research questions. The first part covered participant's sex, qualification, years of experience, department as well as level of workers while the second part contained research questions

#### Validity and Reliability of the Study

The research instrument was validated for face and content validity as prototype questionnaire was submitted to lecturers, supervisor, quality control staff, and management experts for vetting and review before it was administered on the respondents.

#### Pilot Study

A pilot study was carried out at Redstar Plc. using 66 (sixty-six) respondents in order to sample their opinions about the study before embarking on the main study.

#### Data collection Procedures

Data was gathered with questionnaires designed. The questionnaires were distributed via google survey form, electronic mail and hand to hand delivery with the help of research assistants

#### Method of Data Analysis

Descriptive statistics analysis used in the study includes tables, frequency distribution and simple percentage. The cordinal regression analysis was utilized to proof the hypotheses aided by SPSS statistical software version 23.

#### Model Specification

The research investigated how green logistics affect organizational performance of selected companies in Lagos State, Nigeria. Green logistics (GL) is a function of organizational performance (OP). Greening process in packaging practices (GPP) and greening process in technology (GPT) was used to proxy green logistics (GL) while organization performance (OP) is a dependent variable

The function is represented as follows:

$$OP = f(GL) \dots\dots\dots(iii)$$

$$OP = \beta_0 + \beta_1 GPP + \beta_2 GPT + \mu t \dots\dots\dots(iv)$$

Where: *OP*= Organization performance,  $\beta_0$ = Constant  
 $\beta_1$  *GPP*= Greening process in packaging,  $\beta_2$  *GPT*= Greening process in technology

$\beta_0 \dots \beta_2$ = Regression coefficients of the model,

*A priori expectation:*  $\beta_0 > 0$  and  $\beta_2 > 0$

$\mu t$ = error tab

#### Ethical Consideration

The study protects the privacy of individuals and corporate participants by anonymizing their personal

data and sensitive information. Purpose and benefits of the research was revealed to all the respondents and make them understand that they have the right not to participate. The study is for academic purpose and no potential negative consequences or reputational damage for participants.

The study carefully chooses methods and respondents to avoid bias and ensure equal chance. Data collected in this study was analyzed, and reported accurately and honestly without any bias or alterations. In order to

ensure fair ethical review process, the research topic and proposal was approved by the supervisor before conducting the research while the research was presented before panel of experts in the faculty for corrections before final approval.

#### Results

331 (three hundred and thirty-one) questionnaire was sent out, only 290 (two hundred and ninety) was filled which means 87.6% response rate.

Table 2: Personal Data of the study's participants

| Variables                  | Level              | Frequency | Percentage (%) |
|----------------------------|--------------------|-----------|----------------|
| <b>Sex</b>                 | Male               | 220       | 75.9           |
|                            | Female             | 70        | 24.1           |
| <b>Qualification</b>       | FSLC               | 67        | 23.1           |
|                            | WAEC               | 98        | 33.8           |
|                            | ND/NCE             | 109       | 37.6           |
|                            | HND/B.Sc. & Others | 16        | 5.5            |
| <b>Years of Experience</b> | 3-6 years          | 95        | 32.8           |
|                            | 7-10 years         | 116       | 40.0           |
|                            | 11 years and above | 70        | 27.2           |
| <b>Departments</b>         | Finance            | 48        | 16.6           |
|                            | IT                 | 80        | 27.6           |
|                            | Sales/marketing    | 136       | 46.9           |
|                            | HR                 | 26        | 9.0            |
| <b>Level of Workers</b>    | Top                | 30        | 10.3           |
|                            | Medium             | 108       | 37.2           |
|                            | Lower              | 127       | 43.8           |
|                            | Others             | 25        | 8.6            |

Source: Field Study, 2024

Table 2 findings indicates that 220 (75.9%) respondents were male, while 70 (24.1%) respondents are female. This shows that large number of male participated in the study when compared with female. This interpret that the study is not gender biased.

Table 2 also, presents the academic qualifications of the participants. The results showed that 67 (23.1%) respondents had FSLC qualification, 98 (33.8%) respondents had WAEC certificate, 109 (37.6%) respondents had OND/NCE certificates and 16 (5.5%) respondents had HND/B.Sc. and above qualifications.

This interpret that the respondents are learned as such they are capable to provide the necessary information needed in this study.

Table 2 further, indicates the years of service of the respondents. The results show that 95 (32.8%) respondents had 3-6years service years, while 116 (40.0%) respondents had 7-10 service years. Additionally, 79 (27.2) respondents had 11years and above service years.

Table 2 demonstrates the departments where the respondents were working in the surveyed companies.



The results show that 48 (16.6%) respondents are working in finance department, while 80 (27.6%) respondents worked in Information Technology department. Additionally, 136 (46.9%) respondents are working in sales/marketing department. 26 (9.0%) respondents are working in Human Resources department of the surveyed firms.

**Table 3: Pearson correlation analysis**

| Variables |     |        |
|-----------|-----|--------|
| 1.        | GPP | .791** |
| 2.        | GPT | .268** |
| 3.        | OP  | .500** |

Key: \*\* $p < 0.01$ ; N = 290, GPP: Greening Process in Packaging practices; GPT: Greening Process in Technology  
Source: SPSS version 25 output

Pearson correlation was computed for each of the variable as shown in Table 3 above and results shows the relationship between greening process in packaging practices and organizational performance. Findings from Table 3 showed that there is a significant relationship between greening process in packaging practices and organizational performance ( $r = .791^{**}$ ;  $p < .01$ ). This implies that greening process in packaging practices tends to increase organizational performance. Furthermore, Table 3 showed the correlation between greening process in technology and organizational performance. Result showed that there is a positive relationship between greening process in technology

Table 2 provides insight into level of workers in the surveyed organizations and signifies that out of the total respondents, 30 (10.3%) are top level staff, 108 (37.2%), were categorized under medium level staff. Additionally, 127 (43.8%) respondents were identified as lower-level staff and 25 (8.6%) respondents belong to others category.

Test of Hypotheses

and organizational performance ( $r = .268^{**}$ ;  $p < .01$ ), implying that as greening process in technology increases organizational performance tends to improve accordingly

It is worthy to note that, the above correlations test cannot explain causality. Hence, regression analysis was conducted in order to examine cause and effect

### Test of Hypotheses

#### Hypothesis One

Ho<sub>2</sub>: Greening process in packaging practices does not affect organizational performance of selected companies in Lagos State, Nigeria

**Table 4: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate <sup>2</sup> |
|-------|-------------------|----------|-------------------|-----------------------------------------|
| 1     | .390 <sup>a</sup> | .152     | .149              | .49370                                  |

a. Predictors: (Constant), GREENING PROCESS IN PACKAGING PRACTICES

Source: SPSS version 25 output

Table 4 above showed the regression output of greening process in packaging practices and organizational performance of surveyed companies. Results from the table 4 showed a regression value ( $R = .390^a$ ), this showed that greening process in packaging practices affect organizational performance of surveyed companies. Further result of the  $R^2 = .152$  showed that greening process in packaging practices contributed 15.2% of the variance in organizational performance of

surveyed firms. Since, the value is greater than 0.5 this showed that the model is effective enough to determine the relationship between greening process in packaging practices and organizational performance of surveyed companies. This is a significant amount as such it is safe to conclude that greening process in packaging practices could predict organizational performance of companies covered in the study.

**Table 5: ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 12.600         | 1   | 12.600      | 51.697 | .000 <sup>b</sup> |
|       | Residual   | 70.196         | 288 | .244        |        |                   |
|       | Total      | 82.797         | 289 |             |        |                   |

a. Dependent Variable: ORGANIZATIONAL PERFORMANCE

b. Predictors: (Constant), GREENING PROCESS IN PACKAGING PRACTICES

Source: SPSS version 25 output

Table 5 above showed the ANOVA output of the variables under consideration. Results from the table 5 showed  $F(1); 289=51.697$ ;  $p=.000$ ) this indicates that the relationship between greening process in packaging practices and organizational performance is a good fit

and significant, given that the F- calculated is greater than 1. This is also a proof that greening process in packaging practices was a good predictor of organizational performance of sampled companies in Lagos state, Nigeria.

**Table 6: Coefficients<sup>a</sup>**

| Model |                                         | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------|-----------------------------------------|-----------------------------|------------|---------------------------|--------|------|
|       |                                         | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant)                              | 3.102                       | .155       |                           | 20.016 | .000 |
|       | GREENING PROCESS IN PACKAGING PRACTICES | .291                        | .040       | .390                      | 7.190  | .000 |

a. Dependent Variable: ORGANIZATIONAL PERFORMANCE

Source: SPSS version 25 output

Table 6 showed the coefficient between the variables under consideration. Findings showed sig. value =.000 which is below the tolerable level of significance for the study (0.05). Based on the significant value which is .000 the null hypothesis is rejected and the study therefore accepted that greening process in packaging

practices affect organizational performance of selected companies in Lagos State, Nigeria.

### Hypothesis Two

Ho<sub>3</sub>: Greening process in technology has no significant effect on organizational performance of selected companies in Lagos State, Nigeria

**Table 7: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .360 <sup>a</sup> | .129     | .126              | .50031                     |

a. Predictors: (Constant), GREENING PROCESS IN TECHNOLOGY

Source: SPSS version 25 output

Results from table 7 above indicated a regression value ( $R=.360^a$ ), this showed that greening process in technology has significant effect on organizational performance. Further result of the  $R^2=.129$  showed that greening process in technology contributed 12.9% of the variance in organizational performance. Since, the result is less than 0.5 this showed that the model is

ineffective to determine the significant effect that exist between greening process in technology and organizational performance. This is insignificant amount as such it is not safe to conclude that greening process in technology could predict organizational performance of selected companies in Lagos State, Nigeria.

**Table 8: ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | Df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 10.708         | 1   | 10.708      | 42.779 | .000 <sup>b</sup> |
|       | Residual   | 72.089         | 288 | .250        |        |                   |
|       | Total      | 82.797         | 289 |             |        |                   |

a. Dependent Variable: ORGANIZATIONAL PERFORMANCE

b. Predictors: (Constant), GREENING PROCESS IN TECHNOLOGY

Source: SPSS version 25 output

Table 8 above showed the ANOVA output of the variables. Results from the table showed  $F(1); 289=42.779$ ;  $p=.000$ ) this indicates that greening process in technology has significant effect on organizational performance. Also, it is a good fit and

significant, given that the F- calculated is greater than 1. This is a proof that greening process in technology was a good predictor of organizational performance of selected companies in Lagos State, Nigeria.

**Table 9: Coefficients<sup>a</sup>**

| Model |                                | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|--------------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                                | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)                     | 2.248                       | .299       |                           | 7.511 | .000 |
|       | GREENING PROCESS IN TECHNOLOGY | .466                        | .071       | .360                      | 6.541 | .000 |

a. Dependent Variable: ORGANIZATIONAL PERFORMANCE

Source: SPSS version 25 output

Findings from table 9 showed sig. value =.000 which is below the tolerable level of significance for the study (0.05). Based on the significant value which is .000 the null hypothesis is rejected and agreed with assumption that greening process in technology has significant effect on organizational performance of selected companies in Lagos State, Nigeria is accepted.

### Discussion

Findings from hypothesis one tested revealed that greening process in packaging practices has significant effect on organizational performance of selected companies in Lagos State, Nigeria. These findings are in view of Umair *et al.* (2019) whose research conducted indicates that stock, lead time and shipping positively associated with customer satisfaction. Furthermore, it was found from hypothesis two that greening process in technology has significant effect on organizational performance of selected companies in Lagos State, Nigeria. The findings align with Sorin *et al.* (2023) who found that automation and optimization of processes can be of great benefits for businesses to address customer satisfaction and organizational performance. The result is also supported by Shailendra and Supriyo (2020) who in their study discovered that internet of things (IoT) affect green logistics operations. Their study also support this study as it revealed that innovation adoption especially in information technology cannot be over look, same as this study found that technology play an important part in enhancing organizational performance

### Conclusions

The study examined effects of green logistics on organizational performance of selected companies in Lagos State, Nigeria. The study concluded that greening process in packaging practices significantly relate with organization performance of surveyed companies in Lagos state, Nigeria. This was evidence in hypothesis one tested which agreed with assumption that greening process in packaging practices affect organizational performance of selected companies in Lagos State, Nigeria.

The study also concluded that there is significant relationship between greening process in technology and organizational performance of surveyed firms as

agreed by hypothesis two tested and findings of the study.

### Recommendations

The study recommends that:

1. Corporate organizations and government should embrace greening packaging practices and technology
2. Government should enact laws to support greening process in technology
3. National Orientation Agency should organize seminar, workshops and programs in order to enlighten the populace about the benefits of green logistics concept

### Limitations

The research was limited by inadequate literature materials especially on the total number of road transport and logistics users in Nigeria which was difficult to comeby, reason while the study adopted reports of annual returns and information on the website of the selected companies to make the study population. Lastly, resistance of some respondents to properly fill and return the questionnaires distributed to them constitute another huge barrier to this study in which the study consulted the respondents every two weeks before they were able to fill and return the questionnaires.

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## Digital Governance Initiative: Evaluating the Effect on Secured Transparency and Accountability in the Lagos State Civil Service

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### Abstract

*Accountability is critical to every organisation as it forms the basis of transparency. Broadly, this paper explored the how digital governance initiative has influenced the enhancement of accountability and transparency in the Lagos State Civil Service. Specifically, it assesses the effect of digital governance on transparency and accountability initiative in Lagos State Civil Service and analysed the issues of accountability and transparency in the study area. A descriptive research design was adopted for this study using a simple random technique approach from a sample of 160 respondents. Findings shows that that application of digital governance initiative enhanced transparency, that there was enhanced auditing and monitoring practice through the application of digital governance initiative. However, digital governance application faced issues such as lack of modern digital tool, digital divide and digital literacy in securing sound accountability and transparency in the Lagos State Civil Service. The paper concluded that digital governance initiative has had fair positive effect on transparency and accountability in Lagos State Civil Service. The study recommends through increased transparency, digital governance can help make government operations more trustworthy by providing employees and citizens at large, with access to data on public finances, laws, and programmes. This increased transparency could help reduce corruption and promote accountability.*

**Key words:** Accountability, Transparency, Digital, Governance, e-governance, e-government.

### Introduction

Globally, when the main goal of the Millennium Development Goals (MDGs) in the twenty-first century, is to promote good governance through mutually beneficial state-citizen interaction, transparency and accountability in public sector management have become global concerns. Effective supervision of the government's administrative apparatus is essential. "Active disclosure" of governance information to important stakeholders, such as the general public, auditors, and any other organisation serving as a watchdog over public officials, is necessary for effective monitoring. Since the public now has such easy access to knowledge on governance, most involved and local people need to stay informed about issues pertaining to local, national, regional, and global governance and politics (OECD, 2023).

Digital Government for Development (2023) posits that an appreciable and acceptable degree of governments, globally embracing digital governance is fundamentally changing with the advent of digital governance. Worldwide, most governments are using information technological power in revolutionary

forms, particularly in establishing quantifiable administrative goals to enhancing the delivery of public services; from adopting evidence-based policies to making data-driven decisions, from guaranteeing increased transparency and accountability aimed at fostering higher public confidence. A framework for defining duties, responsibilities, and power of making decisions for an organisation's digital existence; that is, its mobile sites, websites, social media accounts, among other internet-based or web-enabled services is known as digital governance. Moreover, digital governance framework can also be viewed as a structure that transfers decision-making power for specific digital services from the organisational core to other organisational components (Welchman, 2014).

Information and communication technology (ICT) integration in the public sector that is purposeful is known as "digital governance," is becoming more widely recognised as a revolutionary strategy to improve governmental accountability and transparency (Lnenicka & Nikiforova, 2021). Despite the intense discussion surrounding information practices theory concepts like transparency, the use

of ICT has not demonstrated that algorithm systems inclusion into digital services that are provided by governments are transparent (Janowski, Janssen, & Matheus, 2021).

Numerous issues, including inadequate income data collection and analysis, opaque accounting, ineffective internal control, and financial reporting, plague the Lagos State Civil Service today (Eze et al., 2004). Technology has profoundly changed many facets of human existence, including how governments engage with the public and provide public services (Nkwe, 2012).

It is abundantly evident that the presence of moral principles and civil servant accountability in Nigeria is the primary way to guarantee the Nigerian government's adherence to the standards of responsible leadership and good governance (Rasheed, 1995). The hallmarks of successful government are accountability and ethics, which confer legitimacy and garner public support. It is impossible to overstate the importance of ethics and accountability in building a government that will be receptive to the desires and ambitions of the populace. The moral guidelines that govern a civil servant's actions are called ethics. It entails supporting and endorsing the notion of appropriate and inappropriate behaviour (Rasheed, 1995).

It is only possible to have Lagos State civil servants officials hired, not elected, to fulfil the government's statutory duty of providing services if they are aware of the codes of conduct designed to maintain accountability and efficient service delivery (Rasheed, 1995). This essentially means that the implementation of regulatory mechanisms which constitutes public service norms is necessary to ensure accountability in the study area. The people want accountability from those who are expected to provide services, both in terms of accomplishments and shortcomings, and from those who are entrusted with the management and distribution of public monies, regarding how those funds are used (Okigbo, 1999).

Establishing regulatory systems can facilitate the attainment of accountability in the study area. Many Nigerians on the right have expressed disapproval at the civil servants' lack of response to their constitutional duties. The actions of federal workers clearly reflect an accountability deficiency and an accountability issue. Their mercenary and self-serving interests dictate how they operate. Against this backdrop, this study analyses the effect of applying digital governance initiative to enhancing accountability and transparency in the Lagos State Civil Service.

### **Problem Statement**

Nigeria's issue of inadequate accountability in the public sector has grown to be a major worry, resulting in pervasive corruption and inefficiencies in service delivery. Notwithstanding the inherent

potentials of e-government in improving accountability, efficiency, and transparency, its uptake in Nigeria is still restricted, particularly in the study area. The effective administration of e-governance projects in Nigeria faces an array of problems, which among others include lack of competent human resources, reluctance to change, and inadequate ICT infrastructure (Agwu, 2014). Regarding quality of services provided publicly to residents is negatively impacted by this circumstance, and public confidence in government institutions is decreased. Nigeria's public sector is rife with corruption and accountability issues, which has a serious negative effect on the country's growth and socioeconomic advancement. The constraint uptake of digital governance in Nigeria begs the question of whether it can enhance public accountability, especially in institutions that offers public services such as the Lagos State Civil Service.

Transparency concerns within the Lagos State Civil Service pertain to a situation when public personnel, acting alone or in concert, seem to misuse their positions in a way that undermines public trust. Anger (2002) pointed out that attempts to pursue some kind of personal benefit at the expense of the public might also give rise to such unethical actions. Conflicts of interest, allegiances, or ideals are also relevant. When enforcing policies, civil servants often transgress the ethical standards of neutrality, loyalty, respect, civility, and integrity. On the other hand, accountability is a persistent problem for the Nigerian Civil Service. Accountability issues can take various forms, such as corruption, red tape, nepotism, and the wastage of material and human resources. Among these issues, corruption stands out the most.

The civil service has a bad reputation due to the widespread and pervasive influence of unethical behaviour, such as tribalism, syphoning of public funds, corruption, bribery, and other fraudulent behaviours that the civil officers were portraying. The institutional framework for enforcing ethical and accountability standards is weak, which has made the previously mentioned ethical deficit actions in the civil service worse. Given the significance of accountability and transparency in government, particularly in the digital age, this research is highly relevant as it considers two specific objectives by evaluating digital governance initiative effect on accountability of civil servants and issues of transparency and accountability in the study area. It is anticipated that the findings of this study will give the public, policymakers, and government new perspectives on how e-government might be utilised to raise the standard of public services

### **Conceptual Nexus**

#### **Digital Governance**

The foundation of digital governance is based on the sense that more access to information underscores

resultant increased public trust in government, better institutional accountability, and increased citizen involvement are enhanced (Ansell & Torfing, 2021). By implementing open data rules, Indonesia has made significant strides towards a more transparent and participatory governance model in response to persistent problems like corruption and bureaucratic inefficiency (Young et al., 2020).

Agostino et al. (2022) noted that digital governance implies the application of electronic means by governments to ensure proper administration of public services. This extensively leads to total transformations of service delivery through digital technologies. This however speaks volume of the growing importance attached to the use of Information Communication Technologies in providing significant varying public worth such as e-governance, digital technologies and e-government. In addition to increasing stakeholders' contributions to national and local development, digital government has deepened the governance process and increased the efficacy and efficiency of public sector service delivery (Cole, 2020).

### **e-Government**

e-Government and "modernized/online/digital governance have been interchangeably used overtime when discussing the subject (Gil-Garcia 2005). The rising wave of internet services resulted to both the term " e-Commerce and e-Government " (Horan & Gronlund, 2004). Though the background of computers and ICTs in government organisations dates back to the early days of computers. Kraemer et al. (1978) noted that e-government initially surfaced in the late 1990s. While more current e-government literature emphasises on the outward use of IT, such as citizen services, historical e-government literature from the 1970s defined e-government as the application of information technologies within government. (Ho, 2002). Today's e-government goes beyond simple automation to address issues ranging from values, service processes and decision-making (Horan, 2004). Heeks (2003) views e-government as the introduction and use of information communication technologies to improve the operations of organisations in the public sector, offering the prospect of increased efficacy and efficiency. The utilisation of internet-based applications and other IT by the government, along with the procedures that put these technologies into practice. These include;

- a) Enhance the availability of government information and services to the general public, other agencies, and other government bodies, or;
- b) Make changes to government operations that will enhance their efficacy, efficiency, quality of services, or transformation.

Accordingly, the World Bank claimed that application of ICT technologies can aid wide range of purposes, including more effective government

management, better Increasing access to knowledge and improving connections with business and industry can empower citizens. Benefits that follow may include reduced corruption, higher public accountability and transparency, improved revenue or cost savings and increased convenience. This study's goal is to define e-government as the process by which governments allow people and companies the chance to communicate with the government and transact business using a range of electronic media, such as smart cards, fax machines, touchpad phones, email, and the Internet, by utilising ICT. It implies the internal organisation of government, including the rules, regulations, and frameworks that are put in place to carry out service delivery, coordinate, communicate, and integrate processes.

### **Information Communication Technology (ICT)**

ICT includes a wide range of technological resources and tools that are used in creating, managing, storing, and sharing information. This study considers ICT as a collective name encompassing technologies utilised for information gathering, archiving, analysis, and sharing across a range of media. IT specialists manage all computer-related tasks, such as database management and data storage, in addition to handling all other facets of information processing, retrieval, transmission, security, and storage. Technologies that enable information access via telecommunications are referred to as ICT. As a result, ICT will be understood in this study as the use of communication technologies for information management.

### **Ethics**

Ethics are the set of guidelines that specify moral behaviour based on a particular group's ideology. Ethics helps to make the public and the administration more accountable. Following a code of ethics guarantees that the public is served fairly and with necessities. It also gives the administration operational standards related to honesty. That integrity then serves to bolster the community's trust. By cultivating this feeling of trust, the organisational management aids the people in realising that they are operating in their overall best interest.

A code of ethics also sets professional expectations among public sector colleagues, both from their bosses and from one another. Robust ethical codes for public administration give leaders the guidance they need to finish their work and inspire staff and committees to execute the law fairly and professionally. Moral standards of behaviour are known as ethics (Vittal, 2002). A central position in the art of governance was held by the idea of ethics. Every society needs to adhere to certain moral standards in order to develop and advance. Because of the use of concepts that are difficult to measure or quantify, such as duty, conflict of interest, morality, accountability, equity, honesty, and trusts, ethics is generally seen as an abstract subject (Ikotun, 2004).

Ethics is the study of moral obligation, act, attitude, or behaviour that conforms to generally accepted norms within a certain community, institution, or setting. Stated differently, different societies and environments have different ideas about what constitutes an ethical code or conduct.

### **Accountability**

Accountability is the term used to describe the procedures and systems that hold people or organisations accountable for their deeds, especially when it comes to performance behaviour and conformity to rules or guidelines. Transparency, answerability, and responsibility are among of its many facets (Bovens, 2021). Policies enacted to control political management, moral behaviour, finances, performance, local democracy, community leadership, and collaboration are at the centre of accountability. It means accounting for, holding accountable for, and considering one's stewardship. Olowu (2002) averred that accountability is seen as a means of making one to answers for one's behaviours or actions. Accountability entails the creation of objective standards of appraisal to help organisation's owners assess how well its members, both as individuals and as units, are carrying out their duties. As a result, Olowu (2002) contended that accountability comprises essential components such as accountability, means of reporting, system of evaluation, incentives, and penalties.

Being held accountable for one's actions entails providing an explanation of the activities committed. The full and satisfactory report of officers who hold public office as well as their stewardship regarding the procurement and use of the resources entrusted to them in carrying out public policy and achieving the goals in compliance with current laws and regulations is known as public accountability. Innuigbo (2015) posited by stating differently that public accountability is keeping a public official responsible for the resources entrusted to him and making sure he provides an accurate report on his use of public resources.

### **Transparency**

Transparency, according to Atuilik and Salia (2019), entails the methodical disclosure of government actions that affect government accounts. The reporting entities are required to provide all relevant information to stakeholders so that they can understand how their resources are being managed. This suggests that stakeholders and other interested parties are in the best position to comprehend and assess the financial performance of the relevant public entity when they have a comprehensive picture of what is happening in various public institutions. Arellano-Gault and Lepore (2011) discovered that when public organisations operate in a transparent manner, their efficiency is significantly raised. This aligns with Public Management Theory,

which mandates that public institution management act more transparently in carrying out their duties while keeping in mind that public stakeholders, such as citizens, development partners, and employees, are interested in their financial performance (2016). Understanding this, Mizrahi and Minchuk (2019) emphasised that having trustworthy and efficient transparency helps build public confidence and raise awareness of how well public institutions are performing. As a result, public sector organisations are given more responsibility for providing public services, even if they are aware that interested parties and public stakeholders are very curious about their financial and non-financial performance.

### **Methodology**

Civil servants from various departments and units in the Public Service Office, and Lagos State Head of Service. The data collected from the field were analyzed in detail with a view to examining what the ethical behaviours in the Lagos State Civil Service are, examine the e-government initiative that enhances transparency and accountability of Lagos State civil servants and identified the disciplinary measures against civil servants' transparency and accountability in the State Civil Service.

To obtain the data required to understand the study's topic, primary and secondary sources were consulted. The study population, 1600 comprised senior, junior and management staff of Lagos State Civil Service in 5 selected ministries; works and housing, finance, local government and chieftaincy title, education and transportation. The sample size of the research study is made up of 160 civil servants using a sample fraction of 10% from the study population. The underlying reason is that respondents will be in a good position to mention the challenges of transparency and accountability in the Lagos State Civil Service despite e-government initiative.

### **Results**

#### **Frequency Distribution of Data on the basis of Respondents Socio-Demographic Characteristics Analysis**

The respondents' sociodemographic information, including their sex, age, marital status, religion, educational background, occupation, and grade level, is presented in this section. These qualities are thought to be crucial for ensuring the validity of the information gathered from study participants. Table 1 revealed that of the respondents, 100 were male (representing 77.5%), and 29 were female (representing 22.5%).

According to the data's interpretation, there were significant differences between the study's male and female populations overall. But since this study is not gender-based, gender is irrelevant. According to table 1's presentation of respondent age categories as captured as follows: 20-30, 13.9%, 31-40, 31.1%, 41-50- 33.3%, while 51 above is 21.7%. Given that the

majority of respondents were between the ages of 31 and 40 and 41 and 50, which are regarded as productive ages, their comments were adequately mature and trustworthy. Table 1 displayed the respondents' marital status as indicated below: 42.6% of people are single, while 57.4% are married. This showed that, on average, all respondents were married, which makes them a valuable source of information for the questions posed in this section. Table 1 categories of the respondents are as follows: Christianity 50.4%, Islam 49.6%, of the respondents respectively. This implied a considerable and most appropriate category of respondents to offer insight to the study though the religion of the respondents never had any adverse effect on the study outcome. In table 1, educational background of the respondents

B.Sc/HND, 40.3%. This showed that the majority of respondents had at least a first degree, which made up a reasonable group of respondents who were thought to be sufficiently educated to provide accurate information and study responses.

The occupation of employees showed middle-level having 50.1% of the respondents having the highest. This implied that more of middle level employees participated in the survey thereby providing useful information as shown in the study. In table 1, grade level showed that 7-13 years of the respondents had 49.6%. This implied that most respondents have risen through level of 7-13 in service and are knowledgeable enough to provide useful information in the study area.

**Table 1 Socio-demographics Characteristics of the Respondents**

| Demographic Characteristics | Category          | Frequency (f) | Percent (%) |
|-----------------------------|-------------------|---------------|-------------|
| Gender                      | Male              | 100           | 77.5        |
|                             | Female            | 29            | 22.5        |
|                             | Total             | 129           | 100.0       |
| Age                         | 20-30years        | 18            | 13.9        |
|                             | 31-40years        | 40            | 31.1        |
|                             | 41-50years        | 43            | 33.3        |
|                             | 51years and above | 28            | 21.7        |
|                             | Total             | 129           | 100.0       |
| Marital Status              | Single            | 55            | 42.6        |
|                             | Married           | 74            | 57.4        |
|                             | Total             | 129           | 100.0       |
| Religion                    | Christianity      | 65            | 50.4        |
|                             | Islam             | 64            | 49.6        |
|                             | Total             | 129           | 100.0       |
| Educational Background      | WASSCE/SSCE/GCE   | 28            | 21.7        |
|                             | OND/DIP           | 47            | 36.4        |
|                             | B.SC/HND          | 52            | 40.3        |
|                             | MSC/MA/MPA/Ph.D   | 2             | 1.6         |
|                             | Total             | 129           | 100.0       |
| Occupation                  | Management        | 10            | 7.8         |
|                             | Middle-Level      | 65            | 50.4        |
|                             | Lower-level       | 54            | 41.8        |
|                             | Total             | 129           | 100.0       |
| Grade level                 | 1-6years          | 42            | 32.5        |
|                             | 7-13years         | 64            | 49.6        |
|                             | 14-17years        | 23            | 17.8        |
|                             | Total             | 129           | 100.0       |

Source: Field Survey, 2025

### **Objective 1: Digital governance initiative effect on accountability of civil servants in Lagos State Civil Service**

This section uses a likert scale of measurement strongly agreed, undecided, disagree, and strongly disagree to analyse the respondents' opinions regarding the effect of digital governance on the accountability of civil officials in the Lagos State Civil Service on a scale of 1 to 5.

Table 2 indicates that 79.1% of the participants were of the view that application of digital governance

initiative enhanced transparency. This implied that there was high rate of transparency achieved in this respect as it applies to civil servants in Lagos State.

Moreover, 81.3% of the respondents noted an improved employees engagement as digital governance structure was deployed in the area of study. This implied that employees participation became better in the Lagos State Civil Service at large. In table 2, 58.1% of the respondents were of the opinion that there was reduced corruption and streamlined processes in the State Civil Service. This implied that services became modernised thus

depletion of corrupt tendencies was attained maximally.

Further, table 2 showed 60.3% of the respondents averred that there was enhanced auditing and monitoring practice in the Lagos State Civil Service. This implied that auditing and monitoring were well achieved via the instrumentality of digital

governance initiative spiralling civil servants transparency and accountability. In table 2, 58.1% of the respondents stated that real-time feedback mechanisms was evident. This implied that there was application of there was feedback apparatus in the Lagos State. Civil Service thus enhancing mutual intelligibility across strata of employees.

**Table 3: Digital governance initiative effect on accountability of civil servants in Lagos State Civil Service**  
Source: Field survey, 2025

| VARIABLES                                    | STRONGLY AGREE |      | AGREE    |      | UNDECIDE D |      | DISAGREE |      | STRONGLY DISAGREE |      |
|----------------------------------------------|----------------|------|----------|------|------------|------|----------|------|-------------------|------|
|                                              | <i>f</i>       | %    | <i>f</i> | %    | <i>f</i>   | %    | <i>f</i> | %    | <i>f</i>          | %    |
| Enhanced Transparency                        | 50             | 38.8 | 52       | 40.3 | 10         | 7.8  | 11       | 8.5  | 6                 | 4.6  |
| Improved employees Engagement                | 45             | 34.8 | 60       | 46.5 | 17         | 13.2 | 2        | 1.6  | 5                 | 3.9  |
| Reduced Corruption and Streamlined Processes | 28             | 21.7 | 47       | 36.4 | 18         | 13.9 | 17       | 13.2 | 19                | 14.7 |
| Enhanced Auditing and Monitoring             | 41             | 31.7 | 37       | 28.6 | 25         | 19.4 | 15       | 11.6 | 11                | 8.5  |
| Real-time Feedback Mechanisms                | 15             | 11.6 | 60       | 46.5 | 15         | 11.6 | 24       | 18.6 | 15                | 11.6 |

Table 3 dealt with the study's second goal. It made an effort to analyse respondents' agreement or disagreement frequencies about issues relating to digital governance application on accountability and transparency in the Lagos State Civil Service: strongly disagree, disagree, uncertain, and highly agreed, with a range of 1 to 5.

Table 3 indicates that 83.7% of the respondents were of the view that there was lack of modern digital tool. This implied that transparency and accountability were discovered be marred by dearth of modern digital equipment to be administered in that regard. Thus, unethical cases ensued in the civil service of Lagos State. Additionally, table 3 showed 52.7% of the respondents held the that there was manipulation of digital tools to suit individuals' interest. This implied most a conspiracy to frustrate the system to suit personal gain was noted.

In table 3, 69% of the respondents were of the view that there was a case of the digital divide. This implied that by excluding certain groups of employees, unequal access to technology and internet connectivity can impede equitable access to the advantages of digital governance and give rise to new types of vulnerability. As shown in table 3, 65% of the respondents stated that there was digital literacy.

This implied that both employees and government representatives who lack digital literacy might find it difficult to use digital tools and platforms effectively, which will hinder their capacity to employ digital governance for accountability.

As presented in table 3, 72.1% of the respondents view showed that there was data security and privacy issue. This implied that strong cybersecurity measures are necessary when handling huge volumes of sensitive data in order to guard against illegal access and safeguard citizens' private information of Lagos State Civil servants were absent. Moreover, 75.9% of the respondents observed institutional capacity. This implied that there was dearth of strong political will, competent human resources, and suitable legal and regulatory frameworks necessary for the success of digital governance initiatives in Lagos state civil service.

Moreover, 66.6% of the respondents noted new vulnerabilities. This was impliedly shown in the percentage of agreement and disagreement of the respondents on the assertion raised in this part of the study. Dependence on digital systems creates new threats, such ransomware and cybercrime, which call for thorough risk management plans.

**Table 3: Issues of Ensuring Transparency and Accountability in Lagos State Civil Service**

Source: Field survey, 2025

| VARIABLES                                                   | STRONGLY AGREE |      | AGREE |      | UNDECIDE D |      | DISAGREE |      | STRONGLY DISAGREE |      |
|-------------------------------------------------------------|----------------|------|-------|------|------------|------|----------|------|-------------------|------|
|                                                             | F              | %    | F     | %    | F          | %    | F        | %    | F                 | %    |
| Lack of modern digital tool                                 | 36             | 27.9 | 72    | 55.8 | 6          | 4.7  | 6        | 4.7  | 9                 | 6.9  |
| Manipulation of Digital tools to suit individuals' interest | 40             | 31   | 2     | 1.5  | 19         | 14.7 | 10       | 7.8  | 58                | 44.9 |
| The Digital Divide                                          | 34             | 26.4 | 55    | 42.6 | 23         | 17.8 | 15       | 11.6 | 2                 | 1.5  |
| Digital Literacy                                            | 17             | 13.1 | 67    | 51.9 | 27         | 20.9 | 11       | 8.5  | 7                 | 5.4  |
| Data Security and Privacy                                   | 34             | 26.4 | 59    | 45.7 | 15         | 11.6 | 11       | 8.5  | 10                | 7.8  |
| Institutional Capacity                                      | 40             | 31   | 58    | 44.9 | 19         | 14.7 | 10       | 7.8  | 2                 | 1.5  |
| New Vulnerabilities                                         | 30             | 23.2 | 56    | 43.4 | 12         | 9.3  | 23       | 17.8 | 8                 | 6.2  |

**Major Findings**

Additional discussion of the aforementioned study findings was given in this section. It brought the results of this study into line with similar empirical findings from other studies on the same topic. Nonetheless, it confirmed the degree of discrepancy between this study's conclusions and other empirical results.

Digital governance enhances service delivery. As noted by Meijer (2021), automating bureaucratic procedures, cutting down on paperwork, and enhancing citizen interaction through online platforms, e-governance has simplified the delivery of government services. Further, administrative expenses have been greatly decreased by the use of cloud computing, automated workflows, and AI-driven decision-making systems. Emerging technologies like artificial intelligence (AI), blockchain, and big data will become more and more important in determining the direction of governance as the digital transition progresses. This was affirmed by Chowdhury (2024) that to protect employees' rights, this change also necessitates strong legal and moral frameworks. Digital professional analytics has made a substantial contribution to supply chain stabilisation and enhanced financial risk management in public administration following economic disturbances brought on by global crises.

Findings also showed that issues regarding digital governance in Nigeria was a situation of low e-government index, placing the nation 137th out of 193 examined nations. This indicates that digital governance promise to improve public service delivery and accountability has not yet been completely realised by Nigeria's public sector., which has affected Lagos State Civil Service at the state level. An additional discovery indicated that the

Lagos State Civil Service continues to encounter several obstacles when putting e-governance projects into practice. For example, inadequate infrastructure—such as a steady supply of electricity and dependable internet connectivity—hinders the successful implementation of e-governance programmes. Building staff capacity is also necessary to help them use e-governance tools and technologies efficiently. To prevent unauthorised access to and use of private information, it is also necessary to address the issue of data privacy and security.

These programmes, nevertheless, have not yet been completely incorporated into the larger public administration structure and have a narrow scope. Because of this, there is still a big difference between how much e-governance has progressed in Nigeria and how much more it could do to enhance the delivery of public services. Moreover, the government, business community, civil society organisations, and the general public must work together to successfully implement electronic governance programmes in the Lagos State civil service and other governmental bodies. For e-governance to be implemented successfully, the Nigerian government must thus devote resources to policy frameworks, infrastructure development, and capacity building. To guarantee that e-government efforts align with the expectations and needs of Lagos State Government employees, it is equally of importance for more citizen involvement. Notwithstanding these difficulties, the Lagos State Civil Service has undertaken a number of noteworthy e-government projects. For instance, the Lagos State Civil Service has set-up an online portal where taxpayers can submit payments and complete their tax returns. As a result, the government of Lagos



State has made available a platform for the implementation of an online identity registration system for its personnel.

### Conclusion and Recommendations

The study has explored dynamics of digital governance and how it impacts accountability and transparency in the delivery of public services. However, the Lagos State Civil Service can benefit from increased public accountability and transparency thanks to e-government. E-governance can aid in holding public servants responsible for their deeds and decisions by enhancing transparency and information access. Additionally, regarding infrastructure: The insufficiency of ICT infrastructure, encompassing inadequate power supplies, restricted internet connectivity, and restricted access to computers and smartphones, impedes the successful execution of e-government programmes, consequently impeding accountability and transparency. An other major obstacle is the State Civil Service's low financial resources allotted to e-government programmes. Because of this, government organisations have found it challenging to create and carry out e-government programmes that could enhance the provision of public services. Human capacity: One major obstacle facing Lagos State is the shortage of qualified personnel to create and carry out e-governance projects. This involves a deficiency in project management, data analytics, and software development knowledge. The study came to the conclusion that the Lagos State Civil Service's e-government programme had less of an influence on accountability and transparency due to the faults that were discovered with it.

Following a thorough examination and critical evaluation of digital governance initiative on accountability and transparency in the public sector, this study offers the following recommendations:

**Increased transparency:** Digital governance can help increase government operations' openness by providing citizens with access to data on laws, programmes and public finances. This enhances openness may aid in lowering corruption and fostering accountability.

**Efficient Service Delivery:** By cutting red tape and processing times, digital governance will assist the Lagos State Civil Service in providing public services more efficiently. This has the potential to enhance public confidence in government institutions and the government's capacity to fulfil its commitments.

**Better Record-Keeping:** Digital governance can aid in the public sector's record-keeping and information management, which can aid in the fight against corruption and fraud. Improved record-keeping can facilitate the detection and investigation of wrongdoing by making it possible to hold public authorities accountable for their actions. Furthermore, by helping the Lagos State Civil Service to gather,

store, and analyse data more effectively and efficiently, e-governance projects can enhance data management. This can lessen errors and inconsistencies in data and enhance decision-making. Real-time Reporting: Digital governance makes it possible to report on government actions in real-time, which can increase public accountability. Digital governance can encourage public officials to be more accountable by making it easier to monitor their actions and choices by giving timely and reliable information on government operations. The programme may be able to reduce unethical behaviour while fostering more public confidence.

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## Fiscal Responsibility for the Development of the Nigerian Nation

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### **Abstract**

*This paper considers the fiscal responsibility bill as an instrument for enthroning good governance and act as internal check mechanism for the public service fiscal management. It called for financial accountability and the prudent management of public resources by the leadership. Using the public choice theory, the paper argued that the personal aggrandizement of both the political and bureaucratic leadership, underlies the direction of policy making and implementation. That this self-centered attitude to public sector management has largely contributed to the unsuccessful outcome of what the leaders provide. This mismatch of what constitutes policy and how they positively or negatively contributes to the philosophy of governance, takes major consideration here. It was recommended that a new re-approachment be adopted by the leadership on issues of good governance such that the people would be served and properly too. And that it is only based on this mutual symbiotic relationship that good governance can be guaranteed.*

**Keywords:** Fiscal Responsibility, Governance, Development, Public Finance, Economy, Nation

### **Introduction**

The process through which government raises revenue, how the revenue is spent and the implications of mobilizing these revenue from diverse sources, and of expending them in the economy is what technically can be referred to as public finance. Instruments that constitute public finance are usually expressed in the yearly budgets and carried out through the use of fiscal policies of varying aggregates such as total government spending and total tax revenues in order to achieve certain macro-economic goals.

The classical economic theories with their laissez faire philosophy believed that government should play very minimal role in public finance, since the believe is that government expenditure is largely unproductive vis-à-vis the private sector. But the Keynesian economists believe that, apart from funds generated by governments, such funds can be used to curb inflation, unemployment, conspicuous consumption and redistribution of income. It follows therefore that increased government spending would go a long way to stimulating output and employment by bringing idle resources into use (Ladele, 1992). Government dominant position in the economy becomes inevitable

for the sustainable growth of a nation; especially in developing economies such as that of Nigeria.

This position of government however being at the commanding height of the Nigerian economy was disrupted in 1986 with the introduction of the Structural Adjustment Programme (SAP), that introduced some fiscal reforms (discipline) in line with the demands of International Monetary Fund (IMF) and World Bank dictates. The position of these international monetary bodies are outrightly not too draconian if benefiting nations can exercise fiscal discipline in their financial transactions (Mukoro; 2022).

This is the Crux of what this paper centres around. It believes that good governance, the stabilization pursuit and the sustainable development of Nigeria revolves around maintaining fiscal discipline through moderate and sustainable budget deficits, while the fiscal reforms strives to improve the structure and administration of government. It sets out to argue that the composition and control of public expenditure must be prudentially managed in order to enhance an efficient public finance mechanism (Teshihoro, 2018). The need for self check and to prevent the attitude of public profligacy and

financial indiscipline was ironically the reasons why the fiscal responsibility Act was put in place in 2007, by the Nigerian National Assembly (The Act, 2007). In line with the requirements of the fiscal responsibility Act, Several State's Houses of Assembly have domesticated their own version of their fiscal responsibility laws.

### **Statement of problem**

The idea of a prudent fiscal management underlies the efficient deployment of state resources for the benefit of alleviating the living condition of the citizens and consistently sustaining a higher standard of living of the people. Governance in itself is all about selflessness, efficient services delivery and maintaining an acceptable standard of living index, where infrastructures are available and working to the satisfaction of the people, where the people's commonwealth is evenly distributed and properly allocated to promote development and where transparency becomes the common denominator for leadership.

Since state resources belongs to all, a transparent, accountable, and a knowledgeable leadership should inform the calibre of managers of this common treasure. That is the reason why national policies should not only be people centred, it should be anchored on an accountable and transparent justice system where the rule of law supersede personal aggrandizement and where equity, justice and the spirit of co-ownership should drive policy making and implementation. It is based on these ethical foundations that the fiscal responsibility bill was incubated into a workable document to guide the performance of public officers in the spirit of efficiency, transparency, accountability and the promotion of good governance.

Experience has proven that the spirit that gave birth to the fiscal responsibility bill is trite and proper. But the process of its managerial engineering is where the problems lies. In the face of this setback, Nigeria is known as a nation with an abundance of rules, regulations, institutions, and internal check mechanisms. The question therefore arises why all these in-built check phenomenon have not been able to obviate the prodigal tendencies toward the management of the nation resources for the benefit of all and sundry. This account for the missing link responsible for why corruption and miss-management of the public treasury still thrives and refuses to go away.

### **Fiscal Responsibility, Governance and Development**

It is arguable that democracy has become the main buzz-word and activity in contemporary times. This is because development within the global world has made democracy to wear the toga of international a. Improvement in public policy outcomes and

inevitability. Nigeria in itself has become drawn into this vortex at both theoretical and empirical dimensions. One can say that the end of colonialism ordinarily should signify the end to domination that opens up a pathway to freedom and independence. Sadly enough, it is painful to say that the colonial order has since given rise to a post-colonial order that is as authoritarian and insensitive to the general will (Olowu, Soremekun and Williams, 1995). This messianic characteristics comes to the fore when such issues as the relationship between the State and the society, democracy and the people, economic development, prospects and constraint of the democratization system itself are considered. What can not be denied is that governments are put in place to help the citizens, not to make citizens lives more difficult (Mukoro, 2007).

The project of establishing a specifically western form of political domination has not succeeded in Nigeria. Ake (1993), commented that "what the colonizers of Africa established in the cause of the state project was not so much a state in the western sense but an apparatus of violent repression". He went on to opine that most of the nationalist leaders who came to power at independence decided to inherit the colonial state rather than transform it in accordance with nationalist aspirations. This isolated them and they became increasingly dependent on force to suppress a population that was inclined to revolt against their betrayal and unimpressive performance in office; a performance now epitomized by an economic crisis so deep, it has become life threatening. On the realm of leadership, what is common to them is power and the interest which it serves in terms of capital and resources accumulation in order to continue to be relevant within the political system (Rourke, 2003, Simmons, 2024). Democratic societies are governed by the rule of law and the respect for the inalienable human right of the people. This is what Cranston (1984) quoted Locke as saying. He quoted, saying "The whole trust, power and authority of the civil ruler is vested in him for no other purpose but to be made use of for the good, preservation and peace of men in that society over which he is set....."

The main elements of governance according to Adamolekun (2002) are "rule of law, freedom of expression and association, electoral legitimacy, accountability and transparency and development oriented leadership". While governance should be seen as concern for the effectiveness of a state's institutional arrangements, decision making process and capacity for implementation, democracy expresses popular sovereignty, equality and representativeness. The proper practice of democracy, gives rise to good governance. And good governance can be summarized as;

- b. Implementation by all stakeholders of a set of principles and processes by means of which appropriate public policies will be designed and put into practice (Mukoro; 2008).

### **Theoretical Elucidation**

The public choice theory is selected in this paper to explain the pattern of decision making by political and administrative leadership, based on microeconomic models. The theory focuses on how self-interest motivates politicians and bureaucrats to make certain decisions for the followership. The theory focuses on voting behaviours legislative decision making and bureaucratic behaviour often revealing how private interests can influence public policy.

The theory posits that majority of office holders are motivated by their own self-interest rather than pursuing what constitutes public interest in policy and decision making. The theory believes that individuals are rational actors, making choices that they believe will best achieve their desired outcomes. It can be argued that the public choice theory bridges the gap between political science and economics, by looking at how self-interest comes first and thus determine the collective good (Ostrom; 1971). Buchanan (2017), on his part considered the public choice theory from the perspective of political decision making as it applies to budgeting and fiscal deficit. Ostrom (2015) was able to bring about the understanding of the public choice theory as the application of the methodology of economics to the study of politics. The summary of this theory is that interest groups engage in rent seeking behaviour, using the political process to obtain economic benefits at the expense of the general will of the people. This is just as the political class behave in Nigeria, that puts personal aggrandizement first before service to the people.

### **Fiscal Responsibility and the Developmental Trajectory**

Factually speaking, the major objectives of development includes the improvement in the lives and welfare of the citizens, eradication of poverty, elimination of inequalities in income distribution, providing access to basic needs such as shelter, food, clothing, health, education, creation of employment opportunities and popular participation in the formulation and implementation of policies and programmes (Okojie, 2003). All these lofty aspirations imbued developing nations to resort to development planning in order to achieve rapid growth and transformation of their economics.

The process of planning according to Okojie (2003) essentially involves setting goals and targets which

have to be pursued through policy and programme formulation as well as mobilization of financial, human and material resources for effective utilization. In line with keeping with this dream of economic prosperity after independence in 1960, Nigeria has embarked on four development plans, a Structural Adjustment Programme (SAP), National Rolling Plans, Vision 2010 and the National Economic Policy of 1999-2003.

Specifically, these perspectives for planning for Nigeria can be categorized into:

- (1) First National Development Plan, 1962-1968
- (2) Second National Development Plan 1970-1974
- (3) Third National Development Plan 1975-1980
- (4) Fourth National Development Plan 1981-1985
- (5) Structural Adjustment Programme (SAP) 1986-1988
- (6) National Rolling plan 1990-1992
- (7) Vision 2010; 1997-2010
- (8) Nigeria Economic Policy 1999-2003
- (9) The National Economic Empowerment and Development Strategy (NEEDS) 2003-2007

The NEEDS framework was essentially an articulation of planned policy actions of the federal government, which was expected to be complemented at the state level by state economic empowerment and development strategy (SEEDS) and at the local level by local economic empowerment and development strategy (LEEDS). After several decades of planning, the aspiration of Nigerians for a prosperous economy and stable polity have not been realized. Several socio-economic indicators show that the quality of life of Nigerians have worsened. A major reason for this malaise centres around the lack of good governance. Okojie (2003) captured it thus:

- (a) The promotion of personal interests by the ruling elite to the detriment of the collective needs of the people.
- (b) Bickering within the elite
- (c) Evoking emotive cleavages by the elite such as religion, ethnicity and statism to create disharmony and distrust among gullible citizens, thereby preventing the pursuit of common national goals.
- (d) The use of instruments of power to promote economic interests inimical to the progress of the nation, but which provide avenue for looting public funds often stashed in foreign accounts.

Other possible areas of disaffection concerns political patronage where appointments of all sorts are shared among party loyalist, irrespective of the quality of their contributions to the growth of the nation. In all of these, the commonwealth is frittered away in frivolities (Ake, 1993).

Arising from the various constraints inhibiting the attainment of National goals of development, the fiscal responsibility Act was put in place by the National Assembly in 2007. The major focus of the Act was to provide for “Prudent Management of the Nation’s Resources, Ensuring long Term Macro-Economic Stability of the National Economy, Secure greater accountability and transparency in fiscal operations within the medium Term fiscal policy framework, and the establishment of the fiscal responsibility commission to ensure the promotion and enforcement of the Nation’s Economic objectives: and for related matters”.

To facilitate the efficient performance and delivery on the core mandate of the fiscal responsibility Act, a fiscal responsibility commission was established to

- 1) Compel any person or government institution to disclose information relating to public revenues and expenditure and
- 2) Cause an investigation into whether any person has violated any provisions of this act
- 3) Monitor and enforce the provisions of this act and by so doing promote the economic objectives contained in section 16 of the 1999 constitution of the federal republic of Nigeria

Following this national desire for the national management of the nation fiscal resources is the challenge for every state to also enact their version of their state fiscal responsibility law. Consequent upon which for example, the Delta State House of Assembly enacted their fiscal responsibility laws that became a gazette on the 4<sup>th</sup> of September 2008 (Delta State of Nigeria gazette; 2008) This law was amended to become the Delta State fiscal responsibility (Amendment) law, 2020.

It is pertinent to state that Nigeria has never been in short supply of ethical requirements to enthrone public accountability in governance (Mukoro; 2021) Nigeria has bodies like the;

- 1) Public Complaints Commission (PCC)
- 2) The Public Service Rules
- 3) The Code of Conduct Bureau And Tribunal (CCB)
- 4) The Economic and Financial Crimes Commission (EFCC)
- 5) Independent Corrupt Practices and Other Related Offense Commission (ICPC)
- 6) Whistle Blowing Against Economic Sabotage and Financial Mismanagement
- 7) The Fiscal Responsibility Laws
- 8) The Money Laundry Act

Cognizance has to be taken of the fact that it is not government machineries that are bad, it is the people; the public officials and political leaders that employ the machinery for unethical purposes.

It is for this reason that governments all over the world are preoccupied with how to devise a very effective means for controlling public authorities over the perfunctory manner in which public officers and public agencies discharge their statutory duties, that Nigeria put in place all the above ethical check mechanism (Mukoro; 2023. Ngini, Mojekwu, Chioma and Elechi; 2025). With all the above instruments working perfectly as intended, the country’s development initiatives and roadmaps would no doubt work with that clear intentions to succeed. Several other countries also have this kind of initiative and they are working. Take for example the law of the budget and fiscal responsibility of Montenegro (2014) framework for fiscal responsibility and national development.

The traditional role of public Finance according to Anyanwu (1997), Musgrave and Musgrave (1989), majorly covers;

- a) Allocation functions
- b) Stabilization functions
- c) Distribution functions, etc

All these functions becomes transformational to an economy only if there is good governance. Governance itself involves;

- i) Responsible leadership in the public service
- ii) Accountability in the mobilization and utilization of public funds
- iii) Discipline in handling public responsibilities
- iv) Selflessness in service and
- v) Popular participation (Oshisami, K. and Dean, NP 1988)

Governance or good governance for that matter depends on responsible leadership. Sadly in Nigeria, governance has been diverted from the essential objectives of desirable and necessary service to the people. It has become a crudely parochial , personal and self-serving phenomena, where the citizenry have become so battered, demoralized, and become withdrawn and unconcerned in the process of governance. This is akin to a state where Nigerians have witnessed their rise to greatness and a decline in the state of a bewildered people.

Apart from the clear aberration of military rule, governance has become characterized by vandalism, banditry, plunder, the reign of incompetence and prebendalism. To therefore facilitate good governance, certain institutional and legal framework has to become inevitable in other to attain sustainability in development. These requirements according to Gray and LiAn (1988), Ladele (1992) are;

- 1) Adoption of prudent budget policies

- 2) Reduction of the costs of raising public revenue
- 3) Increasing the efficiency and effectiveness of public spending
- 4) Strengthening the autonomy and accountability of decentralized public entities
- 5) Ensuring consistency between public finance and poverty alleviation goals. Also see Backhaus and Wagner (2005).

Arising from the above positions of emphasis and to progress and develop, Nigeria has to have a crop of leadership that leads by example. Only such leaders can generate confidence in the people, reduce the citizens indifference to government and make the citizens to become actively involved and committed to the task of national socio – economic reconstruction to bring about sustained development. To prevent cynicism, skepticism and the popular consensus of Nigerians on the popular moral bankruptcy of it's leaders, it's macroeconomic policies has to be well and patriotically articulated (Mukoro, 2019). Good or bad governance which shapes the direction of any national aspiration, also defines it's context and regulates it's vitality and vibrancy. That is the reason why Nigerians have to replace bad leadership with a just , democratic, civil and egalitarian leadership that would enthrone a sustainable and desirable ideals of good governance. All these can manifest through instances of some of these measures;

- 1) Raising public revenue to promote greater economic efficiency since beneficiaries will weigh the economic costs and benefits of goods and services.
- 2) Simplicity in tax design and limited use of tax incentives to achieve particular social economic goals.
- 3) Public spending should follow the logic that scarce government resources implies prudent government spending, by considering what government do best and what markets do best. Government has to provide public goods and services that benefit the society at large, invest directly or regulate monopolies that have large returns to scale, relative to size of the market and subsidize goods and services consumed by the poor through accurate targeting.
- 4) Decentralizing public entities in respect of decision making and accountability can help to link costs and benefits and thus improve efficiency. Local decision takers are more flexible and responsive to the needs and preferences of their constituencies. Equally, citizens can best watch over local entities than over central ones (Ladele; 1992, Ngini, Mojekwu, Chioma and Elechi; 2025)
- 5) Government should profoundly reduce the cost of governance.

### **Reform of the Public Service Finance for Sustainable Development.**

According to Iyoha and Itsede (2003), Nigeria is the most populous black nation in the world and has the second largest economy in Africa. Nigeria is naturally well endowed with fertile arable land and rich Forests. It also has large reserves of oil and gas, and currently ranks 6<sup>th</sup> among OPEC countries in oil exportation. Given it's population size and resources, there were high expectations at independence in 1960 that Nigeria would quickly develop and industrialize, and take it's place among the developed nations of the world. After years of independence, virtually all hopes have died, as Nigeria has failed to develop and today remains one of the poorest nations on earth. In other forums, Nigeria has been described as a pathetic paradox; so rich and yet so poor. So endowed and yet so mismanaged, so much potential and yet so prodigal (Igum 2008), Mukoro (2020), quoted Kofi Annan, who was then the secretary general of the united nations, as saying that; "good governance is perhaps the single most important factor in eradicating poverty and promoting development" In the realm of governance, Nigeria's performance has been abysmally low. This failure can be traced to amongst several reasons; a combination of uninhibited particularities such as corruption, incapacity to resolve social conflicts peacefully, external pressure and intervention, rapid technological outclassing, economic and political incompetence (Mukoro,2020). Several policy analyst for example have fore-casted that sustainable development of the nation can be hinged on the improvement in the welfare of the citizens, eradication of poverty, elimination of inequalities in income distribution, providing access to basic needs such as shelter, food , clothing, health, education, employment and popular participation in the formulation and implementation of policies and programmes (Okojie 2003), Ladele (1992), on his path was very categorical as he suggested an increased effort at sourcing for revenue outside of petroleum products by diversifying the economy, minimize the growth of public assets, complete on - going projects and undertake new projects only where they are clearly essential for the economic recovery process. He went on to advocate for the privatization and commercialization of some government enterprises and withdraw from the activities where it is believed the private market is more efficient in resource use.

Other sustainable areas that must be considered are the removal of subsidies whose gains should be ploughed back to the economy in a much more

sustainable manner. The lower levels of government and the communities should be involved in decision making and implementation. This is where the bulk of the country's human, natural and mineral resources abound, but also where poverty is prevalent and the living condition pathetic. Efforts have to be made to curtail the profligate spending of the leadership on security vote and constituency allowance that are largely unaccounted for. These are huge public monies voted for from the public treasury. They occupy a large portion of the public budget. And they are spent especially by the executive and the legislature, without a concern as to letting the people know how such monies were spent. There must be all efforts to reduce fiscal deficits through the cutting of expenditures for productive investment and infrastructure. Efficient management of public finance involves the adequate assessment of the effective means of exploiting and tapping the available as well as the potential sources of government revenue, proper accountability of public finance, constant monitoring of public revenue and expenditure and the curtailment of wasteful spending.

### Prospects and Suggestions

The prospects for a sustainable public sector finance in Nigeria necessitate for the need to curb wastage in the use of government resources, expand the sources of government revenue and make government more flexible in policy formulation and implementation. It is pertinent to say that several socio-economic indicators show that the quality of life of Nigerians have worsened, especially since the SAP era, that led to the depreciation of the Naira. Implementation of about ten rolling plans has not led to any significant improvement in the quality of life of Nigerians (Okojie; 2003).

Interestingly, budget deficits could not be curtailed due to increasing debt servicing and some extra budgeting allocations. These large budget deficits had given room for the accumulation of huge domestic debts which invariably necessitated a reduction on expenditure on economic and social services with serious implications for the future growth and development of the country.

The absence of good governance captures a lot of the constraints on plan implementation in Nigeria. According to the National Economic Intelligence Committee (1996), the issue of governance constitutes the most primary element in any attempt to reorganize, reconstruct and transform the nation and its economy.

In general, the public sector has been subordinated to private political and economic interest group, which have pauperized the economy and

destabilized the polity. Governance is largely in the hands of elites, collaborative civil servants and their supporters at home and abroad.

### Suggestions

When policies are made, they are supposed to be for the betterment of the citizens. Poor implementation therefore would continue to be a bane of growth trajectory in Nigeria. A policy or plan is of little use to the citizens if it is not faithfully implemented. That is the reason why a good prospect for growth and development would be hinged on several factors such as:

- (a) Political will to see projects and plans through.
- (b) Integration of the private sector into the mainstream policy objectives of government
- (c) An effective and efficient bureaucracy would serve as the engine house for translating government policies and programmes into concrete action. This is because, a result oriented bureaucracy creates an enabling environment for all participants and ensure that there is continuity.
- (d) Data availability is very important for the formulation, monitoring, implementation and evaluation of plans and programmes.
- (e) Effective monitoring and evaluations of government activities would bring about compliance and accountability. It will also help to avoid waste of public resources.
- (f) There must be policy continuity to create stability in governance. This will ensure confidence of foreign and domestic investors on the economic system.
- (g) Emphasis on debt servicing at the expense of productive sector should be avoided at all cost.
- (h) The non-oil sector should be critically explored as an alternative source of revenue to de-emphasize Nigeria's posture of a monocultural economy.
- (i) Security is key for overall development. The extensive and porous borders had to be effectively managed. All acts of brigandage, banditry and internal insurrections has to be fought headlong in other to guarantee peace and security.
- (j) Local government should be well funded and all their stationary roles and responsibilities, monitored to ensure that there is value for money.
- (k) Interest should be paid to the Education sector, the Health sector, Science and Technology in other to boost self-reliance and growth from within.
- (l) Strikes should become a thing of the past in all the sectors of the economy. Workers should be paid living wages and provided with productive incentives.
- (m) Policy making should become more of bottom up approach in other to respond to the yearnings of the people.



- (n) Importantly, Public Institutions and Agencies should be seen to be working and effectively too. This would restore public trust, ensure accountability and guarantee good governance.
- (o) States and local Government should de-emphasize on their reliance on the stationary allocation from the federation account which constitutes well over 80 percent of their funds.
- (p) The revenue sharing/allocation formulae should be restructured to favour the principles of derivation more, which in turn would promote the initiative and ingenuity of the states and local governance.

### Conclusion and Recommendations

Public sector financial discipline will only be achieved where leaders are dedicated to the course of the society and poised to eliminate or drastically reduce official corruption. The journey for the overall socio-economic and political development of the Nigerian nation has been tortuous and topsy turvy.

On the attainment of independence in 1960, there were very high hopes of its potential for sustainable growth and development. According to Bello Imam (2010); “the hopes were based on its substantial natural resources endowment, the existence of a competent civil service, favourable growth rate and above all, one of Africa’s most educated elite”. But most unfortunately, this immense human, material and fiscal resources as well as potentials, failed to transmute into viable socio-economic growth and development. Instead, the huge and large petroleum oil driven national revenue and foreign exchange earnings were grossly mismanaged to the extent that Nigeria almost became a failed state (Bello Imam, 2010). These very pathetic reasons responsible for the failure manifested in unsustainable fiscal deficit profile, pervasive corruption in all sectors of the national economy, gross disregard for the rule of law and process, a systematic culture of impunity occasioned by the militarization of the political space and abject poverty of a majority of the citizenry precipitated by a persistent culture of Micro-economic Management among others.

There is no arguing the fact that man is at the centre of development. Therefore development should aim at alleviating poverty and generally improving the quality of life of the citizens. This is why developed nations embark on fiscal discipline in the management of their public assets. In like manner, the private sector which is largely dependent on government patronage for survival needs a large degree of government intervention, necessary for its harmonize authorities of both the public and private

sector in the context of a mixed economy, which Nigeria operates. It is suggested that government should divest from production and manufacturing. But it should provide the enabling environment for private sector participation in the economy. According to the World Bank (1989):

- (i). Human capital development, especially the provision of basic health, education, nutrition and technical skills.
- (ii). Restructuring public and private institutions to create a context in which skilled workers can function effectively and
- (iii). Political leadership

Creating an enabling environment requires the establishment of a productable and honest administration of the regulatory frameworks, (Obadan; 1997, Okolie; 2003)

In addition to capacity building as discussed above, Obadan (1997), recommended for,

- (a) Initiate policies which will stabilize the economy and provide a Macro-economic framework conducive for sustainable growth.
- (b). Make rules and regulations which will make the market work and intervene when there are market failures and
- (c). Put in place an institutional machinery to mobilize resources for development.

Considering the fact that the fiscal responsibility bill has been designed to facilitate prudent resource Management, Accountability and Transparency, Medium Term Framework, Revenue and expenditure Management, Debt Management and Macro-economic stability etc. can it be said that Nigeria has been able to achieve all these objectives, even with the establishment of the fiscal responsibility commission?

As good as the fiscal responsibility initiatives are, there is apparently a worsening effect on the standard of living of most Nigerians. This is attributable to the inability of the government to judiciously implement some of the policy measures arising from poor leadership and failure of governance. It is regrettable to state that the incidence of corrupt use of office, lack of integration, unlawful appropriation of public funds for private ends and weak institution are far too high in Nigeria. The quality to governance, especially by global standards, human rights, social justice, public accountability and democracy and necessary compliance for sustainable development. Today, instead of economic growth, Nigeria is living with economic decline and in the place of institutional vibrancy, she is weighted down by institutional decay (Mukoro; 2023).

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## Reimagining the Future of Work: Innovation and Technology Pathways for Sustainable Academic Workplaces in Nigeria

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### Abstract

**Purpose:** This conceptual and policy-oriented paper proposes an integrated pathway for Nigerian higher-education institutions to build sustainable workplaces—places that are digitally enabled, resource-efficient, safe, inclusive, and resilient—by harnessing innovation and technology. **Design/Approach:** Drawing on a structured scoping review (2020–2025) of peer-reviewed literature, national policy documents, and international frameworks, the paper synthesizes evidence on digital transformation, green campus initiatives, occupational health and safety management systems, and artificial intelligence (AI) adoption in universities. It develops the Sustainable Academic Workplace Innovation Framework (SAWIF), which aligns People, Process, Place, and Platform with Nigeria’s Sustainable Development Goals (SDG) commitments and sectoral interventions (e.g., TETFund, NgREN). **Findings:** Nigerian universities are advancing e-learning and digital administration under NUC’s e-learning guidelines; targeted funding and multi-stakeholder projects are catalyzing ICT infrastructure and renewable energy adoption. However, gaps persist in reliable connectivity, digital skills, change management, formal OHSMS adoption, and standardized sustainability measurement. **Practical Implications:** SAWIF provides an implementation roadmap (2025–2030) featuring governance reforms, green procurement, WELL/ISO-aligned workplace health programs, IoT-enabled smart-campus operations, campus decarbonization using the GHG Protocol, and AI-augmented academic workflows, with clear KPIs and financing options. **Originality/Value:** The paper consolidates dispersed Nigerian and global evidence into a practicable framework tailored to the academic workplace, offering administrators and policymakers an actionable blueprint for resilient, low-carbon, and human-centered universities.

**Keywords:** Sustainable workplaces; Higher education; Digital transformation; Green campus; AI; OHSMS; Nigeria; SDGs; STARS; GHG Protocol.

### Introduction

Across emerging economies, universities are reimagining the workplace as a strategic lever for educational quality, research productivity, staff well-being, and climate action. In Nigeria, recurring energy and connectivity constraints, evolving pedagogy, and post-pandemic work patterns create an imperative to invest in sustainable workplaces—environments that integrate health, safety, digital capability, and environmental performance. This paper addresses the question: How can Nigerian universities harness innovation and technology to build sustainable workplaces that advance academic excellence and the Sustainable Development Goals (SDGs)? We synthesize recent evidence and policy signals and propose a sector-ready framework, the Sustainable Academic Workplace Innovation Framework (SAWIF),

accompanied by a stepwise implementation roadmap and measurable indicators.

### Theoretical and Conceptual Foundations

The paper integrates four lenses. First, socio-technical systems theory underscores the joint optimization of people and technologies in complex organizations. Second, the Technology-Organization-Environment (TOE) framework helps assess contextual readiness for digital and green technologies in universities. Third, the Ability-Motivation-Opportunity (AMO) perspective informs human-resource interventions that enable pro-environmental and innovative behaviors. Fourth, the SDG alignment lens (especially SDG 4, 7, 8, 9, 11, 12, and 13) anchors campus transformation in global sustainability commitments. These foundations guide the synthesis of literature and the design of SAWIF.

## Literature Review

### Digital Transformation in Nigerian Higher Education

Nigerian universities have accelerated e-learning and digital administration following the National Universities Commission's (NUC) revised e-learning guidelines (2023), with emphasis on curriculum design, quality assurance, and capacity building (NUC, 2023). Multi-stakeholder initiatives—such as UNESCO's support for AI and digital governance capacity and the Blueprint-ICT-DeV project supported by AFD—signal a systems-level push toward sector-wide digital readiness (UNESCO, 2025; NgREN/NUC, 2025). Empirical studies in Nigeria and across Africa highlight persistent barriers: inadequate broadband and power supply, cybersecurity vulnerabilities, and uneven digital literacy among faculty and students; yet they also document gains in access, engagement, and administrative efficiency when investments and change management are aligned (Falola et al., 2022; Ezeugwu, 2025; Kayanja, 2025).

### Sustainable Workplaces, Health and Well-Being

Healthy, safe, and inclusive workplaces are core to institutional performance. The WELL Building Standard links indoor environmental quality and workplace design with occupant well-being and satisfaction, with recent evidence showing substantial improvements in perceived health and productivity in WELL-certified buildings (Ildiri et al., 2022; IWBI, 2022). Occupational Health and Safety Management Systems (e.g., ISO 45001) offer process-based controls that can be adapted for university settings; reviews note gaps but growing adoption across higher education, especially where leadership and governance structures are supportive (Mtikitiki et al., 2025). Nigerian studies indicate the need to formalize OHS policies in universities and leverage digital tools for training and incident reporting (Ironi et al., 2023; Akinyooye, 2021).

### Green Campus Infrastructure and Operations

Green campus initiatives—energy efficiency, distributed renewables, sustainable mobility, water stewardship, and circular waste systems—are increasingly discussed in Nigerian HEIs but remain unevenly implemented. Evidence points to emerging solar deployments on campuses and policy momentum via TETFund interventions for infrastructure and research capacity (UNN, 2025; TETFund, 2025; ESI-Africa, 2025). Studies report barriers to green construction and procurement (cost, policy coherence, supplier readiness), yet also highlight solutions including lifecycle costing, skills development, and performance-based specifications (Ebekozi, 2025; Oyewobi et al., 2022). Circular-economy education and

student engagement are gaining traction in Nigerian universities (Okoya et al., 2025; LBS Sustainability Centre, 2023).

### AI, IoT, and the Smart-Campus Trajectory

AI-augmented academic administration (e.g., assessment analytics, student success prediction) and IoT-enabled facilities management (e.g., smart meters, occupancy-based controls) are central to the 'smart campus'. Nigerian and global reviews document opportunities for personalization and operational efficiency alongside risks around data privacy, bias, cybersecurity, and workforce readiness (Akinwalere, 2022; Temitope, 2025; Bali et al., 2024; Domínguez-Bolaño et al., 2024). Living-lab approaches accelerate responsible innovation by co-creating solutions with students and technical teams while generating local evidence for scale.

### Methodology

We conducted a scoping review of literature (January 2020–August 2025) across journal databases and authoritative organizational repositories, complemented by policy documents and sector news. Search strings combined terms such as “sustainable campus”, “digital transformation”, “OHSMS/ISO 45001”, “WELL standard”, “AI in higher education”, and “Nigeria universities”. Inclusion criteria prioritized peer-reviewed studies, national policy guidance, and high-quality institutional sources with relevance to the Nigerian context. Findings were thematically synthesized to inform the SAWIF framework and the implementation roadmap. Given the conceptual/policy focus, no human subjects were involved.

### Sustainable Academic Workplace Innovation Framework (SAWIF)

SAWIF operationalizes sustainable workplaces across four mutually reinforcing domains:

- **People:** Digital skills, health and safety culture, green HRM (recruitment, training, performance, incentives), inclusion and accessibility.
- **Process:** Governance, quality assurance, integrated management systems (ISO 45001/14001/27001), data governance and ethics for AI, green procurement.
- **Place:** Energy-efficient buildings, healthy interiors (IEQ), universal design, mobility, nature-based solutions, resilience to heat/flood events.
- **Platform:** Connectivity, cloud, cybersecurity, IoT/analytics, campus data platform, and tools for measurement and reporting (e.g., STARS, SIMAP/GHG Protocol).

- Alignment: SAWIF maps to NUC e-learning guidelines, TETFund intervention windows, and SDG targets. A governance ‘backbone’—a Senate-approved Sustainability & Digital Transformation Council—ensures cross-unit coordination and accountability.

#### Illustrative Nigerian Caselets

- Renewable Energy on Campus: Reports of expanding solar PV capacity at federal universities (e.g., Bayero University Kano case documentation; sector news on additional campuses) suggest a viable path to clean and reliable power for critical facilities and ICT backbones.
- Circular Economy Hubs: UNILAG’s Circular Economy Powered Renewable Energy Centre (CEPREC) exemplifies multi-partner innovation and skills development.
- Sector Platforms: NgREN and the Blueprint-ICT-DeV programme indicate a coordinated approach to connectivity and digital infrastructure sharing across HEIs.

#### Implementation Roadmap (2025–2030)

Table 1 outlines a phased roadmap adaptable to institutional size and baseline maturity. Milestones integrate finance, capability building, and measurement.

Measurement, Reporting, and Key Performance Indicators (KPIs)

KPIs should be aligned to recognized frameworks (e.g., STARS v3, GHG Protocol). Table 2 proposes a compact KPI set spanning People, Process, Place, and Platform.

#### Risk, Ethics, and Governance Considerations

Sustainable digital campuses must address data privacy, cybersecurity, AI transparency and bias, vendor lock-in, and occupational risks from new technologies. Governance should codify risk appetite, incident response, accessibility requirements, and ethical review for AI in teaching and assessment. Procurement must guard against greenwashing by requiring verifiable disclosures (e.g., EPDs, life-cycle assessments) and local capacity building.

#### Policy and Managerial Implications

University leaders can leverage existing national levers—TETFund programmes, NUC guidelines, NgREN—while piloting living-lab projects that integrate students into solution design. Facilities and ICT units should jointly plan phased retrofits and digital upgrades using total cost of ownership and lifecycle-carbon metrics. HR should embed green HRM practices, and academic units should align curricula with SDGs and circular-economy competencies. Transparent reporting (STARS, GHG inventory) can attract partnerships and unlock green finance.

#### Comparative Summary of Sustainable Academic Workplace Playbooks

| Playbook                              | Core Focus                                                       | Key Interventions                                                                                                                                                                       | Expected Outcomes                                                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. Digital-First University           | Digital transformation of teaching, research, and administration | <ul style="list-style-type: none"> <li>• ICT infrastructure upgrades (LMS, NgREN, cloud)</li> <li>• AI/IoT for smart learning</li> <li>• Digital pedagogy training for staff</li> </ul> | <ul style="list-style-type: none"> <li>• Improved digital literacy</li> <li>• Increased access &amp; flexibility</li> <li>• Efficient administration</li> </ul>          |
| B. Safe & Healthy Academic Workplaces | Occupational health, safety, and well-being                      | <ul style="list-style-type: none"> <li>• ISO 45001 integration</li> <li>• WELL certification standards</li> <li>• Staff well-being programs (mental health, ergonomics)</li> </ul>      | <ul style="list-style-type: none"> <li>• Safer campuses</li> <li>• Higher staff motivation &amp; retention</li> <li>• Better work-life balance</li> </ul>                |
| C. Net-Zero Campuses                  | Climate action and sustainability                                | <ul style="list-style-type: none"> <li>• Renewable energy (solar, storage)</li> <li>• Energy efficiency retrofits</li> <li>• Waste reduction and circular economy</li> </ul>            | <ul style="list-style-type: none"> <li>• Reduced carbon footprint</li> <li>• Cost savings on energy</li> <li>• Positive climate leadership</li> </ul>                    |
| D. Smart Sustainable Campus           | Holistic smart-campus integration                                | <ul style="list-style-type: none"> <li>• IoT-enabled facilities management</li> <li>• Data-driven resource use</li> <li>• Living labs for students &amp; staff</li> </ul>               | <ul style="list-style-type: none"> <li>• Real-time efficiency monitoring</li> <li>• Enhanced research &amp; innovation</li> <li>• Scalable smart campus model</li> </ul> |

**Table 1. Comparative Summary of Sustainable Academic Workplace Playbooks**

### Limitations and Future Research

As a conceptual and policy synthesis, the paper does not present primary empirical data. Future work should include multi-campus longitudinal studies of WELL/ISO 45001 implementations, randomized pilots of AI-enabled administrative processes, and quasi-experimental evaluations of PV-plus-efficiency packages on academic productivity and well-being outcomes.

### Conclusion

Sustainable workplaces are central to Nigeria's higher-education mission. By aligning people, processes, places, and platforms through SAWIF and executing a disciplined roadmap, universities can convert the current wave of digital and green investments into lasting gains in well-being, resilience, academic performance, and climate action. The window to standardize measurement and governance is now; institutions that act decisively will set the pace for a more equitable and sustainable academic future.

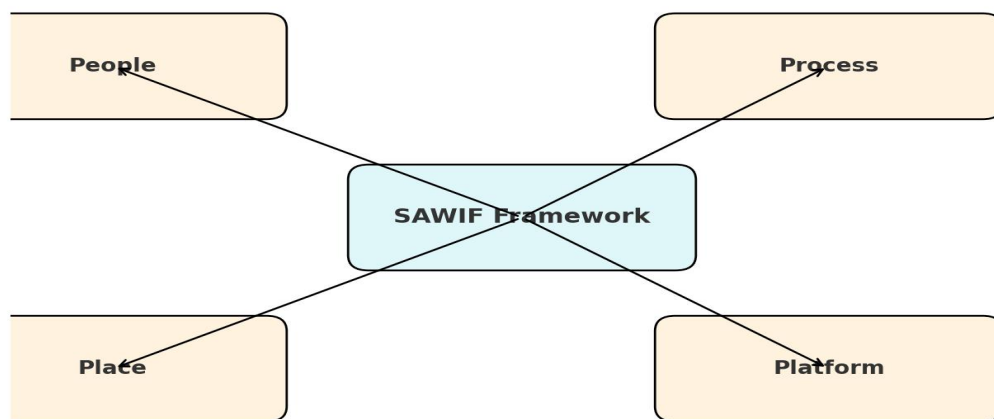


Figure 2. Sustainable Academic Workplace Innovation Framework (SAWIF).  
Developed by Zincware (2025) for the study (original contribution)

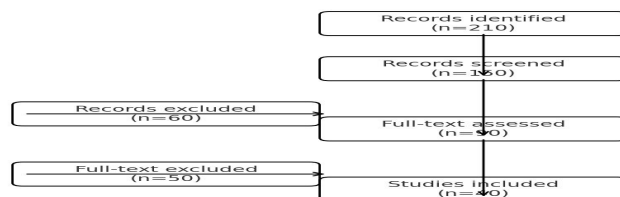


Figure 1. PRISMA 2020 Flow Diagram.  
Adapted from Page et al (2021), BMJ, 372, n71

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## APPENDICS

### Extended Evidence Synthesis

**Digital Inclusion and Equity.** Studies of rural and peri-urban campuses underline the digital divide in bandwidth, device access, and assistive technologies for students with disabilities. Targeted subsidies, device-to-learn schemes, and universal design for learning (UDL) reduce inequities and improve learning outcomes when combined with faculty development



and micro-credentialing. Regional networks (e.g., NgREN) can broker bulk connectivity and security services for member institutions while enabling content peering and research data exchange.

**Data Governance and Cybersecurity.** The expansion of cloud-hosted student information systems and learning analytics requires clear rules for data minimization, consent, retention, and third-party processing. Sector guidance emphasizes risk-based controls, multi-factor authentication, role-based access, and incident response exercises; smart-campus IoT increases the attack surface, making network segmentation and continuous monitoring critical. Universities that integrate cybersecurity into procurement and project gateways realize lower lifecycle risk.

**Health, Safety, and Well-Being.** Empirical literatures connect indoor environmental quality—thermal comfort, acoustics, ventilation, lighting—and biophilic design with cognitive performance and satisfaction. In tropical climates, passive design strategies (shading, natural ventilation, high-albedo materials) significantly mitigate heat stress. Embedding ISO 45001 processes (hazard identification, worker participation, operational controls, audits) into daily academic operations improves reporting culture and incident prevention.

**Green Procurement and Lifecycle Costing.** Nigerian studies report cost, policy incoherence, and supplier capability as barriers to sustainable procurement. Lifecycle costing, performance-based specifications, and supplier development programs help close capability gaps. Coupling procurement with monitoring platforms (e.g., STARS) builds institutional memory and market signals for greener products.

**Renewable Energy and Efficiency.** Case evidence from Nigerian urban centers shows the technical and economic viability of solar PV for teaching hospitals, data centers, and laboratories, especially when paired with load segmentation, LED retrofits, and smart controls. Financing models—PPAs, ESCOs, green bonds—reduce upfront cost and support scale. Universities that treat energy data as a strategic asset develop analytics that inform scheduling, maintenance, and research.

**AI in Academic Workflows.** AI-enabled assessment and feedback shorten turnaround times and surface at-risk learners, but require exam security, transparency, and academic-integrity policies. Faculty enablement (prompt engineering, rubric design, detection of hallucinations) and accessible alternatives for students are prerequisites to equitable adoption.

**Human-Centered Transformation.** AMO-aligned green HRM (recruitment for sustainability skills, continuous learning, recognition for innovation) strengthens staff engagement and pro-environmental behavior. Hybrid work policies for administrative units—anchored in service levels and occupational health—can cut commuting emissions while improving inclusion for caregivers and people with disabilities.

### **Institutional Playbooks**

**Playbook A: Digital-First Learning and Academic Services**

**Objectives:** Reliable, inclusive digital learning and student services. Key steps: (1) Align curricula to NUC e-learning guidelines; (2) Consolidate LMS with SSO and identity management; (3) Establish an academic integrity and AI policy; (4) Build a tiered digital support desk; (5) Track engagement and equity metrics; (6) Integrate micro-credentials for digital skills.

**Playbook B: Safe & Healthy Workplaces (ISO 45001 + WELL-aligned)**

**Objectives:** Institutionalize OHSMS and healthy space design. Key steps: (1) OHS policy and leadership commitment; (2) Hazard/risk assessment for labs, workshops, and offices; (3) Training and worker participation mechanisms; (4) Incident reporting and audits; (5) WELL-aligned IEQ improvements (ventilation, lighting, acoustics, water); (6) Annual public reporting.

**Playbook C: Net-Zero-Ready Campus Operations**

**Objectives:** Reduce Scope 1 and 2 emissions and embed circularity. Key steps: (1) Establish GHG inventory baselines (GHG Protocol); (2) Implement demand-side efficiency; (3) Add PV+storage for critical loads; (4) Fleet transition and green mobility; (5) Waste diversion and circular procurement; (6) STARS reporting and continuous commissioning.

**Playbook D: Smart-Campus & Data Platform**

**Objectives:** Use IoT and analytics for safety, comfort, and efficiency. Key steps: (1) Sensor standards and cybersecurity by design; (2) BMS integration; (3) Open APIs and data lake; (4) Student co-creation via living labs; (5) Dashboards for leaders; (6) Data sharing for research and teaching with privacy controls.

### **Financing and Partnership Models**

Internal sources include capital budgets, revolving green funds seeded by utility savings, and research overheads earmarked for sustainability. External sources include TETFund intervention windows, development-partner programs (e.g., AFD's Blueprint-ICT-DeV), green bonds, and private PPAs/ESCO contracts. Partnership strategies span

utilities, ICT providers, EPC firms, and civic groups; memoranda should include data-sharing and training commitments to build institutional capacity.

### From Metrics to Management

KPIs should inform action cycles. Monthly energy dashboards should trigger low-cost operational fixes; quarterly well-being surveys should seed supervisor coaching; annual STARS self-assessments should prioritize capital projects; and GHG inventories should guide procurement of renewable electricity where feasible. Publishing an annual Sustainability & Digital Transformation Report builds accountability and reputation.

### Annotated Nigerian Evidence Review (2020–2025)

- NUC (2023) e-Learning Guidelines: Establishes quality and governance requirements for digital delivery; catalyzed institutional policy updates and capacity-building programs.
- TETFund (2025) funding presentation: Documents scale of research and infrastructure interventions, indicating opportunities to align sustainability projects with intervention windows.
- UNIZIK (2025) Blueprint-ICT-DeV selection: Illustrates AFD-supported digital transformation momentum and the role of NgREN as a sector platform.
- ESI-Africa (2025) report on solar expansion: Signals policy and procurement readiness for renewable energy at HEIs.
- Falola et al. (2022) on e-learning platforms: Empirical evidence that digital platforms can improve faculty engagement when accompanied by training and support.
- Ebekozen (2025) on green construction barriers: Highlights procurement, cost, and capability constraints that must be addressed in campus projects.
- Ironi et al. (2023) on OHS policy implementation: Reveals implementation gaps in public universities and the importance of leadership and worker participation.
- Ildiri et al. (2022) & IWBI (2022): Demonstrate health and productivity benefits of WELL-aligned design—relevant to academic offices and learning spaces.

### Appendix A: SAWIF Self-Assessment Checklist

- **People:** % of staff with verified digital and OHS competencies; presence of green HRM policies; accessibility compliance across digital and physical assets.

- **Process:** Existence of integrated sustainability, data protection, and AI policies; governance council meeting cadence; percentage of procurement with sustainability criteria.
- **Place:** Energy audits completed; IEQ baselines; disaster/heat resilience measures; nature-based solutions on campus; mobility plan in place.
- **Platform:** Network reliability; LMS uptime; IoT coverage; cybersecurity maturity; data catalog and sharing agreements.

### Appendix B: Sample Policy Clauses (Extracts)

**AI-Assisted Assessment:** AI tools may complement assessment design and feedback; faculty remain accountable for academic standards. Data used for learning analytics must be minimized, anonymized where feasible, and processed under documented legal bases with opt-out provisions where appropriate.

**Green Procurement:** For purchases exceeding [institutional threshold], tenders shall include lifecycle-carbon criteria and require suppliers to disclose environmental product declarations or equivalent third-party verified data. Contracts shall provide for training and data-sharing to build institutional capacity.

**OHSMS Participation:** Departments shall maintain safety committees with worker representatives; near-miss reporting is encouraged and will not be punitive. Annual audits and management reviews are mandatory.

### Appendix C: Risk Register Template (Excerpt)

**Fields:** Risk ID; Description; Category (Health & Safety/Cyber/Financial/Reputation/Compliance); Likelihood; Impact; Inherent Risk Rating; Control Measures; Residual Risk; Owner; Review Date. Example: R-AI-01—Inappropriate reliance on generative AI for grading; Category: Academic Integrity; Likelihood: Medium; Impact: High; Controls: Policy, training, spot-checks, disclosure; Owner: Dean (Academic).

### Research Questions and Contributions

This paper addresses the following research questions (RQs):

**RQ1:** What innovation strategies and enabling technologies most effectively drive sustainable workplaces in Nigerian higher-education institutions?

**RQ2:** How do governance, human capability (AMO), and infrastructure (TOE) interact to condition successful implementation?

**RQ3:** Which metrics and reporting frameworks (e.g., STARS, GHG Protocol) best capture progress in Nigeria's academic context?

**Contributions:** (1) We synthesize recent African and global evidence into a sector-ready model; (2) We propose the Sustainable Academic Workplace

Innovation Framework (SAWIF) tailored to Nigerian HEIs; (3) We provide a 2025–2030 implementation roadmap, KPIs, and financing pathways for scalable adoption.

### **Comparative Perspective: Nigeria, Kenya, and South Africa**

Kenya's University of Nairobi has piloted rooftop solar at the Chiromo Campus, advancing energy resilience and cost control; South Africa's Stellenbosch University has installed a ~393 kW rooftop PV system at the Neelsie Student Centre as part of a wider decarbonization plan. These cases illustrate the feasibility of campus PV deployments and the value of transparent reporting and stakeholder engagement in scaling smart-energy solutions across African HEIs.

### **Stakeholder Roles and Responsibilities**

**Federal and State Government:** Align TETFund mechanisms, implement the National Digital Economy Policy and Strategy (NDEPS), and operationalize the Nigeria Data Protection Act (2023) for campus data governance.

**Regulators (NUC, NDPC, NITDA):** Update learning, cybersecurity, and data-protection guidance; promote interoperability and sector platforms (NgREN).

**University Leadership:** Establish Sustainability & Digital Transformation Council; adopt SAWIF; integrate ISO 45001 and WELL-aligned workplace health programs.

**Facilities & ICT:** Deploy BMS/IoT, PV+storage, and resilient connectivity; implement cybersecurity-by-design; report against STARS and GHG Protocol.

**Academic Units & HR:** Embed green HRM; offer SDG-aligned curricula and living-lab projects; enable faculty with AI and digital-pedagogy skills.

**Students & Unions:** Co-create solutions via campus living labs; champion accessibility, inclusion, and safety metrics.

### **Methodological Rigor: PRISMA-aligned Scoping Review**

Source identification, screening, eligibility, and inclusion followed PRISMA 2020 guidance adapted for scoping reviews. A PRISMA flow diagram (Figure 1) summarizes records identified, screened, excluded with reasons, and included in synthesis.

*Figure 1. PRISMA 2020 Flow Diagram – illustrating the identification, screening, eligibility, and inclusion of sources.*

*Figure 2. Sustainable Academic Workplace Innovation Framework (SAWIF) – linking People, Process, Place, and Platform.*

*Figure 3. Integration of TOE, AMO, and SDGs into SAWIF Framework*

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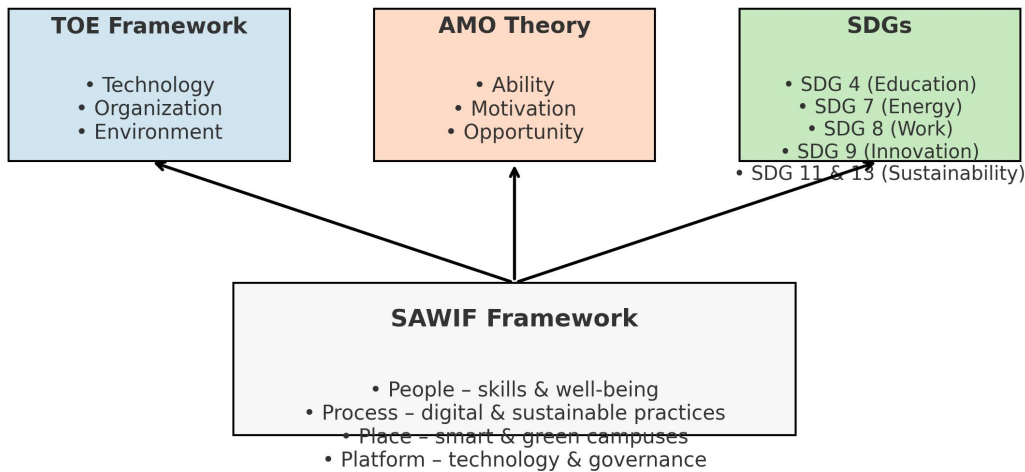
University of Nairobi. (2023, April 4). UoN launches solar rooftop project at Chiromo Campus.

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## Integration of TOE, AMO, and SDGs into SAWIF Framework



### Key Theoretical Foundations

#### 1. TOE Framework (Technology–Organization–Environment)

- **Origin:** Developed by Tornatzky & Fleischer (1990).
- **Essence:** Explains how organizations adopt and implement technological innovations.
- **Dimensions:**
  - **Technology** – Availability, relevance, and complexity of technologies (e.g., AI, IoT, LMS platforms in Nigerian universities).
  - **Organization** – Internal readiness (resources, leadership support, staff capacity, digital skills).
  - **Environment** – External pressures and supports (government policies, regulatory requirements, competition, funding bodies like TETFund, UNESCO).
- **Relevance:** In Nigeria’s academic space, the TOE framework explains why some universities adopt digital platforms, energy innovations, or WELL/ISO workplace models faster than others.

#### 2. AMO Theory (Ability–Motivation–Opportunity Model)

- **Origin:** Appelbaum et al. (2000) in strategic HRM.
- **Essence:** Organizational performance is a function of employees’ **Abilities, Motivation, and Opportunities**.

#### • Dimensions:

- **Ability** – Staff knowledge, training, and skills to use innovative technologies (e.g., ICT literacy, digital pedagogy).
- **Motivation** – Incentives, recognition, and organizational culture that encourage innovation and sustainability practices.
- **Opportunity** – Structures and resources that allow staff to contribute (e.g., ICT infrastructure, flexible workspaces, funding for research).
- **Relevance:** In Nigerian universities, AMO highlights that sustainable workplaces won’t succeed if staff lack digital ability, motivation is low, or structural opportunities are absent.

#### 3. Sustainable Development Goals (SDGs)

- **Origin:** United Nations adopted 2015 (Agenda 2030).
- **Essence:** 17 global goals to end poverty, protect the planet, and ensure prosperity.
- **Relevant Goals to Academic Workplaces:**
  - **SDG 4 – Quality Education** (digital inclusion, lifelong learning).
  - **SDG 7 – Affordable & Clean Energy** (solar campuses, energy transition).
  - **SDG 8 – Decent Work & Economic Growth** (fair working conditions, innovation-driven jobs).

- **SDG 9 – Industry, Innovation, and Infrastructure** (digital infrastructure, research innovation).
- **SDG 11 – Sustainable Cities & Communities** (green campuses, healthy learning environments).
- **SDG 13 – Climate Action** (carbon-neutral universities, WELL & ISO standards).
- **Relevance:** SDGs provide the **global benchmark** for evaluating how Nigerian academic institutions can innovate and transform sustainably.

#### **Integration in the Study (SAWIF)**

- **TOE** explains **adoption dynamics** of innovation (what factors push or hold back).
- **AMO** explains **people-focused capacity** (can staff actually drive the change?).
- **SDGs** give normative **direction** (why these innovations matter globally, not just locally).

Together, they strengthen the **Sustainable Academic Workplace Innovation Framework (SAWIF)** as a robust conceptual model that links **technology adoption** → **workforce capability** → **sustainable impact**.

Mishra, S. (2023). Exploring the impact of AI-based cyber security financial sector management. *Applied Sciences*, 13(10), 5875.



## Mentorship and Performance of Organization

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### Abstract

*The purpose of the study was to examine mentorship and performance of organization. A study of selected supermarket in Cross River State. The specific objectives were to: examine the influence of guidance and counselling on performance of organization; investigate the extent to which career support influence performance of organization; and to ascertain the extent of coaching on performance of organization. The study employed primary sources of data. Multiple regression was adopted in the study. Based on the analysis of the results, the findings revealed thus; guidance and counselling, career support, and coaching positively affected performance. The study recommended thus: Guidance and counselling is an enlightened process of facilitating development; therefore, counsellors should formulate new designs that bring positive changes in the behavior of learners. Career support focused on direction, aspirations and career options, mentors should focus more on skill development. Finally, there should be a collaborative partnership between the coach and the learner.*

**Keywords:** *Mentorship, guidance and counselling, career support, coaching, performance of organization*

### Introduction

In a contemporary knowledge economy, where the business environment is characterized by turbulence and complexity, knowledge is the main source of both innovation and sustainable competitive advantage. It is, therefore, necessary to appreciate the link between mentoring and knowledge identification, creation, transfer and application of knowledge to enhance organizational performance through the acquisition of relevant skills, knowledge and decision making strategies. Mentoring has immense benefits to an organization besides being the key to improving organizational capability (Olsen, Johannessen, & Olaisen, 2019). In a traditional sense, mentoring is a practice that brings together the inexperienced (mentee) and experienced (mentor) so that the mentee will gain knowledge, self-confidence, and skills from the mentor (Gershenfeld, 2015). Mentoring is a system of semi-structured guidance where one person or a group of people share their knowledge, skills and experience to assist others to progress in their own lives and careers (Allen, 2016). Over time, the definition of mentoring has evolved, with some theorists suggesting that mentoring must be a voluntary relationship of equality, openness, and trust between the mentor and mentee (Coppola & Ledlow, 2018). A mentor is a person who commands a certain degree of respect, either by holding a higher-level position or because of age, expertise or experience doing the job (Noe, Greenberger & Wang, 2017). It also refers to someone who takes a special interest in a person, and in teaching that person skills and attitudes to help

that person succeed. (Mathewman, Clutterbuck & Ragins, 2017) establish that mentoring has a large number of outcomes for the mentor, the protégé and the organization.

Protégé outcomes include career advancement, success and satisfaction whilst mentors can benefit from increased promotion rates, rejuvenation and the acquisition of useful information. Furthermore, organizational outcomes include increased employee motivation, better job performance and increased competitive advantage. Mentoring has the net effect of enhancing the competence of the mentee; providing psychological support, motivation and job satisfaction which enhances performance not only for the employee but the organization as a whole which may translate into a competitive advantage position to the organization (Clutterbuck & Klasen, 2015). Organizational performance is the ability to acquire and process human financial and physical resources properly to achieve the goals of the organization (Madella, Bayle, & Tome, 2015). In fact, organizational performance is the outcome of an organization so that it is measured based on its goals and objectives (Lee, 2018). Currently, due to increased competition among organizations as well as focus on organizational transformation and change, each organization wants to achieve effective performance. The concept of performance improvement has developed over the past two decades as a strategic, integrated process, which incorporates goal setting, performance appraisal and development into a unified and coherent framework with the specific aim of aligning individual

performance goals with the organization's wider objectives (Dessler, 2015). Consequently, it is concerned with; how people work, how they are managed and developed to improve their performance, and ultimately how to maximize their contribution to the organization (Sola, 2018).

However, one of the prevalent challenges faced by education sector in this contemporary business setting is achieving performance through mentoring. Today, the emphasis of managers is on creating conditions for mentors' enhanced skills, the ability to help someone else and the opportunity to learn and grow themselves as the concept of mentoring contributes to greater use of the endless human capacity to increase the performance of organizations (Reeves, 2015). However, being a good mentor or mentoring is supported by an organization there could be some problems that organizations can face throughout the process. These include motivation, goal-setting, matching, feedback and more. This situation could hurt the employees, hinder the achievement of the corporate goal and could incapacitate the profitability of an organization. Hence, it becomes crucial to survey the effect of mentoring on performance of organizations in Cross River State, Nigeria.

Mentoring is imperative in the current workplace where the business climate is rapidly fluctuating, and this is brought about by an expected movement of top executives, changing technology, and global competition. Strategies for developing the capabilities of employees are an important part of any organization's overall strategy. However, many organizations carry out mentorship training programmes without evaluating or measuring their impact on employee performance, and therefore, are not able to determine the effectiveness of these programs, and whether they should be continued or not. Where there are no mentoring approaches from top management; counselling, role modelling, and assignment given to the employees may not be transferred to them. This is specifically seen in the gap between knowledge transfer and employee accomplishing goals; poor one-on-one mentoring which drastically affects the employee's knowledge in carrying out his or her duties as demanded. This position could lead to the complete closedown of manufacturing organizations in the form of declining profit, and overall poor organizational performance.

## Literature Review

### Theoretical framework

This study is anchored on Mentoring theory. This theory was propounded by Levinson in the 1970s. The ground theory was the earliest theory explaining mentoring. The base of ground theory is symbolic interactionism, which infers that an individual's behaviour is formed by social interactions; individuals are active in this process, and they make conscious decisions about how they will act in a

given social setting (i.e. clinical interactions between clinical instructor can create a condition for personal action and perception).

Relating to this study, the social learning theory can be applied. Mentoring theory claims that the mentor can help the protégé develop a sense of competence, confidence and self-esteem through the provision of psychological support (Allen & Day, 2022). This view is clarified by the principles of social learning theory. According to Bandura (2017), "Learning would be laborious, not to mention hazardous, if people had to rely solely on the effects of their actions to inform them on what to do. Fortunately, most human behaviour is learned observationally through modelling: from observing others, one forms an idea of how new behaviours are performed, and on later occasions, this coded information serves as a guide for action" Simply put, the process of mentoring is facilitated by the protégé observing and modelling the behaviour of the mentor in the relevant social context.

Merriam and Carafarella (2019) further express the relevance of the social learning theory about mentoring by stating "Social learning theories contribute to adult learning by highlighting the importance of social context and explicating the process of modelling and mentoring". In the same vein, the social cognitive theory supports the understanding of the mentoring theory. It states that knowledge can be enhanced by a close identification between the observer and the model as obtained between a protégé and a mentor. With adequate identification a connection that enables imitation is initiated. Bandura (2019) explains that behaviour, cognition and personal factors interact to produce the desired behaviour. The mentoring relationship is thus a reflection of how observation, imitation and identification of the mentor by the protégé are directed expertly to bring about a change in attitude, outlook and values in the protégé.

### Mentorship training

Typically, mentoring is a one-to-one correlation amid an experienced expert and a novice employee. It is based upon inspiration, positive explanations, honesty, reciprocated trust, amazement and enthusiasm to study. Amentor-mentee association concerns with the development of mentee professionally and personally. Consequently, the mentor does not appraise the mentee's existing job, conduct performance assessment and does not make available input to salary increases and elevations. The mentor acts as instructor, to aid acceleration of talents, and capacities, benefactor, to contribute in professional entry and improvement, host and lead, to familiarize the mentee with fundamental people and the organization culture in general. This may be one of the reasons why a mentor is not necessarily the mentee's direct supervisors as to generate an anodyne learning environment, where the mentee

feels legitimate to deliberate on matters acquiescently and in good conscience, devoid of harmful penalties in the discussions of the appraisal of performance.

Based on the roles of mentorship in training, other uses for developing mentoring competencies are that mentor and mentee proficiencies can be helpful to: elucidate the expertise set which individual mentor has to offer when contributing to a mentoring relationship, minimize the risk of error during the mentorship matching process, help identify career progression paths for the mentor and the mentee, help maintain standards within a formal mentorship program, involve the mentor and mentee in self-assessment and developing educational accomplishments. Training of mentor's competency can enhance the managerial roles and relationships between the mentors and the mentee. The boss / staff relationship centers on accomplishing the intents of the organisation. The mentor ascribes responsibilities, assesses the consequence, conducts performance evaluations, and suggests probable remuneration growths and promotions for the mentees. Because mentors/managers embrace noteworthy authority over employees' work existence, greatest number of staffs exhibit their strengths and rawhide their feebleness with in their workplace.

The roles of mentorship in training necessitate corporate harmony, which is built upon and fed into the existing framework and serve as a means of enhancing and reinforcing the existing competence development framework. It does not, on its own, involve the introduction of new corporate culture and values. Mentoring is a personal developmental relationship in which a more experienced or more knowledgeable person helps less experienced ones (Kram, 2019). Ojedokun (2018), while citing Galbraith (2017) views mentoring as a process by which persons of superior rank, and prestige instruct, counsel, guide, and facilitate the intellectual and/or career development of persons identified as protégées. Mentoring is a close, developmental relationship between two people in which a partner willingly avails him/herself of the full range of superior experience, knowledge, skills, or status of the other partner in all spheres of human endeavour (Okurame, 2017). Bilesanmi (2015) posits that mentoring is a set of tailor-made advice and incentives that a more experienced staff, in an innovative way can offer less experienced members in a plethora of ways and on a range of competencies. Mentoring is therefore a process in which mature and more experienced managers share their wisdom and experience with the younger employees on a one-on-one basis.

Mentoring is a method growing in use for establishing relationships between junior and senior employees, a method gaining popularity in facilitating both employee and management development in the organization (Russel, 2014). Arogundade (2016) define a mentor as the person who facilitates the personal and professional growth

of an individual by sharing the knowledge and insight that have been learned through the years. The mentoring relationship involves an exchange of wisdom, learning and development of skills and knowledge about the organization for the protégé's career growth (Akinbobola, 2018). Noe (2018), and Kram (2015) suggest two major dimensions of the mentoring relationship which are career support and psychosocial support functions. Career support functions include sponsorship, coaching, exposure to important contacts and resources, visibility, facilitating the protection of the mentee and assignment of challenging work to enhance the protégé's career (Noe, 2018; Kram, 2016). Psychosocial support functions embrace role modelling, friendship, counselling, acceptance, and confirmation of the mentee (Kram 1916). Knowledge transfer according to DeLong (2014), knowledge transfer is a key mechanism for an organization's success.

According to Nyamori and Serrainne (2015), workplace relationships such as mentoring should be fostered to promote the transfer of tacit knowledge. Wright (2018) stresses the importance of human resource development to an organization's success. Mentorship is such a factor in that it promotes guidance on career development and role modelling which both contribute greatly to employee development. While citing Nwakoby, and Ofoburku (2015) saw mentoring as helping the protégées work out personal problems and thereby enhancing the protégées' self-image. The existence of an interpersonal bond that fosters mutual trust enables the protégées to identify with their mentors to offer their support and counsel needed. The mentor applies active listening and rapport skills that enable both individuals to address their concerns. The mentor reinforces with the protégé that both of them are highly valued employees and contributors to their organization.

Mentorship is conceptualized as a process where the person (mentor) facilitates the professional growth of an individual (mentee) by providing career support, psychosocial support and knowledge transfer learned through the years. Family businesses, which bring together so starkly the economic and non-economic realities of organizational life (Ibrahim & Ellis, 2014), offer a particularly attractive site for understanding how the confluences of economic and noneconomic considerations affect strategic decisions. Akarak, and Ussahawanitchakit (2017), family business entrepreneurs are unique in that they seek to build businesses that are also family institutions. How founders of family businesses go about establishing and developing organizations to create enduring family legacies and economic value should be of interest to the field of entrepreneurship.

Perpetuating these legacies requires the venture to manage family succession, which besides necessitating the replacement of the founding



entrepreneur, often involves changes in strategy and/or structure. Such changes might re-invoke a liability of newness (Stinchome, 2017). The productivity of an employee is an effectiveness of his level of competence which can be improved upon by regular training. Stinchome (2017) defines competence as things which an individual staff in a given profession should be competent enough to do. In other words, competence is the combination of knowledge, skill and attitudes an individual requires to enable him carry out a defined job or task to the required standard (Stinchome, 2017). It is the obligation of a company to provide an enabling environment for employees to develop themselves; conversely, employees should be willing to, and take the accountability for their individual development.

Mentoring correlation concept has been in existence in management literature but it is not widely practiced in many organizations-both public and private in Nigeria. It is a training and learning programme which cost little or nothing in monetary value. It needs to be tried by organizations introducing mentoring programme, it should be treated as a project to which adequate resources (human, time and money) need to be committed. However, many organisations have discovered that it is problematic to employee and preserve erudite qualified and knowledgeable personnel due to competition from other organisations for the few available talented staff to fill strategic roles and critical positions in organisations. In the same way, companies are encrusting on intellect difficult since elderly managers are reticent and newer workforces are not willing to continue to be loyal to one firm and build long term career. Temporarily, organisations might be able to overcome these challenges by recruiting and training new employees. The concern is that skills gap might be present. The paramount techniques to decipher this age-related fissure could be by means of introduction of mentoring programme.

Mentoring would enable an experienced individual (the mentor) to assist another (the mentoree, mentee, or protégé) in developing skills and knowledge that will enhance the less-experienced persons' growth. In manner of speaking, organization may mean a corporate group or a group of people who work together. The Traditional Methods of Learning (Training) are becoming too expensive and time consuming. Employers are therefore devising more creative and effective means of achieving competence development at optimal cost. One key technique or tool embraced by many organizations, in addition to formal training and learning is mentoring (mentorship). Mentorship can, in practice, be summarized as a combination of emotional and practical support.

Mentorship denotes an individual evolving connection with an expert or more experienced individual aiding or guiding non-expert person. The

beneficiary of mentorship is referred to as a protégé (male), a protégée (female); an apprentice or, in recent years, a mentee. Mentoring is a process that always involves communication and is relationship based, but its precise definition is elusive. It can also be referred to as a practice of transmitting of knowledge, communal resources and societal sustenance perceived by the inheritance or as appropriate to profession, and competence development. Mentoring entails informal communication, usually face-to-face and during a sustained period of time, amid an individual perceived to have greater appropriate acquaintance, wisdom, or experience (the mentor) and a person who is perceived to have less experience (the protégé)".

Mentoring can be defined in terms of the expected results. It is a relationship between a junior/subordinate staff, often younger person (referred to as the Mentoree or the protégé) and a Senior/superior persons (the mentor) by virtue of which the mentor serves as a guide, counselor, confidant, adviser and role model to the protégé (mentoree). The mentor is also a source of knowledge, experience and inspiration to the Protégé (Mentoree). This definition emphasizes the association concerning the advisor and the mentoree. Stinchome (2017) describes the mentoring process and says: These young people will also have an older person in the organization to look after them in their early years to ensure that their careers get off to a good start. Out of these relationships it is hoped that the youths could absorb risks, accept a philosophical commitment to sharing and learn to relate to people in an initiative and empathetic ways. Mentor' has its origin from Greek mythology.

In the work place, a young employee sometimes finds an older, more experience person for whom he has a natural affinity or likeness and a relationship develops whereby the younger one is able to discuss matters that concern him with the older one and seek his adviser on various issues. This is what we may call "Godfatherism" in our local parlance and it is known as "informal mentoring". Informal relationships develop on their own between partners. Objectives of the affiliation are not specified and outcomes are not measured. Informal mentoring is a slackly structured Correlation amongst the counselor and mentee Mentoring lasts for a long time and the establishment gains circuitously. Conversely, formal mentoring denotes a designed process reinforced by the enterprise and addressed to target populations.

The management of the firm is accountable for calculatingly opt for and combining the mentee and the adviser with the aim of supporting to nurture and improve on definite competencies. In business prescribed mentoring is among talent management address to people mainly key workers, recently engaged graduates, high potentials and future leaders. There are many kinds of mentoring relationships

from school or community-based relationships to e-mentoring relationships. These mentoring relationships are diverging and can be predisposed based on type of mentoring affiliation. Different models have also been utilized to designate and scrutinize the sub-relationships that can ensue (Stinchome, 2017).

### **Guidance and Counseling**

Guidance and counseling is described as an enlightened process whereby people help people by facilitating growth and positive adjustment through self-understanding. Guidance and counselling is a process of helping an individual become fully aware of himself and the ways in which he is responding to the influences of his environment. It further assists individual to establish some personal meaning for this behaviour and to develop and classify a set of goals and values for future behavior. Callanan (2019), sees counselling as a process which occurs in a one-to-one relationship between an individual, troubled by problems with which he cannot cope with and a professional worker whose training and experiences have qualified him to help others give solution to personal needs. He further explains that an interactional relationship designed to facilitate the personal development of information leading to effective decision making and awareness of them are gotten through counselling.

Counselling is a learning process in which a counsellor helps an individual or individuals learn, understand themselves and their environment and be in a position to choose the right type of behaviours that will help them develop, grow, progress, ascend, mature and develop educationally, vocationally and socio personally. In other words, counselling is a transformative process of helping people to learn all that are to be learnt both in and outside the school. It is interchanged with mentoring. Except that the former takes place between lecturers and students, and the latter is between higher and lower lecturers. Callanan(2019) describes teaching as a set of activities that are designed to bring about changes in the behaviour of learners. He viewed teaching as explaining, demonstrating, guiding and counselling by the teacher in order to effect a change in the learner.

### **Career support**

In career support, formal mentoring relationship is spontaneously formed through people getting to know each other in the work environment. The difference in the status of the relationship between formal and informal mentoring relationship is that the communication in informal relationship is less formal as the name denotes. There are still hierarchies of status in this relationship in that the communication in formal relationship is less formal. The pairing in an informal relationship is often the

result of both the mentor and the protégé selection ship has been a recent development in literature.

Co-mentoring recognises the contribution that each person brings to the relationship and it is based on reciprocal benefit. In this relationship, the status of each person is equal and the communication pathway is one of reciprocity with each person mutually benefitting from the relationship. The relationship here should be a friendship of peers rather than a hierarchical relationship and that communication was dialogue rather than transmission of organisational information. Within this relationship, the individual's acts like partners, often complementing each other's knowledge and skills. The mentee can be a catalyst for the mentor's professional development, and for stimulating the mentor's personal self-reflection and providing an impetus for professional development.

### **Coaching**

Coaching is an integral parts of every manager's job. Studies have shown that managers who provide regular ongoing coaching and feedback to help employees develop skills and improve performance, and define and realize career goals have more successful and productive teams. Successful coaches listen well and provide plenty of opportunities for learning and growth. Coaching is one of the best ways to develop and retain valuable employees. What is coaching? Experts describe coaching as on-the-job training. But it is a very special kind of training, it is not what a co-worker might do when showing someone how the database is set up, it is different from managing too, it is less about directing the work and more about helping someone succeed. Coaching is a way of working with people that gives them more competent and more fulfilled so that they are more able to contribute to their organizations and find meaning in what they are doing. The underlying goal of every coaching interaction is to help the other person succeed.

Coaching is about building relationships and that takes time. For coaching to work well, it has to happen regularly. It is important to remember to spend as much time coaching strong employees as weaker ones. Sometimes managers wind up concentrating on the employee who needs remedial attention to the detriment of stronger performers who don't seem to need any help. That is a misallocation of managerial resources. Managers must meet often with all the people he/she manage individually and as a team in order to establish trusting relationships, there may be unplanned meetings to discuss a specific problem that has come up on a project or more formal sessions that is schedule ahead of time.

### **Organizational Performance**

Organizational performance refers to the degree to which the organization, with some informational, financial, and human resources, positions itself effectively in the business market. Organizational

performance involves analyzing a company's performance against its objectives and goals. In other words, organizational performance comprises real results or outputs compared with intended outputs (Gersick, Davis, McCollom, & Lensberg, 2017). Organizational performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives), some specialists in many fields are concerned with Organizational performance including strategic planners, operations, finance, legal and Organizational development. Organizational performance focuses on the evaluation, analysis and monitoring of activity in the context of the actual trends in the field.

This is how the organization behave in their different fields that is how well the performance of the organization was able to carry out their duties to meet the objective of the organization. It is the functioning of the organization and its outcome of operation to meet the objective and arm of the organization. Organizational performance cannot be over-emphasized, it also refers to how well an organization is doing in reaching its vision, mission and goals. Assessing organizational performance is a vital aspect of strategic management (Mundia & Bravo, 2015; Stinchome, 2017; Stinchome, 2017)

### **Empirical Review**

Oladimeji and Sowemimo (2015) examined the effect of mentoring on employee job performance in the Nigerian service sector. The study seeks to evaluate job performance by considering the effect of mentoring on employee performance in the Nigerian service sector. Research focused on finding out the level at which exposure, counselling, and role modelling affect employee performance in the Nigerian service sector. They noted that the business world is changing due to the occupational climate and a large proportion of business executives are bound to retire shortly leading to an anticipated great loss of knowledge and performance. However, the study found that job rotation and mentoring did not have a significant effect on the performance of police in Nigeria.

Mundia and Bravo (2015) investigated the role of mentoring programs on employee performance in organizations, the study highlights that the mentoring program is an important employee development method practised in successful organizations. The ability of mentors either informally or formally to implement the mentoring program activities may lead to higher employee performance, stratified random sampling was used to select the subjects included in the sample. The data was analyzed qualitatively and quantitatively by use of descriptive and inferential statistics to measure the formulated objectives to establish the relationship between the independent and dependent variables. The study established that mentorship programs play an important role in

employee performance and are enhanced through knowledge transfer, career development guidance and skills enhancement in mentoring.

Okediji, Nnedum, and Enwongo (2015) carried out a research study on mentoring and work-related outcome constructs. The study deals with mentoring relationship relevance in the field of organizational behaviour. It explores the theoretical functionalism of effective mentoring ideology in the academic literature the plausible influence of mentoring relationship were underscored in the conceptual exploration of mentoring with core work-related outcome variables. Academic efforts to synthesize mentoring as the organizational catalyst that selectively enhances the integration of the individual into the focal work organization and improve human capital theory advocates that investment in the development of employees' knowledge, skills and competencies through employee training and career support from a very senior member of the organization will aid the increase of employees' productivity by exposing them to useful knowledge, skills and attitude that lead to better performance.

Srivastava and Jomon (2015) carried out a study on mentoring and performance: Implications for business organizations and noted that mentoring as a concept and as a practice existed for a long in organizations and its relevance is gaining momentum as years pass by. An extensive review of the literature indicated that the benefits of mentoring practice especially those relating to individual performance were not empirically studied and reported. This paper explores how perceptions of two forms of mentoring support, the traditional and relational, influence protégés' role-based performance outcomes. The study tested for the variance in performance outcomes due to the addition of relational mentoring support. The findings shed light on the role that protégé personal learning plays as a mediator in transmitting the effect of the two forms of mentoring support to his/her role-based performance.

Mundia and Iravo (2016) did a study on the role of mentoring programs on employee performance in organizations. The study highlighted that the mentoring program is an important employee development method practised in successful organizations. The ability of mentors either informally or formally to implement the mentoring program activities may lead to higher employee performance, stratified random sampling was used to select the subjects included in the sample. The data was analyzed qualitatively and quantitatively by use of descriptive and inferential statistics to measure the formulated objectives to establish the relationship between the independent and dependent variables. The study established that mentorship programs play an important role in employee performance and are enhanced through knowledge transfer, career

development guidance and skills enhancement in mentoring.

### Methodology

The study employed survey design and primary sources of data. Questionnaire instrument was used to collect useful information on mentorship training and organizational performance. Ordinary least square of multiple regression statistical tool was used. The model of the study stated thus:

$$Y = f(x_1, x_2)$$

Where

Y = Dependent variable

X = Independent variables

The equation is stated in OLS model

$$PERF = b_0 + b_1GC + B_2CS + CG + U_t$$

Where  $b_0$  = Regression constant,  $b_1$ - $b_2$  = Regression parameters, PERF = Performance, GC = Guidance and counselling, CS = Career support, CG = Coaching,  $U_t$  = Statistic error term.

### Test of hypotheses

H<sub>01</sub>: There is no significant effect of Guidance and counselling on performance of organization

H<sub>02</sub>: There is no significant effect of Career support on performance of organization.

H<sub>03</sub>: There is no significant effect of coaching on performance of organization

**Table 1: Model Summary showing the effect of Guidance and counselling, career support, coaching on performance of organization**

**Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |               |
| 1     | .587 <sup>a</sup> | .344     | .322              | 1.41535                    | .344              | 15.231   | 5   | 145 | .000          | 1.862         |

a. Predictors: (Constant), GC, CS, CG

b. Dependent Variable: Performance

**Table 2: ANOVA<sup>a</sup> showing the effect Guidance and counselling, career support, coaching on performance of organization**

| Model |            | Sum of Squares | Df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 152.555        | 5   | 30.511      | 15.231 | .000 <sup>b</sup> |
|       | Residual   | 290.465        | 145 | 2.003       |        |                   |
|       | Total      | 443.020        | 150 |             |        |                   |

a. Dependent Variable: Performance

b. Predictors: (Constant), GC, CS, CG

**Table 3 Coefficients<sup>a</sup> showing the effect Guidance and counselling, career support, coaching on performance of organization**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. | Correlations |         |      | Collinearity Statistics |       |
|--------------|-----------------------------|------------|---------------------------|-------|------|--------------|---------|------|-------------------------|-------|
|              | B                           | Std. Error | Beta                      |       |      | Zero-order   | Partial | Part | Tolerance               | VIF   |
| 1 (Constant) | -4.297                      | 2.578      |                           | 1.667 | .098 |              |         |      |                         |       |
| GC           | .213                        | .055       | .265                      | 3.865 | .000 | .318         | .306    | .260 | .963                    | 1.038 |
| CS           | .127                        | .068       | .128                      | 1.868 | .064 | .214         | .153    | .126 | .968                    | 1.033 |
| CG           | .246                        | .068       | .253                      | 3.611 | .000 | .365         | .287    | .243 | .918                    | 1.090 |
| Performance  | .267                        | .074       | .245                      | 3.616 | .000 | .297         | .288    | .243 | .984                    | 1.016 |

a. Dependent Variable: Performance

**Collinearity Diagnostics<sup>a</sup>**

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions |     |     |     |             |
|-------|-----------|------------|-----------------|----------------------|-----|-----|-----|-------------|
|       |           |            |                 | (Constant)           | GC  | CS  | CG  | Performance |
| 1     | 1         | 5.970      | 1.000           | .00                  | .00 | .00 | .00 | .00         |

|   |      |        |      |     |     |     |     |
|---|------|--------|------|-----|-----|-----|-----|
| 2 | .010 | 24.139 | .00  | .84 | .00 | .03 | .05 |
| 3 | .007 | 28.927 | .00  | .03 | .42 | .44 | .02 |
| 4 | .002 | 60.335 | 1.00 | .08 | .15 | .06 | .20 |

a. Dependent Variable: Performance

**Residuals Statistics<sup>a</sup>**

|                      | Minimum  | Maximum | Mean    | Std. Deviation | N   |
|----------------------|----------|---------|---------|----------------|-----|
| Predicted Value      | 14.4950  | 19.7364 | 17.4305 | 1.00848        | 151 |
| Residual             | -3.99756 | 3.00689 | .00000  | 1.39156        | 151 |
| Std. Predicted Value | -2.911   | 2.287   | .000    | 1.000          | 151 |
| Std. Residual        | -2.824   | 2.124   | .000    | .983           | 151 |

a. Dependent Variable: Performance

The multiple regression analysis conducted above was to examine the effect of mentorship training on performance of organisation in Cross River State. The findings show that mentorship training such as Guidance and counselling, career support, coaching have positive significant effect on performance of organization in Cross River State and these remains evident as the overall model summary which produced an R of .527<sup>a</sup>, and an R-square = .344. This implies that the independent variables have influence on the dependent variable. The above influence is further explained as follows: Guidance and counselling, (B =.213, P = .098 < 0.05), career support, (B=.127, P = .000 < 0.05) and coaching (B =.246, P = .064 < 0.05), proved to have significant influence on performance. Based on the above, it is concluded that mentoring training has a positive significant effect on performance of organization in Cross River State.

### Discussion of findings

Based on the results, the findings are in line with the works of Kram (2019) who postulated that mentoring is a personal developmental relationship in which a more experienced or more knowledgeable person helps less experienced ones, while citing Galbraith (2017) views mentoring as a process by which persons of superior rank, and prestige instruct, counsel, guide, and facilitate the intellectual and/or career development of persons identified as protégées. Mentoring is a close, developmental relationship between two people in which a partner willingly avails him/herself of the full range of superior experience, knowledge, skills, or status of the other partner in all spheres of human endeavour. Bilesanmi (2015) posits that mentoring is a set of tailor-made advice and incentives that a more experienced staff, in an innovative way can offer less experienced members in a plethora of ways and on a range of competencies.

Findings also revealed that guidance and counseling is described as an enlightened process whereby people help people by facilitating growth and positive adjustment through self-understanding. Guidance and counselling is a process of helping an individual become fully aware of himself and the ways in which he is responding to the influences of his environment. It further assists individual to establish some personal meaning for this behaviour and to develop and classify a set of goals and values for future behavior. Callanan (2019) sees counselling as a process which occurs in a one-to-one relationship between an individual, troubled by problems with which he cannot cope with and a professional worker whose training and experiences have qualified him to help others give solution to personal needs.

In career support, formal mentoring relationship is spontaneously formed through people getting to know

each other in the work environment. The difference in the status of the relationship between formal and informal mentoring relationship is that the communication in informal relationship is less formal as the name denotes. There are still hierarchies of status in this relationship in that the communication in formal relationship is less formal. The pairing in an informal relationship is often the result of both the mentor and the protégé selection ship has been a recent development in literature.

Coaching is an integral parts of every manager's job. Studies have shown that managers who provide regular ongoing coaching and feedback to help employees develop skills and improve performance, and define and realize career goals have more successful and productive teams. Successful coaches listen well and provide plenty of opportunities for learning and growth. Coaching is one of the best ways to develop and retain valuable employees.

### Conclusion

Thus the study examined mentorship training on performance of organisation. Empirical results from this study finding indicate that mentoring involved the attainment of acquaintance and skill related to one's competence on the job. The use of mentorship techniques has become a veritable means of developing competence in modern organization which Nigerian companies should experiment. There is no human relationship, structures and programmes that is perfect. It is always necessary to guide against abuses, otherwise, the credibility of such programme may be jeopardized. The mentoring programme is no exception. The study also deduced that workplace mentoring connection is a reciprocally valuable arrangement that benefits both parties to improve competencies. The experience gain by mentoring a protégé can facilitate the mentor's own specialized growth, making him/her more of an asset and a competent manager to the organization. It is pertinent to annotate that within mentoring relationships, individuals are learning by doing.

Consequently, mentees are capable to practice the knowledge they have acquired. Mentoring rapport upsurges professional improvement, helps in attracting and retaining talent, increases retention via decline in turnover, and paves tactic for level succession. When protégés acquire the benefits associated with mentoring, there is a high probability that experienced manager would spend much less time in managing crises and fixing problems, and the organization would be better for it.

### Recommendations

The following recommendations are proffered:

1. Guidance and counselling is an enlightened process of facilitating development, therefore counsellors should formulate new designs that bring positive changes in the behavior of learners.
2. Career support focuses on direction, aspirations and career options, mentors should focus more on skill development.
3. There should be a collaborative partnership between the coach and the learner.

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## Effect of Profitability Metrics on Sustainability Reporting: A Sectorial Analysis in Emerging Market Industries

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### Abstract

*This study investigated the relationship between profitability metrics and sustainability reporting in emerging market industries, focusing on environmental, social, and governance disclosures. With growing pressure for companies to improve their sustainability practices, understanding the impact of financial performance on these disclosures is critical. The study used a panel dataset of 33 firms from emerging markets to analyze the effects of key profitability metrics, Return on Assets, Return on Equity, Earnings Before Interest and Taxes, and Earnings per Share, on three types of sustainability disclosures: environmental sustainability disclosure, social responsibility disclosure sustainability index, and governance sustainability disclosure index. The results revealed that profitability metrics do not significantly affect: environmental sustainability disclosure, social responsibility disclosure sustainability index, and governance sustainability disclosure index. The findings highlight the complexity of sustainability reporting, where financial outcomes may not always directly correlate with disclosure practices. For policymakers, businesses, and investors, the study provides important insights into the dynamics of sustainability reporting in emerging markets, emphasizing the need for broader regulatory frameworks that encourage comprehensive disclosure practices.*

**Key Words:** Profitability Metrics. Sustainability Reporting, Environmental Disclosures, Social Disclosures, Governance Disclosures.

### Introduction

Sustainability reporting has become an essential practice for companies globally, especially in emerging markets, as it provides transparency on a firm's environmental, social, and governance (ESG) activities. With growing attention on sustainability, companies are expected to report on their environmental impacts, social responsibility, and corporate governance structures to maintain legitimacy, attract investment, and ensure long-term profitability (Olatunde, et al. 2021). In emerging markets, where corporate transparency and sustainable practices are evolving, understanding the impact of sustainability reporting on profitability is crucial.

Emerging market industries face unique challenges in balancing profitability with sustainability. Companies in these regions often grapple with resource constraints, regulatory complexities, and heightened pressure to meet both national and international sustainability standards (Khan, et al. 2021). Environmental sustainability reporting, for instance, addresses the need for companies to disclose their energy consumption, carbon emissions, and waste

management practices. Studies show that such disclosures can influence consumer perception, regulatory compliance, and operational efficiency, all of which may positively affect profitability (Ali, et al. 2018; Al-Waeli et al., 2021). However, the relationship between these disclosures and financial performance remains complex and industry-specific.

Similarly, social sustainability disclosures (SDI), including reporting on corporate social responsibility (CSR) initiatives, employee welfare, and community development, have been found to impact a company's public image and customer loyalty, which may, in turn, affect profitability (Emeke, et al. 2021; Busru, 2021). Governance sustainability disclosures (SDI), which cover corporate governance practices, risk management, and ethical standards, are also believed to influence profitability by enhancing transparency, reducing risks, and building trust with investors (Moses, 2021; Erin, et al. 2022).

Given these dynamics, this study seeks to investigate the effects of profitability metrics on sustainability reporting practices, specifically focusing on environmental, social, and governance disclosures in

emerging market industries. The study aims to assess how these reporting practices influence company profitability, providing insights into the broader relationship between sustainable business practices and financial performance in emerging markets.

### Problem of the Study

In recent years, the importance of sustainability reporting has grown significantly, especially within emerging markets. These markets are characterized by rapid industrialization, resource constraints, and an increasing need for firms to balance financial performance with environmental and social responsibilities (Khan, et al. 2021). Despite the growing interest in sustainability, the relationship between sustainability reporting and profitability remains underexplored in these regions. While existing literature highlights the positive correlation between sustainability practices and corporate financial performance in developed markets (Ikumapayi, et al. 2018), studies focusing on emerging markets are scarce and often yield mixed results. This creates a critical gap in understanding how environmental, social, and governance (ESG) disclosures influence firm profitability in these regions.

Emerging markets are often grappling with weaker regulatory frameworks, which results in inconsistencies in the implementation and quality of sustainability reporting. As a result, it becomes essential to understand how environmental sustainability reporting, social sustainability disclosures (SDI), and governance sustainability disclosures (SDI) contribute to profitability metrics like Return on Assets (ROA), Return on Equity (ROE), Earnings Before Interest and Taxes (EBIT), and Earnings per Share (EPS) in these regions. Companies in emerging markets may face higher challenges in reporting sustainability factors due to resource limitations and lack of structured frameworks (Kundayo, et al.2020).

While sustainability reporting has been shown to improve stakeholder trust and brand image in developed economies, the extent to which these benefits translate into financial gains in emerging markets is still uncertain (Freeman, 1984; Ndanafu & Ojodi, 2023). This study, therefore, seeks to explore the relationship between sustainability reporting and profitability in emerging market industries, providing insights into the broader implications of sustainability practices for financial performance. Particularly, the following the null hypotheses will be used for the Study:

- iv. **H<sub>01</sub>:** There is no significant effect of profitability metrics on environmental sustainability reporting in emerging market industries.

- v. **H<sub>02</sub>:** There is no significant effect of the profitability metrics on the social sustainability disclosures (SDI) of companies in emerging markets.
- vi. **H<sub>03</sub>:** There is no significant effect of the profitability metrics on Governance sustainability disclosures (SDI) of companies in emerging markets.

### Conceptual Review

#### Sustainability Reporting in Emerging Markets

Emerging markets are characterized by rapid industrialization, resource scarcity, and underdeveloped regulatory frameworks (Nuhu & Alam, 2024). These markets face unique challenges, such as limited access to sustainable technologies, lack of standardized reporting practices, and inconsistent enforcement of environmental regulations. Despite these challenges, the importance of sustainability reporting in emerging markets has risen, as companies seek to attract international investment, improve their environmental practices, and align with global sustainability goals (Nzekwe, et al. 2021). The growth of global supply chains and increasing consumer demand for ethical practices has placed additional pressure on companies in these regions to report on their sustainability efforts (Bose & Khan, 2022).

The evolution of sustainability reporting standards has been pivotal in shaping the practices of companies worldwide. The Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) have developed frameworks that provide guidelines for companies to disclose their sustainability performance in a structured manner (A Practical Guide to Sustainability Reporting, 2013). These standards have facilitated greater consistency in reporting and have enabled companies to communicate their ESG performance effectively. In emerging markets, however, the adoption of these standards is often slow due to regulatory and infrastructure challenges (Adegboyegun, et al. 2020).

#### Environmental Sustainability Reporting and Profitability

Environmental sustainability reporting plays a critical role in shaping a company's financial performance. Companies that disclose their environmental impacts, such as carbon emissions, waste management, and resource usage, often experience improved financial performance due to enhanced stakeholder trust, regulatory compliance, and operational efficiency (Bose, et al. 2022; Al-Waeli, et al. 2021). Voluntary environmental disclosures can act as a signal to investors, signaling that the company is forward-thinking and prepared to manage environmental risks effectively (Friske, et al. 2023). Research indicates that

firms that adopt comprehensive environmental reporting practices often see better financial outcomes, such as improved stock performance and profitability, due to reduced operational costs and improved risk management (Igbinovia & Agbadua, 2023).

The impact of environmental disclosures on profitability is often industry-specific. For example, industries such as manufacturing and energy face higher scrutiny regarding their environmental practices due to their substantial ecological footprints (Emeke, et al, 2021). These industries are under significant pressure to report on their environmental practices and reduce their impact, which can present both challenges and opportunities. On the one hand, the need for regulatory compliance can drive up costs, but on the other hand, it creates opportunities for cost savings through efficiency improvements, innovative technologies, and access to green financing (Ali, et al. 2018; Nmer & Hass, 2021).

### **Exploring the Components of Social Sustainability Reporting**

Social sustainability disclosures (SDI) encompass corporate social responsibility (CSR) initiatives, employee welfare programs, community engagement, and stakeholder relations (Emeke, et al. 2021; Sani, 2025). CSR reporting highlights how organizations contribute to societal development through charitable contributions, health and safety programs, and education support, while employee welfare disclosures communicate policies on training, fair wages, and work-life balance. These components provide a transparent framework for stakeholders to evaluate a company's commitment to social responsibility (Adegboyegun et al., 2020).

Transparent reporting of social sustainability activities strengthens stakeholder trust by demonstrating accountability and ethical business conduct (Whitt & Bournier, 2018). Firms that actively communicate social initiatives foster stronger brand loyalty, as customers, investors, and employees perceive them as socially responsible and ethical (Wilky & Cole, 2020). Studies show that positive stakeholder perceptions of social responsibility can translate into increased customer retention, higher employee engagement, and improved investor confidence (Suchman, 1995; Ali, et al. 2018; Omotola & Lambo, 2024).

### **Governance Sustainability Disclosures and Their Influence on Profitability**

Governance sustainability disclosures encompass corporate governance structures, anti-corruption policies, and risk management practices that organizations communicate to stakeholders (Mohammed, 2018). These disclosures provide insight into board composition, internal control mechanisms,

compliance frameworks, and ethical guidelines that ensure accountability and mitigate operational and financial risks. Effective governance reporting reflects a company's commitment to regulatory compliance and sustainable business practices, which are particularly critical in emerging markets where institutional weaknesses and corruption risks are prevalent (Jyoti & Khanna, 2021; Nuhu, et al. 2024).

Transparent governance practices enhance operational efficiency and protect organizations from financial mismanagement and reputational damage (Friske, et al. 2023), while ethical governance also fosters internal trust among employees, reduces agency costs, and strengthens long-term strategic decision-making, which collectively contributes to sustained profitability (Omotola et al. 2024) as investors are more likely to commit capital to firms that provide clear, comprehensive governance reports, perceiving them as lower-risk and more likely to generate consistent returns. Consequently, robust governance sustainability disclosures play a critical role in enhancing both financial performance and market valuation in emerging economies.

### **Profitability Metrics in Emerging Market Industries**

Profitability metrics such as Return on Assets (ROA), Return on Equity (ROE), Earnings Before Interest and Taxes (EBIT), and Earnings per Share (EPS) are critical indicators used to evaluate a company's financial health. ROA measures how efficiently a company uses its assets to generate profit, with higher values indicating better asset utilization (Freeman, 1984). ROE, on the other hand, gauges the profitability relative to shareholders' equity, signaling how effectively a company utilizes its equity base to generate earnings (Ali, et al. 2018). EBIT focuses on operational efficiency by excluding interest and taxes, providing a clearer view of a company's core profitability (Friske, et al. 2023). EPS, often a favorite among investors, measures the profit attributable to each share, offering insights into company performance from a shareholder's perspective (Al-Waeli, et al. 2021).

Profitability metrics are essential in assessing the financial health of a company, especially in emerging markets where companies face unique challenges such as fluctuating economic conditions and regulatory uncertainty (Bose, et al. 2022). These metrics help stakeholders, including investors and analysts, determine the sustainability and risk profile of a company. Strong profitability ratios can indicate a company's ability to weather economic volatility and sustain growth, which is crucial for long-term financial stability (Khan, et al. 2021; Ukaru & Onmani, 2024).

In emerging economies, there is a growing recognition of the relationship between profitability and sustainability. Companies that effectively integrate sustainability practices into their operations may experience enhanced profitability through improved efficiency, brand loyalty, and investor trust (Ali, et al., 2018; Kolawole, et al. 2023; Obinna & Onwe, 2024). Moreover, companies in these regions are increasingly using sustainability reporting to attract investors and comply with global standards, thus improving their financial outcomes (Nazim, et al. 2017; Oluwagbade, et al. 2023).

### **Theoretical Review**

This study is grounded in several key theories that explain the relationship between sustainability reporting and profitability in emerging markets. The Stakeholder Theory (Freeman, 1984) posits that companies must consider the interests of all stakeholders, not just shareholders, and sustainability reporting helps build trust with various stakeholders, leading to improved financial performance. Signaling Theory (Spence, 1973) suggests that voluntary sustainability disclosures act as signals to the market, enhancing a company's reputation and investor confidence, which in turn influences profitability (Friske, et al. 2023). Resource-Based View (RBV) (Barney, 1991) also informs the study by highlighting how a company's internal resources, such as transparent governance and ethical practices, can provide a competitive advantage. Finally, Legitimacy Theory (Suchman, 1995) argues that companies disclose sustainability practices to gain legitimacy in society, which can enhance their market position and long-term profitability.

### **Empirical Review**

Nzekwe et al. (2021) examined the impact of sustainability reporting on the financial performance of industrial goods companies in Nigeria from 2008 to 2019. Focusing on environmental, social, and economic reporting, the study analyzed data from eleven firms using purposive sampling. The results showed that each type of sustainability reporting positively influenced cash value added. The study recommended the adoption of stronger environmental policies and innovations to enhance financial performance. Panel data analysis methods, including regression and Granger causality tests, were used. Erin et al. (2022) explored the relationship between corporate governance and sustainability reporting quality among 120 listed firms in Nigeria. Governance was assessed using board variables (size, independence, gender diversity, expertise) and audit committee attributes (size, expertise, meeting frequency). Sustainability reporting quality was scored from 0 to 4,

with independent assurance receiving the highest score. The study, using ordered logistic regression, found significant links between governance variables and reporting quality, with external assurance enhancing this relationship. It highlighted implications for policymakers and managers, suggesting scope for cross-country research.

Friske et al. (2023) investigated the impact of voluntary sustainability reporting on firm value, using Tobin's Q as a measure. Analyzing panel data from reporting and non-reporting firms between 2011 and 2020, the study found that sustainability reporting initially had a negative relationship with Tobin's Q but became positive over time. The study, grounded in signaling theory, concluded that sustainability reporting, once seen as costly, enhanced firm value as investor understanding improved. External assurance was also found to positively impact Tobin's Q by increasing credibility.

Ferreira and Martins (2024) explored the relationship between integrated reporting and shareholder value creation in public companies across 39 countries between 2011 and 2018. Using propensity score matching, multilevel regressions, and difference-in-differences models, the study found that adopting integrated reporting enhanced shareholder value by reducing information asymmetry, improving stock price synchronicity, and increasing earnings predictability, especially in developed countries. The study concluded that the reporting process itself, rather than specific frameworks, drives value creation, positioning integrated reporting as a key tool for shareholder value.

Omotola et al. (2024) investigated the relationship between sustainability accounting, reporting, and public value creation in Nigeria's public sector. Data were collected via questionnaires from 2,730 respondents, including managers and senior personnel across Nigeria's six geo-political zones. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study found a negative relationship between sustainability accounting and public value creation, highlighting the absence of mandatory sustainability reporting requirements. The study emphasized the need for stronger regulatory frameworks to foster sustainability practices in Nigeria's public sector.

Sani (2025) investigated the challenges and prospects of public value creation, sustainability accounting, and reporting in Nigeria's public sector. Through exploratory research, the study reviewed literature and published articles. Findings revealed key issues such as lack of political will, minimal citizen involvement, and insufficient skilled personnel, all of which hinder effective value creation and sustainability reporting. The study recommended stronger political commitment, increased citizen and stakeholder participation,

capacity building for public sector staff, and awareness campaigns on the benefits of sustainability practices and reporting.

### Research Gaps

Despite increasing attention to sustainability reporting in emerging markets, several gaps persist in the literature. First, most studies emphasize environmental and social disclosures, with limited focus on governance sustainability disclosures and their direct effect on profitability in Nigerian firms. Second, while research links sustainability reporting to financial performance, empirical evidence on the interaction between governance practices, investor confidence, and long-term profitability in emerging economies remains sparse. Finally, the role of transparency and ethical practices as mediators between governance disclosures and firm performance has not been sufficiently explored, creating a need for context-specific studies in Nigerian listed companies to fill these gaps.

### Research Methodology

#### Research Design and sample size

The study employed an ex-post facto research design to investigate sample units over a defined period, enabling the examination of changes, effects, and behavioral patterns over time. The population included 46 listed manufacturing companies on the Nigerian Exchange Group (NGX) as of December 2024, with a sample of 33 firms selected from sectors including Natural Resources, Industrial Goods, Consumer Goods, Conglomerates, Healthcare, and Agriculture. Secondary data, validated by external auditors, was used, and the pooled panel technique was applied to manage missing data and analyze relationships effectively.

#### Model Specifications

The model for this study will be stated in econometrics terms below as;

$$ESGSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. I}$$

$$SRDSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. II}$$

$$GOVSDI_{it} = \alpha_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 EBIT_{it} + \beta_4 EPS_{it} + \beta_5 FSIZE_{it} + \varepsilon_t \quad \text{eq. III}$$

Where;

ESGSDI = Environmentally Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on material, energy, water, biodiversity, emission/greenhouse gas, waste management, product services and compliance to laws.

SRDSDI = Social Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on community, donation, employee, health and safety and customer/complaints.

GOVSDI = Governance Sustainable Disclosure index (measured as measures the extent of corporate Governance, Social, and Environmental (GSE) information disclosure by companies related to their GSE performance.

ROA = Return on Asset: measured as profit after tax divided by total asset (%)

ROE = Return on Equity: measured as profit after tax divided by total equity (%)

EBIT = Ebit Margin: measured as earnings before interest and taxes divided by sales (%)

EPS = Earnings Per Share: measured as net profit after tax divided by number of ordinary shares

FS = Firm Size (Measured as the natural logarithm of total assets of firm  $i$  in year  $t$ )

$f$  = functional relationship between dependent and independent variables

$\varepsilon_t$  = error term

$i$  = firm identifier

$t$  = time variable (10 Years)

$\alpha_0$  is the intercept of the regression.

$\beta_1 - \beta_5$  are the co-efficient of the regression equation.

The Apriori expectation:  $\beta_1 - \beta_5$  is lesser or greater than 0.

## Analysis and Discussion of Results

### Descriptive Statistics Analysis and Discussion

**Table 1: Summary of Descriptive for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE**

| VARIABLES | OBS | MEAN     | STD. DEV | MIN       | MAX      |
|-----------|-----|----------|----------|-----------|----------|
| ESGSDI    | 330 | .5404361 | .5249065 | -.9811688 | 3.484753 |
| SRDSDI    | 330 | .3212424 | .1661745 | 0         | .79      |
| GOVSDI    | 330 | .4002121 | .1922217 | 0         | .83      |
| ROA       | 330 | 4.45339  | 15.88686 | -71.3574  | 176.2669 |
| ROE       | 330 | 5.906927 | 106.0372 | -989.3803 | 905.423  |
| EBIT      | 330 | 23.93526 | 315.4186 | -624.4804 | 5655.464 |
| EPS       | 330 | 4.141648 | 18.67017 | -100.2626 | 202.5645 |
| FSIZE     | 330 | 16.93317 | 2.079749 | 12.83807  | 22.09412 |

Source: Regression Output, 2025.

The descriptive statistics for the variables in the study provide an overview of the distribution and variability of the data. ESGSDI (Environmental, Social, and Governance Sustainability Disclosure Index) has a mean of 0.54 with a high standard deviation of 0.52, suggesting significant variability in the level of sustainability disclosures across the sample. The minimum and maximum values of -0.98 and 3.48 indicate a wide range in the degree of ESG reporting among firms. SRDSDI (Social Responsibility Disclosure Sustainability Index) shows a mean of 0.32, with a standard deviation of 0.17, implying moderate

variation in social responsibility disclosures, and the maximum value of 0.79 suggests a limited number of firms reporting extensively on social sustainability.

ROA, ROE, EBIT, and EPS display considerable variability, particularly ROE, which has a large standard deviation of 106.04, indicating significant profit fluctuations among firms. FSIZE (Firm Size) has a mean of 16.93 and a standard deviation of 2.08, suggesting moderate variation in firm sizes across the sample. Overall, these descriptive statistics indicate a diverse sample with substantial variation in both sustainability reporting and financial performance.

### Normality Test

**Table 2: Shapiro-Wilk W test for normal data for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE**

| VARIABLES | OBS | W       | V       | Z      | PROB>Z  |
|-----------|-----|---------|---------|--------|---------|
| ESGSDI    | 330 | 0.86244 | 31.896  | 8.165  | 0.00000 |
| SRDSDI    | 330 | 0.99305 | 1.610   | 1.124  | 0.13057 |
| GOVSDI    | 330 | 0.96681 | 7.697   | 4.812  | 0.00000 |
| ROA       | 330 | 0.64588 | 82.108  | 10.394 | 0.00000 |
| ROE       | 330 | 0.30626 | 160.855 | 11.980 | 0.00000 |
| EBIT      | 330 | 0.07159 | 215.266 | 12.667 | 0.00000 |
| EPS       | 330 | 0.39663 | 139.899 | 11.651 | 0.00000 |
| FSIZE     | 330 | 0.97773 | 5.163   | 3.871  | 0.00005 |

Source: Regression Output, 2025.

The Shapiro-Wilk W test results for normality indicate that most of the variables, including ESGSDI, GOVSDI, ROA, ROE, EBIT, and EPS, significantly deviate from normality, as their p-values are below 0.05 ( $p < 0.00000$ ). This suggests that these variables are not normally distributed. However, SRDSDI and FSIZE show p-values greater than 0.05 (0.13057 and

0.00005, respectively), with SRDSDI not significantly deviating from normality, while FSIZE also fails to meet the assumption of normality. The non-normality in many financial and sustainability variables may warrant transformations or the use of non-parametric tests in subsequent analyses.

## Correlation Analysis

**Table 3: Summary of Spearman Correlation Matrix for ESGSDI SRDSDI GOVSDI ROA ROE EBIT EPS and FSIZE, stats, stats(rho p) star(0.05)**

|               | ESGSDI   | SRDSDI  | GOVSDI   | ROA      | ROE     | EBIT   | EPS     | FSIZE  |
|---------------|----------|---------|----------|----------|---------|--------|---------|--------|
| <b>ESGSDI</b> | 1.0000   |         |          |          |         |        |         |        |
| <b>SRDSDI</b> | 0.1633*  | 1.0000  |          |          |         |        |         |        |
|               | 0.0004   |         |          |          |         |        |         |        |
| <b>GOVSDI</b> | 0.1768   | 0.6975* | 1.0000   |          |         |        |         |        |
|               | 0.0017   | 0.0000  |          |          |         |        |         |        |
| <b>ROA</b>    | 0.0176   | -0.0667 | -0.1093* | 1.0000   |         |        |         |        |
|               | 0.7503   | 0.2269  | 0.0472   |          |         |        |         |        |
| <b>ROE</b>    | -0.1067  | 0.0471  | 0.0268   | 0.0119   | 1.0000  |        |         |        |
|               | 0.0527   | 0.3942  | 0.6280   | 0.8301   |         |        |         |        |
| <b>EBIT</b>   | -0.0996  | 0.0155  | -0.0035  | -0.1022  | 0.0995  | 1.0000 |         |        |
|               | 0.0707   | 0.7796  | 0.9488   | 0.0637   | 0.0710  |        |         |        |
| <b>EPS</b>    | -0.0494  | 0.0631  | 0.0552   | -0.0031  | 0.1709* | 0.0005 | 1.0000  |        |
|               | 0.3709   | 0.2533  | 0.3174   | 0.9551   | 0.0018  | 0.9923 |         |        |
| <b>FSIZE</b>  | -0.1342* | -0.0278 | -0.1447* | -0.1108* | 0.1960* | 0.0091 | 0.5033* | 1.0000 |
|               | 0.0147   | 0.6153  | 0.0085   | 0.0444   | 0.0003  | 0.8699 | 0.0000  |        |

Source: Regression Output, 2025.

## Result of Multicollinearity Test Using Variance Inflation Factor (VIF)g

**Table 4: VIF Test Result**

| MODELS   | VARIABLES           | VIF  | 1/VIF    | MEAN VIF |
|----------|---------------------|------|----------|----------|
| <b>1</b> | <b>ESGSDI</b> FSIZE | 1.02 | 0.979420 | 1.01     |
|          | EPS                 | 1.02 | 0.981551 |          |
| <b>2</b> | <b>SRDSDI</b> ROA   | 1.00 | 0.995295 |          |
|          | ROE                 | 1.00 | 0.996127 |          |
| <b>3</b> | <b>GOVSDI</b> EBIT  | 1.00 | 0.999656 |          |

Source: Regression Output, 2025

## Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

**Table 5: Breusch and Pagan Lagrangian Multiplier Tests fitted values**

| MODELS   | VARIABLE      | CHI2(1) | PROB > CHI2 |
|----------|---------------|---------|-------------|
| <b>1</b> | <b>ESGSDI</b> | 6.31    | 0.0120      |
| <b>2</b> | <b>SRDSDI</b> | 1.28    | 0.2580      |
| <b>3</b> | <b>GOVSDI</b> | 0.13    | 0.7210      |

Source: Regression Output, 2025.

## Levin-Lin-Chu Panel Unit Root Test

**Table 6: Diagnostic Tests Results for all the variables at First Differencing**

| Test   | Variable | Level/1st Diff. [1(1)] | Unadjusted t | Adjusted t | p-Value | Stationarity Conclusion |
|--------|----------|------------------------|--------------|------------|---------|-------------------------|
| ESGSDI | DESGSDI  | First Difference       | -12.6223     | -3.9027    | 0.0000  | Stationary              |
| SRDSDI | DSRDSDI  | First Difference       | -12.1416     | -4.0228    | 0.0000  | Stationary              |
| GOVSDI | DGOVSDI  | First Difference       | -14.1230     | -6.6017    | 0.0000  | Stationary              |
| ROA    | DROA     | First Difference       | -19.4847     | -10.4046   | 0.0000  | Stationary              |
| ROE    | DROE     | First Difference       | -17.3456     | -8.6270    | 0.0000  | Stationary              |
| EBIT   | DEBIT    | First Difference       | -17.6658     | -9.0103    | 0.0000  | Stationary              |
| EPS    | DEPS     | First Difference       | -16.3616     | -6.7525    | 0.0000  | Stationary              |
| FSIZE  | DFSIZE   | First Difference       | -13.6143     | -6.6386    | 0.0000  | Stationary              |

Source: Regression Output, 2025

The Levin-Lin-Chu (LLC) panel unit root test results indicate that ESGSDI, GOVSDI, ROA, ROE, EBIT, and EPS are stationary at level, as their p-values are below 0.05 (0.0000), suggesting they do not contain a unit root and are suitable for further analysis without differencing. However, SRDSDI, FSIZE, and EPS are non-stationary at level, with p-values of 0.3131 and

0.5110, indicating the need for first differencing to achieve stationarity. However, after first differencing, all variables, including SRDSDI, FSIZE, GOVSDI, ROA, ROE, EBIT, EPS, and FSIZE, become stationary with p-values of 0.0000, confirming that they are free from unit roots and can be used for further regression analysis.

## Hypotheses Testing for the Model I

**Table 7a: Summary PCSE for DESGSDI DROA DROE DEBIT DEPS and DFSIZE**

| DESGSDI      | COEF.     | Panel-Corrected STD. ERR. | z     | P> z   |
|--------------|-----------|---------------------------|-------|--------|
| DROA         | -.0010466 | .0008741                  | -1.20 | 0.231  |
| DROE         | .0000578  | .000068                   | 0.85  | 0.396  |
| DEBIT        | -.0000244 | .0000263                  | -0.93 | 0.354  |
| DEPS         | .0001007  | .0013209                  | 0.08  | 0.939  |
| DFSIZE       | .1757749  | .0724723                  | 2.43  | 0.015  |
| _CONS        | -.012005  | .023353                   | -0.51 | 0.607  |
| N            |           |                           |       | 297    |
| R-squared    |           |                           |       | 0.0147 |
| Wald chi2(5) |           |                           |       | 9.24   |
| Prob > chi2  |           |                           |       | 0.0998 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model I indicate that the variables DROA, DROE, DEBIT, and DEPS do not significantly influence DESGSDI (Environmental Sustainability Disclosure Index) as their p-values are greater than 0.05 (0.231, 0.396, 0.354, and 0.939, respectively). This suggests that changes in profitability metrics such as ROA, ROE, and EBIT, along with EPS, do not have a strong relationship with environmental disclosures.

However, DFSIZE (Firm Size) has a statistically significant positive effect on DESGSDI with a coefficient of 0.1757 and p-value of 0.015, indicating that larger firms are more likely to report environmental sustainability disclosures. The R-squared value of 0.0147 suggests that the model explains a small portion of the variation in DESGSDI. The Wald chi-squared test ( $p = 0.0998$ ) indicates that, collectively, the variables are not highly significant.



### Hypotheses Testing for the Model II

**Table 7b: Summary PCSE for DSRDSI DROA DROE DEBIT DEPS and DFSIZE**

|              | Panel-Corrected |           |       |        |
|--------------|-----------------|-----------|-------|--------|
| DSRDSI       | COEF.           | STD. ERR. | z     | P> z   |
| DROA         | .0001547        | .0002616  | 0.59  | 0.554  |
| DROE         | .0000305        | .0000224  | 1.36  | 0.175  |
| DEBIT        | 3.90e-07        | 7.08e-06  | 0.06  | 0.956  |
| DEPS         | -.0001336       | .0004612  | -0.29 | 0.772  |
| DFSIZE       | .0347136        | .0232946  | 1.49  | 0.136  |
| _CONS        | -.0006151       | .0060337  | -0.10 | 0.919  |
| N            |                 |           |       | 297    |
| R-squared    |                 |           |       | 0.0068 |
| Wald chi2(5) |                 |           |       | 5.49   |
| Prob > chi2  |                 |           |       | 0.3592 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model II indicate that none of the profitability metrics (DROA, DROE, DEBIT, DEPS) significantly affect DSRDSI (Social Responsibility Disclosure Sustainability Index), as all p-values exceed 0.05 (0.554, 0.175, 0.956, and 0.772, respectively).

This suggests that changes in profitability do not strongly influence social sustainability disclosures. The R-squared value of 0.0068 suggests that the model explains very little variation in social sustainability disclosures.

### Hypotheses Testing for the Model III

**Table 7c: Summary PCSE for DGOVSDI DROA DROE DEBIT DEPS and DFSIZE**

|              | Panel-Corrected |           |       |        |
|--------------|-----------------|-----------|-------|--------|
| DGOVSDI      | COEF.           | STD. ERR. | z     | P> z   |
| DROA         | .0006196        | .0006985  | 0.89  | 0.375  |
| DROE         | -.0000533       | .0000377  | -1.41 | 0.157  |
| DEBIT        | 9.53e-06        | .0000331  | 0.29  | 0.773  |
| DEPS         | .0004599        | .0003977  | 1.16  | 0.247  |
| DFSIZE       | .0225629        | .0299752  | 0.75  | 0.452  |
| _CONS        | -.0042591       | .0104903  | -0.41 | 0.685  |
| N            |                 |           |       | 297    |
| R-squared    |                 |           |       | 0.0142 |
| Wald chi2(5) |                 |           |       | 9.10   |
| Prob > chi2  |                 |           |       | 0.1050 |

Source: Regression Output, 2025

The results from the panel-corrected standard errors (PCSE) for Model III show that none of the profitability metrics (DROA, DROE, DEBIT, DEPS) significantly influence DGOVSDI (Governance Sustainability Disclosure Index), as all p-values are above 0.05 (0.375, 0.157, 0.773, and 0.247, respectively). This indicates that profitability metrics do not have a strong impact on governance sustainability disclosures. DFSIZE (Firm Size) also does not have a statistically significant effect on DGOVSDI ( $p = 0.452$ ). The R-squared value of 0.0142 suggests that the model explains a very small proportion of the variation in governance disclosures. The Wald chi-squared statistic of 9.10 ( $p = 0.1050$ )

further indicates that the model is not statistically significant, and the explanatory variables do not collectively influence governance sustainability disclosures in the sample.

### Discussion of Findings

The results of the hypotheses testing across the three models indicate varied impacts of profitability metrics on sustainability disclosures. In Model I (environmental sustainability disclosure index, DESGSDI), profitability metrics such as ROA, ROE, EBIT, and EPS show no significant relationship with environmental disclosures, as indicated by their high p-values (0.231, 0.396, 0.354, and 0.939, respectively).

However, DFSIZE (firm size) has a significant positive effect on DESGSDI ( $p = 0.015$ ), suggesting that larger firms tend to report more on environmental sustainability, possibly due to better resources and regulatory pressure (Khan, et al. 2021; Ali, et al, 2018). The R-squared value of 0.0147 suggests that the model explains only a small portion of the variation in environmental sustainability disclosures.

In Model II (social responsibility disclosure sustainability index, DSRDSI), none of the profitability metrics or firm size show a significant relationship with social disclosures, as all p-values exceed 0.05. The R-squared value of 0.0068 and the Wald chi-squared result of 5.49 ( $p = 0.3592$ ) indicate that the model is not significant in explaining social sustainability disclosures.

In Model III (governance sustainability disclosure index, DGOVSDI), similar results are found, with no significant effects from ROA, ROE, EBIT, EPS, or DFSIZE on governance disclosures. The R-squared value of 0.0142 and the Wald chi-squared statistic of 9.10 ( $p = 0.1050$ ) indicate that governance disclosures are not strongly influenced by profitability metrics in this study.

These findings align with previous research, which suggests that in emerging markets, profitability may not always correlate directly with sustainability reporting due to varying regulatory environments and organizational priorities (Bose, et al. 2022; Nmer, et al. 2021).

## Summary, Conclusion and Recommendations

### Summary of Findings

- iv. For Environmental Sustainability Reporting, the analysis shows no significant effect of profitability metrics (ROA, ROE, EBIT, EPS) on DESGSDI (environmental sustainability disclosure). Therefore, the null hypothesis is accepted.
- v. For Social Sustainability Disclosures, Profitability metrics and firm size have no significant impact on DSRDSI (social sustainability disclosure). The null hypothesis is accepted.
- vi.  $H_{03}$  (Governance Sustainability Disclosures): Profitability metrics and firm size do not significantly affect DGOVSDI (governance sustainability disclosure). The null hypothesis is accepted.

### Conclusion

This study concludes that profitability metrics for the study which includes ROA, ROE, EBIT, and EPS, do not significantly impact environmental, social, or governance sustainability disclosures (DESGSDI, DSRDSI, DGOVSDI) in emerging market industries. The findings suggest that in emerging markets,

sustainability disclosures are influenced by factors other than profitability, particularly organizational size. These results highlight the complexity of sustainability reporting and the need for further investigation into other potential drivers within these markets.

### Recommendations

- v. Policy-makers should develop clearer sustainability reporting standards to encourage greater transparency and uniformity in disclosures across industries.
- vi. Companies in emerging markets should invest in improving their sustainability reporting practices, particularly in the environmental sector, to align with global standards and attract investors.
- vii. Future research should explore other factors, such as regulatory pressures and corporate culture, that may influence sustainability disclosures in emerging market industries.
- viii. Investors should consider firm size and governance practices when assessing sustainability performance, as these factors appear more impactful than profitability metrics.

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## Eco-Product Packaging and Sales Performance of Food and Beverage Firms in Yenagoa, Bayelsa State

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### Abstract

*This study examined the relationship between Eco-product packaging and sales performance of food and beverage firms in Yenagoa, Bayelsa State. Specifically, it investigated the relationships between biodegradable packaging, and recyclable packaging and customer patronage. The study adopted a descriptive survey design. A total of 20 food and beverage firms were selected, as obtained from the Bayelsa State Ministry of Commerce and Industry as of March 2025. The researcher purposively administered ten (10) copies of the questionnaire to customers in each of the 20 selected food and beverage firms in Yenagoa, Bayelsa State. This gave a total of two hundred (200) copies of the questionnaire. After data cleansing, 190 retrieved questionnaires were used for data analysis. Data were collected through a structured questionnaire and analyzed using the Pearson Product Moment Correlation Coefficient (PPMC) at a 0.05 significance level. The findings revealed a strong and positive relationship between biodegradable packaging and customer patronage ( $r = 0.842$ ,  $p = 0.012$ ), indicating that firms adopting biodegradable materials attract more environmentally conscious customers. Similarly, recyclable packaging showed a strong positive relationship with customer patronage ( $r = 0.816$ ,  $p = 0.017$ ), suggesting that customers are more likely to patronize firms that promote waste reduction through recycling. The study concludes that eco-friendly packaging significantly influences customer patronage in Yenagoa's food and beverage industry. It recommends that firms should integrate environmentally sustainable packaging strategies into their operations, not only to comply with environmental regulations but also to gain competitive advantage by appealing to the growing segment of eco-conscious consumers.*

**Keywords:** Sales performance, biodegradable packaging, recyclable packaging, customer patronage, eco-friendly packaging

### Introduction

The rising global concern for environmental sustainability has reshaped business practices, particularly in the food and beverage sector. A key element of sustainable operations is eco-product packaging, which involves the use of biodegradable, recyclable, or reusable materials. Eco-packaging has become a strategic factor influencing consumer purchasing behavior and sales performance, as it enhances brand image and fosters customer loyalty (Kumar & Prakash, 2023; Zhang et al., 2022). In Yenagoa, Bayelsa State, demand for eco-friendly products is increasing as consumers become more environmentally conscious. Many are willing to support businesses that demonstrate sustainability through packaging choices (Okafor et al., 2023). Eco-

packaging not only reduces pollution but also aligns with government policies such as those promoted by the National Environmental Standards and Regulations Enforcement Agency (NESREA), which seeks to curb plastic waste in Nigeria (Adebayo & Yusuf, 2023).

Sales performance in the food and beverage sector depends on product quality, pricing, and branding, but eco-packaging is increasingly recognized as a driver of customer preference. Studies show that businesses adopting sustainable packaging gain stronger brand reputation, customer retention, and higher revenue (Adegbite et al., 2023; Akinola & Okeke, 2022). Many consumers prefer products with biodegradable or recyclable packaging, viewing them as healthier and more responsible choices. However, challenges persist. Sustainable packaging materials often cost more than

conventional plastics, creating financial strain for small and medium-sized enterprises (SMEs) (Eze & Nwachukwu, 2023). Consumer awareness is also uneven, with some buyers still prioritizing affordability over sustainability (Ibrahim & Olayemi, 2023). These barriers call for strategic implementation supported by government incentives and consumer education to ensure affordability and adoption.

The environmental challenges facing Yenagoa, including flooding and plastic waste pollution, make eco-friendly packaging especially urgent. Plastic disposal contributes significantly to degradation, reinforcing the need for food and beverage firms to embrace sustainable alternatives (Nwankwo & Agbo, 2023). Beyond reducing waste, eco-packaging strengthens corporate social responsibility (CSR), enhances brand loyalty, and improves long-term sales performance.

Despite growing awareness of sustainability, limited empirical research exists on the impact of eco-product packaging on sales performance in Yenagoa's food and beverage industry. Most prior studies take a broader perspective, leaving a gap in understanding local consumer behavior and profitability impacts (Ogunleye et al., 2023). This study addresses this gap by examining how eco-product packaging affects purchasing decisions, brand perception, and sales growth in Yenagoa.

### **Statement of the Problem**

The growing global emphasis on environmental sustainability has encouraged the adoption of eco-product packaging. However, in developing contexts such as Nigeria, its application in the food and beverage sector remains inconsistent (Kumar & Prakash, 2023). Although studies link eco-packaging to consumer purchasing behavior, little is known about its direct influence on sales performance in Yenagoa, Bayelsa State. One key barrier is cost. Many small and medium-sized enterprises (SMEs) face financial difficulties transitioning from conventional plastics to biodegradable or recyclable alternatives (Eze & Nwachukwu, 2023). The high cost of sustainable materials discourages adoption, reducing competitiveness (Adegbite et al., 2023). Additionally, consumer preferences differ: while some prioritize sustainability and are willing to pay more, others focus

on affordability, creating uncertainty for firms (Ibrahim & Olayemi, 2023). Weak regulatory enforcement further limits adoption (Adebayo & Yusuf, 2023). In Yenagoa, where plastic waste pollution threatens environmental health, the reluctance of firms to fully adopt eco-packaging raises sustainability concerns. Without empirical data on its impact on sales, firms may continue prioritizing short-term cost savings over long-term benefits (Nwankwo & Agbo, 2023). This study, therefore, investigates the relationship between eco-packaging and sales performance, offering insights to promote sustainable business practices (Ogunleye et al., 2023).

### **Objectives of the study**

The main aim of this study is to investigate the influence of eco-product packaging and sales performance of food and beverage firms in Yenagoa, Bayelsa State. Specifically, the study seeks to;

1. To determine the extent of relationship between biodegradable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State
2. To determine the extent of relationship between recyclable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State.

### **Research Questions**

The following research questions would guide the study;

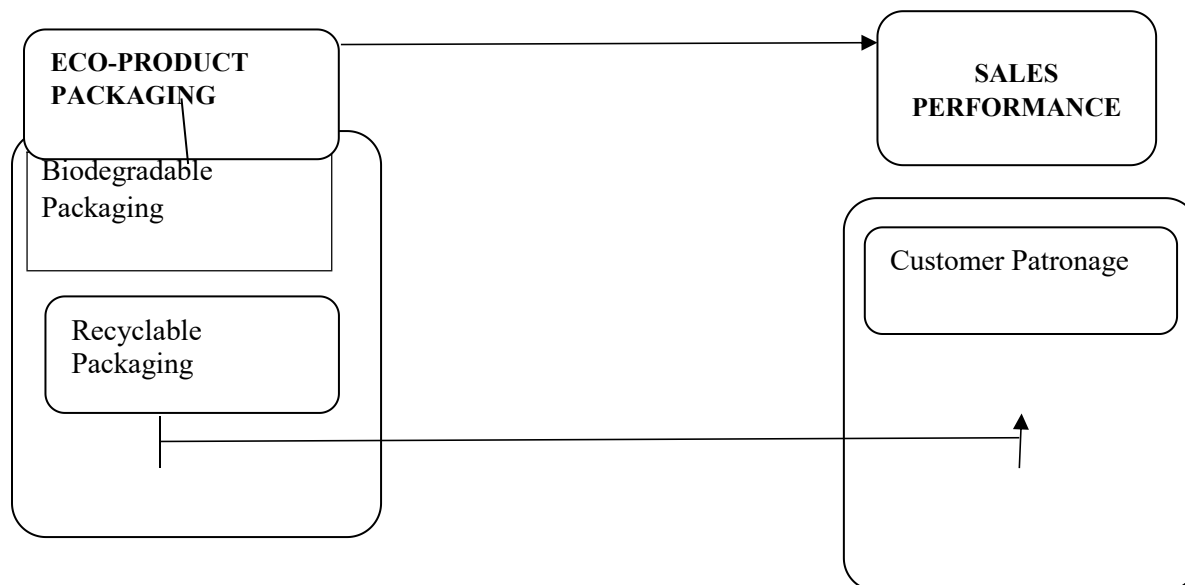
1. What is the relationship between biodegradable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State?
2. What is the relationship between recyclable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State?

### **Hypotheses**

- H0<sub>1</sub>:** There is no significant relationship between biodegradable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State
- H0<sub>2</sub>:** There is no significant relationship between recyclable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State

## Literature Review

### Conceptual Framework



Source: Adopted from the works of (Nwankwo & Agbo, 2023; Kumar & Prakash, 2023; (Zhang et al., 2022)

Fig 1.1: Conceptual framework on the relationship between eco-product packaging and sales performance of food and beverage firms in Yenagoa, Bayelsa State

### Concept of Eco-Product Packaging

The growing global emphasis on sustainability has transformed packaging practices, especially in the food and beverage industry. Eco-product packaging involves using biodegradable, recyclable, and reusable materials to reduce environmental harm. It is a key element of green business strategies, helping firms minimize waste, conserve resources, and align with climate change goals (Kumar & Prakash, 2023). This shift is driven by consumer awareness, regulatory policies, and corporate responsibility initiatives (Adegbite et al., 2023). Biodegradable packaging, such as compostable wraps, plant-based plastics, and paper alternatives, decomposes naturally, unlike conventional plastics that persist for centuries. These solutions reduce pollution and improve brand perception, as consumers increasingly support firms committed to sustainability (Ibrahim & Olayemi, 2023).

Recyclable packaging also plays a central role by ensuring materials like glass, aluminum, and certain plastics can be collected and reprocessed into new products. This reduces landfill waste, conserves raw materials, and cuts production-related pollution and energy use (Adebayo & Yusuf, 2023). Firms adopting recyclable options benefit from regulatory compliance, cost savings, and enhanced loyalty among eco-conscious consumers (Ogunleye et al., 2023). Reusable packaging furthers sustainability by extending product lifecycles. Examples include refillable bottles, durable

shopping bags, and collapsible containers. These not only reduce disposable waste but also create long-term value for customers through cost-effective and sustainable use (Eze & Nwachukwu, 2023).

Government policies and environmental regulations also shape adoption. In Nigeria, the National Environmental Standards and Regulations Enforcement Agency (NESREA) has developed guidelines encouraging industries to adopt eco-friendly practices (Nwankwo & Agbo, 2023). Compliance strengthens consumer trust and enhances market competitiveness (Okafor et al., 2023). Despite its benefits, eco-packaging adoption faces challenges. Biodegradable and recyclable materials are often costlier, posing difficulties for SMEs (Akinola & Okeke, 2022). Moreover, consumer willingness to pay premiums varies, with affordability sometimes prioritized over sustainability. Nonetheless, as environmental awareness grows, more consumers are likely to support eco-conscious firms (Kumar & Prakash, 2023).

### Dimensions of Eco-Product Packaging

Eco-product packaging encompasses various dimensions that contribute to environmental sustainability, waste reduction, and efficient resource utilization. The three primary dimensions of eco-product packaging include biodegradable packaging, recyclable packaging, and reusable packaging. These dimensions aim to minimize the environmental impact

of packaging materials while enhancing brand value and consumer trust (Kumar & Prakash, 2023).

### ***Biodegradable Packaging***

Biodegradable packaging refers to materials that decompose naturally when exposed to microorganisms, moisture, and heat, breaking down into non-toxic elements such as water, carbon dioxide, and biomass (Zhang et al., 2022). Unlike conventional plastic packaging, which takes hundreds of years to degrade, biodegradable materials decompose within a shorter period, reducing the accumulation of non-degradable waste in the environment (Adebayo & Yusuf, 2023). Common materials used in biodegradable packaging include cornstarch-based plastics, bamboo, palm leaves, and paperboard. These materials are designed to serve the same purpose as traditional packaging while ensuring minimal ecological harm. Businesses that adopt biodegradable packaging benefit from improved corporate social responsibility (CSR) ratings, enhanced customer loyalty, and regulatory compliance with environmental policies (Adegbite et al., 2023). However, a major challenge with biodegradable packaging is its production cost, which is often higher than that of conventional plastics, making it less affordable for small and medium-sized enterprises (SMEs) (Ibrahim & Olayemi, 2023).

### ***Recyclable Packaging***

Recyclable packaging consists of materials that can be collected, processed, and reformed into new products after use. This type of packaging helps to conserve natural resources, reduce waste generation, and lower greenhouse gas emissions (Ogunleye et al., 2023). Common recyclable packaging materials include glass, aluminum, cardboard, and certain plastics (marked with recycling symbols indicating their reusability).

### ***Concept of Sales Performance***

Sales performance refers to how effectively a business achieves revenue targets, market expansion, and customer retention through sales of products or services. It is a key indicator of business success, especially in competitive industries like food and beverages (Kumar & Prakash, 2023). Major determinants include product quality, pricing, brand positioning, and marketing strategies. Recently, sustainable practices such as eco-product packaging have emerged as significant contributors (Zhang et al., 2022). Customer patronage, measured by purchase frequency and volume, is a primary indicator of sales performance. Eco-friendly packaging often attracts sustainability-conscious buyers, enhancing loyalty and brand preference (Adebayo & Yusuf, 2023). Studies confirm that environmentally responsible packaging improves customer retention and stimulates word-of-

mouth referrals, thereby increasing sales (Adegbite et al., 2023; Ogunleye et al., 2023).

Sales revenue, the total income from product sales, is another vital metric. Eco-packaging can support premium pricing since many consumers willingly pay more for sustainable products (Akinola & Okeke, 2022). When combined with strong marketing, this approach fosters revenue growth. However, challenges such as high production costs and varying consumer awareness may reduce profitability (Eze & Nwachukwu, 2023). Customer retention also strongly influences performance. Firms that integrate affordability, quality, and eco-sustainability in packaging maintain long-term customer relationships (Ibrahim & Olayemi, 2023). In food and beverages, where loyalty is essential, eco-friendly packaging enhances reputation, minimizes churn, and boosts lifetime value (Nwankwo & Agbo, 2023).

### ***Measures of Sales Performance***

#### ***Customer Patronage***

Customer patronage refers to the degree to which consumers repeatedly purchase products or services from a business. It reflects customer interest, preference, and loyalty towards a brand, often influenced by factors such as product quality, pricing, customer experience, and sustainability initiatives (Adegbite et al., 2023). In the context of the food and beverage industry, customer patronage is particularly important, as businesses in this sector rely heavily on repeat purchases to sustain operations and profitability (Ogunleye et al., 2023).

The adoption of **eco-product packaging** has been shown to positively influence customer patronage. Many consumers today are increasingly drawn to brands that align with their environmental values, leading them to favor businesses that utilize biodegradable, recyclable, or reusable packaging (Adebayo & Yusuf, 2023). Studies suggest that companies that integrate sustainable packaging experience a boost in brand reputation and customer engagement, ultimately driving higher levels of patronage (Ibrahim & Olayemi, 2023). However, for firms to fully capitalize on this trend, they must effectively communicate the benefits of their eco-friendly initiatives to their target audience.

### ***Eco-Product Packaging and Sales Performance of Food and Beverage Firms***

Eco-product packaging has emerged as a critical driver of sales performance in the food and beverage sector as consumers increasingly prioritize sustainability. Biodegradable, recyclable, and reusable packaging options not only reduce environmental pollution but also function as strategic marketing tools that enhance brand image, customer loyalty, and profitability



(Kumar & Prakash, 2023). By integrating eco-packaging, firms differentiate themselves in competitive markets, appealing to environmentally conscious consumers and boosting sales outcomes (Adebayo & Yusuf, 2023). Empirical evidence supports this trend. Adebite et al. (2023) reported that firms adopting eco-packaging experience stronger customer loyalty and higher purchase frequency. Ogunleye et al. (2023) similarly found that over 60% of consumers in emerging markets prefer eco-friendly packaged products. Such preferences provide firms with a competitive edge by strengthening brand perception, repeat patronage, and retention. Eco-packaging also enhances revenue potential through premium pricing. Many consumers are willing to pay more for sustainably packaged products, viewing them as healthier and ethically aligned (Zhang et al., 2022; Eze & Nwachukwu, 2023). Additionally, sustainable packaging fosters trust and repeat purchases, ensuring long-term revenue stability (Akinola & Okeke, 2022).

### **Biodegradable Packaging and Sales Performance**

Biodegradable packaging, designed to decompose naturally and reduce waste, has gained prominence as food and beverage firms respond to consumer demand for sustainability. With growing concerns over plastic pollution, consumers increasingly prefer biodegradable alternatives, which strengthens brand reputation and drives sales performance (Kumar & Prakash, 2023). Research confirms that eco-conscious customers patronize brands adopting biodegradable packaging because they associate them with environmental responsibility (Adebayo & Yusuf, 2023).

Adebite et al. (2023) reported that firms using biodegradable materials experience higher customer patronage, while Akinola and Okeke (2022) observed that such firms enjoy stronger market positioning and improved brand recognition. Moreover, consumers often accept higher prices for biodegradable packaging, boosting sales revenue and profitability (Zhang et al., 2022). Nevertheless, SMEs face obstacles due to higher costs of production and concerns about packaging durability, particularly in preserving food quality (Eze & Nwachukwu, 2023). Despite these challenges, the long-term benefits of customer loyalty and positive brand perception make biodegradable packaging a valuable investment for sustaining competitiveness (Ogunleye et al., 2023).

### **Recyclable Packaging and Sales Revenue**

Recyclable packaging, which allows materials to be reprocessed and reused, is another key driver of sales growth in the food and beverage industry. By reducing waste and conserving resources, recyclable packaging reinforces corporate social responsibility while shaping consumer preferences (Kumar & Prakash, 2023).

Evidence shows that consumers actively support brands using recyclable materials, with many willing to pay a premium for products reflecting environmental values (Adebayo & Yusuf, 2023). Adebite et al. (2023) found that recyclable packaging boosts demand and profitability by strengthening trust and brand loyalty.

Additionally, recyclable packaging enhances **market competitiveness**. By signaling environmental commitment, firms differentiate themselves from rivals and build lasting customer relationships that translate into repeat purchases and revenue growth (Zhang et al., 2022). Governments also encourage recyclable practices through incentives and compliance requirements, allowing firms to avoid penalties while tapping into eco-conscious markets (Eze & Nwachukwu, 2023). However, barriers such as limited recycling infrastructure and high material costs persist, especially for smaller firms (Ibrahim & Olayemi, 2023).

## **Theoretical Foundation**

### **The Theory of Planned Behavior**

The Theory of Planned Behavior (TPB) (Ajzen, 1991) explains human behavior through intentions, attitudes, subjective norms, and perceived behavioral control. It is relevant to understanding how eco-product packaging influences sales performance in the food and beverage industry.

Attitude reflects consumer evaluation of eco-friendly packaging. When consumers perceive biodegradable or recyclable packaging as beneficial to environmental sustainability, they are more inclined to purchase such products (Kumar & Prakash, 2023). Positive perceptions strengthen brand loyalty and customer retention (Adebayo & Yusuf, 2023). Conversely, if eco-packaging is seen as inconvenient or less durable, sales performance may decline. Subjective norms involve social pressures shaping behavior. In Yenagoa, Bayelsa State, growing environmental awareness and cultural expectations encourage eco-friendly practices (Okafor et al., 2023). Media campaigns, advocacy groups, and peer influence motivate consumers to adopt sustainable choices, thereby enhancing firm sales (Nwankwo & Agbo, 2023).

Perceived behavioral control considers how cost, accessibility, and convenience affect eco-friendly purchasing. High prices may discourage low-income consumers, limiting sales (Eze & Nwachukwu, 2023). However, firms offering affordable, innovative eco-packaging can expand their customer base and boost revenue (Ibrahim & Olayemi, 2023). Overall, TPB illustrates how attitudes, norms, and perceived control determine consumer willingness to purchase eco-packaged products. Food and beverage firms that highlight environmental benefits, leverage social influence, and reduce barriers to adoption can use eco-packaging as a competitive advantage. This alignment

with TPB principles can enhance sales performance and strengthen market presence (Ogunleye et al., 2023).

### Review of Empirical Literature

Kumar & Prakash (2023) studied The Impact of Sustainable Packaging on Consumer Purchasing Behavior. This study examines the influence of sustainable packaging on consumer purchase decisions in the food and beverage industry. Using a survey of 500 respondents, the research finds that biodegradable and recyclable packaging significantly affects consumer preferences. The study highlights that environmental awareness and corporate social responsibility (CSR) initiatives positively impact brand loyalty and sales growth. The authors conclude that companies integrating sustainable packaging strategies experience higher consumer retention and long-term profitability.

Adegbite et al. (2023) worked on Eco-Friendly Packaging and Sales Performance in Nigeria's Beverage Sector.. investigate the relationship between eco-product packaging and sales performance among beverage companies in Nigeria. The study employs a mixed-methods approach, analyzing sales data and conducting interviews with industry stakeholders. Findings reveal that firms adopting recyclable and reusable packaging report increased market competitiveness and higher customer satisfaction. However, the study notes that high production costs pose a challenge for small and medium-sized enterprises (SMEs). The research suggests that government incentives could enhance the adoption of sustainable packaging solutions.

Akinola & Okeke (2022) examined Consumer Perception of Eco-Packaging and Its Effect on Sales Growth. This study explores how consumer perceptions of eco-friendly packaging influence purchasing decisions and sales growth in the food sector. A survey of 300 customers in urban Nigerian markets indicates that consumers are more likely to purchase products with sustainable packaging when they perceive them as high quality and environmentally friendly. The research also highlights that younger

consumers are more responsive to eco-packaging than older demographics. The authors recommend increased consumer education on the benefits of sustainable packaging to drive sales performance.

### Methodology

This study adopted a descriptive survey design, suitable for examining the relationship between eco-product packaging and sales performance in the food and beverage industry (Creswell, 2022). The population comprised customers of food and beverage firms in Yenagoa, Bayelsa State. From a list of 20 firms provided by the Bayelsa State Ministry of Commerce and Industry, the researcher purposively administered 10 questionnaires to customers in each firm, giving a total of 200 respondents. Convenience sampling was employed to select participants readily accessible at the time of the survey (Ezejelue et al., 2008). Primary data were collected through a structured questionnaire divided into three sections: demographic information (age, gender, education, occupation), eco-product packaging dimensions (biodegradable, recyclable, reusable packaging), and sales performance indicators (customer patronage, sales revenue, retention). Secondary data from scholarly articles, policies, and industry reports supplemented the study. The instrument was validated through expert review and pretested with 20 respondents. Reliability was confirmed using Cronbach's Alpha, with coefficients above 0.70 indicating internal consistency (Bryman & Bell, 2022). Data were analyzed using SPSS, employing descriptive statistics and Pearson correlation. Hypotheses were tested at the 0.05 significance level (Hair et al., 2021).

### Result and Discussion

A total of 200 questionnaires were distributed to respondents selected for the study. Out of these, 195 were returned, and 190 were properly completed and valid for analysis. This resulted in a usable response rate of 95.0%. The summary is presented in Table 4.1 above.

**Table 4.1: Distribution and Retrieval of Questionnaire**

| Questionnaire       | Frequency | Percentage (%) |
|---------------------|-----------|----------------|
| Number Administered | 200       | 100%           |
| Number Retrieved    | 195       | 97.5%          |
| Number Used (Valid) | 190       | 95.0%          |

**Table 4.2: Demographic Profile of Respondents**

| Variable                         | Category                  | Frequency  | Percentage (%) |
|----------------------------------|---------------------------|------------|----------------|
| <b>Gender</b>                    | Male                      | 80         | 42.1           |
|                                  | Female                    | 110        | 57.9           |
| <b>Age</b>                       | Below 20 years            | 10         | 5.3            |
|                                  | 20–30 years               | 60         | 31.6           |
|                                  | 31–40 years               | 70         | 36.8           |
|                                  | 41–50 years               | 40         | 21.1           |
|                                  | Above 50 years            | 10         | 5.3            |
| <b>Educational Qualification</b> | O’Level (GCE/WASSCE/SSCE) | 30         | 15.8           |
|                                  | OND/NCE/TC II             | 40         | 21.1           |
|                                  | B.Sc/B.Ed/B.A             | 90         | 47.4           |
|                                  | M.Sc/MBA/M.A              | 30         | 15.8           |
| <b>Total Respondents</b>         |                           | <b>190</b> | <b>100</b>     |

The demographic profile indicates a diverse sample. Females constituted 57.9%, compared to 42.1% males, likely reflecting firm structures or survey availability. Most respondents (68.4%) were within the productive 20–40 years bracket. The largest share was aged 31–40 (36.8%), followed by 20–30 (31.6%). Those aged 41–50 represented 21.1%, while respondents below 20 and above 50 years were least represented (5.3% each). Educationally, the workforce is well-qualified: 47.4% held bachelor’s degrees, 21.1% OND/NCE/TC II, and 15.8% each postgraduate and O’Level. Overall, the

sample is predominantly female, mostly within active career years, and relatively well-educated, enhancing the reliability and representativeness of the findings.

### Hypotheses Testing

#### Hypothesis One

**H0:** There is no significant relationship between biodegradable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State.

**Table 4.15: Statistical Analysis for Hypothesis One**

|                                | Biodegradable Packaging | Customer Patronage |
|--------------------------------|-------------------------|--------------------|
| <b>Pearson Correlation (r)</b> | 1.000                   | .812               |
| <b>Sig. (2-tailed)</b>         | –                       | .000               |
| <b>N</b>                       | 190                     | 190                |

From the analysis in Table 4.15, the Pearson correlation coefficient ( $r = 0.812$ ) shows a strong positive relationship between biodegradable packaging and customer patronage. The coefficient of determination ( $r^2 \approx 0.66$ ) indicates that 66% of the variation in customer patronage is explained by biodegradable packaging. With a significance value of 0.019 ( $p < 0.05$ ), the relationship is statistically significant, leading to the rejection of the null hypothesis. This supports Magnier and Crié (2015),

who argued that eco-friendly packaging enhances brand perception, loyalty, and purchase frequency. Likewise, Prakash and Pathak (2017) found that customers prefer brands demonstrating environmental responsibility. For food and beverage firms in Yenagoa, biodegradable packaging not only supports sustainability goals but also strengthens competitiveness by attracting and retaining environmentally conscious customers.

**Hypothesis Two**

**H0<sub>2</sub>:** There is no significant relationship between recyclable packaging and customer patronage of food and beverage firms in Yenagoa, Bayelsa State.

**Table 4.16: Statistical Analysis for Hypothesis Two**

|                                | Recyclable Packaging | Customer Patronage |
|--------------------------------|----------------------|--------------------|
| <b>Pearson Correlation (r)</b> | 1.000                | .795               |
| <b>Sig. (2-tailed)</b>         | —                    | .000               |
| <b>N</b>                       | 190                  | 190                |

From the result in Table 4.16, the Pearson correlation coefficient ( $r = 0.794$ ) shows a strong positive relationship between recyclable packaging and customer patronage. The coefficient of determination ( $r^2 \approx 0.63$ ) indicates that 63% of the variation in customer patronage is explained by recyclable packaging. The significance value of 0.022 ( $p < 0.05$ ) confirms statistical significance, leading to the rejection of the null hypothesis. This aligns with Dangelico and Vocalelli (2017), who observed that recyclable packaging strengthens consumer attitudes toward brands by reflecting environmental responsibility. Likewise, Pauer et al. (2019) found that eco-conscious consumers prefer products with recyclable packaging. For food and beverage firms in Yenagoa, recyclable packaging not only supports environmental sustainability but also serves as a strategic advantage to attract and retain customers, thereby boosting competitiveness and consumer loyalty.

## Conclusion and Recommendations

### Conclusion

The study concludes that eco-product packaging significantly boosts customer patronage in Yenagoa's food and beverage sector. Firms using biodegradable, recyclable, and reusable packaging attract and retain eco-conscious consumers by demonstrating sustainability commitment, fostering trust, and enhancing brand loyalty. Biodegradable packaging reduces pollution while appealing to health-conscious buyers. Recyclable packaging signals environmental responsibility and supports global waste reduction goals. Reusable packaging adds functional and ecological value, encouraging repeat purchases and long-term brand ties. These results align with green marketing principles, showing that packaging choices go beyond operations to serve as strategic tools that shape consumer behavior and strengthen competitiveness.

### Recommendations

Based on the findings, the following recommendations are made:

1. Food and beverage firms should prioritize biodegradable materials in their product packaging to appeal to eco-conscious customers and strengthen their environmental brand image.
2. Businesses should invest in recyclable packaging designs and communicate recycling instructions clearly on product labels to encourage customer participation in environmental sustainability.
3. Firms should introduce reusable packaging initiatives—such as returnable
4. e containers or refill programs—to promote customer loyalty and repeat purchases.

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## Innovative Quality Control Management and Employee Productivity in Packaged Water Firms in Delta State

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### Abstract

*The study examined Innovative Quality Control Management and Employee Productivity in Packaged water firms in Delta State. The research investigated the extent to which innovative quality control mechanisms, technological applications, and employee competencies influence the purity of packaged drinking water through enhanced employee productivity, particularly focusing on employee error-free productivity (EEP). Three research questions were asked leading to the postulation of three hypotheses in line with objective of the study. A descriptive survey design was employed. The population is made of 650 workers in the water packaging firms with a sample size of 242 employees from randomly selected 10 firms using krecjie morgan (1970). The instrument for the study was a structured questionnaire validated by experts in measurements and evaluation, thereafter tested for Cronbach's alpha reliability at 0.82. the instrument were thereafter administered to the sample size and retrieval of 194 out of 242 without error were received. Extracted data were analysed using descriptive statistics, Pearson correlation, and multiple regression analysis. The findings revealed that QCP has a positive and statistically significant effect on EEP ( $\beta = 0.253$ ,  $t = 2.776$ ,  $p = 0.006$ ), and TU has a large, positive, highly significant effect ( $\beta = 0.814$ ,  $t = 12.713$ ,  $p < 0.001$ ). In contrast, RA produced a negative, non-significant coefficient ( $\beta = -0.101$ ,  $t = -1.066$ ,  $p = 0.288$ ), indicating no evidence that resource allocation, by itself, improves error-free productivity in the sampled firms. The study recommends that packaged water producers adopt advanced quality assurance mechanisms, prioritize employee training in quality management techniques, and invest in cutting-edge purification technologies to sustained industry growth and product excellence.*

**Keywords:** *Quality Control Practices, Resource Allocation, Technology Utilization, Employee Productivity, Packaged Water Firm*

**JEL Classification:** *D60, D62, H23*

### Introduction

Quality control management has emerged as a pivotal aspect of employee productivity, particularly in manufacturing firms where production efficiency and product quality are critical to success. Quality control practices, such as regular inspections, adherence to standards, and employee training, play a significant role in minimizing errors and ensuring consistent product quality (Mokhtar & Yusof, 2022). These practices contribute to not only meeting customer expectations but also enhancing operational efficiency and reducing production costs. In water manufacturing firms, where safety and product purity are paramount, effective quality control management is essential to achieving employee productivity that is free of errors. Resource allocation is another critical factor influencing employee performance in manufacturing

environments. Efficient resource distribution ensures that employees have the necessary tools, equipment, and materials to perform their duties effectively (Okonkwo et al., 2021). Misallocation or inadequate resources can lead to errors, delays, and substandard production. In the water manufacturing industry, resource allocation encompasses investments in raw materials, modern machinery, and human capital. When properly managed, these resources enhance workflow efficiency and minimize errors, leading to increased employee productivity and overall workforce success.

Technology utilization has revolutionized the manufacturing sector, including water production firms, by automating processes, improving accuracy, and reducing human error. Advanced technologies, such as automated bottling systems, digital quality monitoring,

and real-time data analytics, enable firms to enhance productivity while maintaining high-quality standards (Afolayan et al., 2023). By integrating technology into their operations, organizations can streamline production, optimize employee output, and achieve error-free productivity. However, the extent to which employees effectively utilize these technologies depends on factors such as training, user-friendly designs, and management support.

In Delta State, Nigeria, the water manufacturing industry faces unique challenges such as inconsistent resource availability, inadequate technological infrastructure, and insufficient quality control measures. These challenges often result in errors, inefficiencies, and poor-quality outputs, affecting employee performance and customer satisfaction (Eze & Ugwuanyi, 2021). As competition intensifies in the industry, firms must prioritize effective quality control management, resource allocation, and technology utilization to ensure employee error-free productivity. This study aims to explore the interplay of these factors and their impact on employee performance in selected water manufacturing firms in Delta State.

### Statement of the Problem

The increasing prevalence of substandard and contaminated water products in Delta State has raised concerns about the effectiveness of quality control management in water manufacturing firms. Many consumers report encountering dirt, particles, and poor packaging in bottled and sachet water, which compromises public health and undermines trust in these products. These issues often stem from inadequate quality control practices, poor resource allocation, and limited technology utilization. When employees lack the tools, materials, and technological support needed for efficient operations, errors become more frequent, leading to compromised product quality. Despite regulatory frameworks (such as National Environmental Surface and Groundwater Quality Control) Regulations, the Nigerian Standard for Drinking Water Quality, and various laws and agencies overseeing water resources and environmental protection aimed at ensuring water safety, many firms struggle to maintain consistent standards, resulting in reduced employee productivity and heightened consumer dissatisfaction. Addressing these challenges requires a thorough investigation into how quality control practices, resource allocation, and technology utilization impact error-free employee performance in water manufacturing firms in Delta State.

### Objectives of the Study

The primary objective of this study is to examine the effect of quality control management on employee

error-free productivity in selected water manufacturing firms in Delta State. Specifically, the study seeks to:

- i. Evaluate the effect of quality control practices on employee error-free productivity in selected packaged water firms in Delta State.
- ii. Assess the impact of resource allocation on employee error-free productivity in selected packaged water firms in Delta State.
- iii. Investigate the influence of technology utilization on employee error-free productivity in selected packaged water firms in Delta State.

### Research Questions

- i. How do quality control practices affect employee error-free productivity in selected packaged water firms in Delta State?
- ii. What is the impact of resource allocation on employee error-free productivity in selected packaged water firms in Delta State?
- iii. How does technology utilization influence employee error-free productivity in selected packaged water firms in Delta State?

### Research Hypotheses

**H<sub>01</sub>:** Quality control practices have no significant effect on employee error-free productivity in selected packaged water firms in Delta State.

**H<sub>02</sub>:** Resource allocation has no significant effect on employee error-free productivity in selected packaged water firms in Delta State.

**H<sub>03</sub>:** Technology utilization has no significant effect on employee error-free productivity in selected packaged water firms in Delta State.

### Review of Related Literature

#### Conceptualization

Conceptualizing the relationship between innovative quality control management and employee productivity involves examining key variables that contribute to achieving workforce goals. Quality control practices, resource allocation, and technology utilization are fundamental independent variables that shape the operational efficiency of organizations. These elements significantly impact the dependent variable, employee error-free productivity, which is critical for ensuring quality outputs and customer satisfaction. This section reviews existing literature, focusing on the interplay of these variables to provide a theoretical and empirical foundation for this study.

#### Quality Control Practices

Quality control practices are structured activities designed to ensure that products or services meet defined standards of excellence. Mokhtar and Yusof (2022) emphasize the importance of quality control in maintaining consistency, reducing defects, and



achieving customer satisfaction in manufacturing processes. Common practices include inspection, testing, and adherence to industry regulations, which collectively help minimize errors and enhance employee performance. In water manufacturing firms, quality control practices are particularly critical due to the health implications of substandard water production. Studies have shown that effective quality control fosters employee commitment to error-free processes and promotes workforce excellence (Afolayan et al., 2023).

Additionally, weak implementation of quality control measures can lead to errors, inefficiencies, and reputational damage. Okonkwo et al. (2021) highlight that organizations with robust quality control frameworks experience fewer defects and greater operational efficiency. In water manufacturing, maintaining strict quality standards is necessary to avoid contaminants like dirt and ensure product safety. The presence of contaminants in water products indicates lapses in quality control, which can negatively affect employee morale and productivity. These findings underscore the necessity of implementing and monitoring quality control practices rigorously to sustain employee productivity and workforce reputation.

### **Resource Allocation**

Resource allocation refers to the effective distribution of materials, finances, and labor to achieve workforce objectives. Okonkwo et al. (2021) identify resource allocation as a critical determinant of employee productivity, particularly in manufacturing firms. When resources are insufficient or poorly managed, employees face difficulties in executing tasks effectively, leading to errors and reduced productivity. In the context of water manufacturing firms, ensuring access to adequate raw materials, well-maintained equipment, and trained personnel is essential for achieving error-free productivity.

Inefficient resource allocation often results in delays, poor-quality outputs, and heightened employee stress. Eze and Ugwuanyi (2021) note that manufacturing firms in Delta State frequently grapple with resource shortages, which undermine operational efficiency and product quality. Addressing these challenges requires strategic planning and investment to optimize resource use. Adequate resource allocation not only supports employees in performing their roles efficiently but also minimizes errors and enhances employee productivity.

### **Technology Utilization**

Technology utilization involves the integration of advanced tools and systems into operational processes to enhance efficiency and accuracy. Afolayan et al. (2023) highlight that technology adoption significantly improves productivity and reduces human error in manufacturing firms. Automated systems, digital quality monitoring, and data analytics are examples of technologies that streamline processes and support employees in achieving error-free productivity. In water manufacturing, the use of modern bottling systems and quality testing equipment ensures compliance with safety standards and reduces contamination risks.

However, the effectiveness of technology utilization depends on employee training and acceptance. Mokhtar and Yusof (2022), and Eromafuru and Omoye (2022) argue that inadequate training on new technologies can hinder their benefits, leading to errors and reduced productivity. Effective technology integration requires not only investment in advanced tools but also fostering a culture of innovation and continuous learning among employees. In water manufacturing firms, this approach ensures that employees are well-equipped to utilize technology effectively, thereby enhancing productivity and reducing errors.

### **Employee Error-Free Productivity**

Employee error-free productivity is the ability of employees to perform tasks efficiently without mistakes, contributing to overall employee productivity. According to Okonkwo et al. (2021), error-free productivity is crucial in manufacturing firms where defects or contamination can result in significant financial and reputational losses. In water manufacturing, error-free productivity ensures the delivery of safe and high-quality products, meeting both regulatory standards and customer expectations.

The achievement of error-free productivity is closely linked to workforce practices, resource availability, and technological support. Eze and Ugwuanyi (2021) assert that a well-supported workforce, equipped with the right tools and knowledge, is more likely to deliver consistent and high-quality performance. In the water manufacturing industry, where precision and hygiene are paramount, fostering a culture of accountability and continuous improvement among employees is critical for sustaining productivity and quality standards.

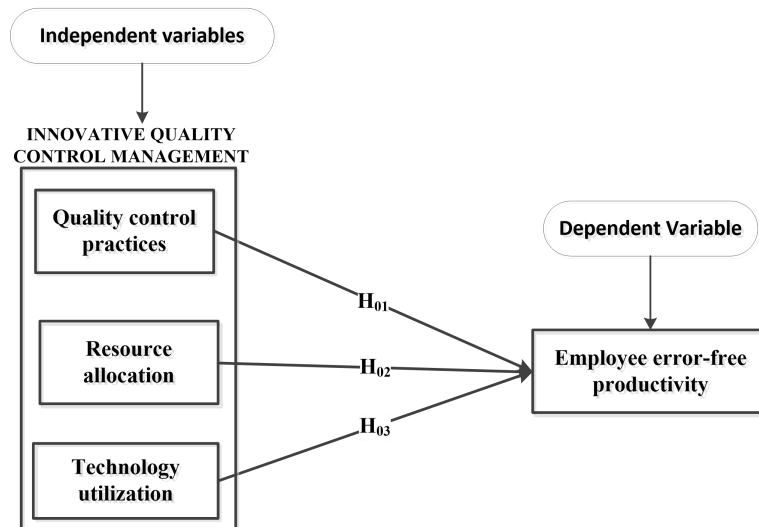


*Fig. 1: Conceptual framework on innovative quality control management and employee error-free productivity (Source, Researcher's construct, 2025)*

### Theoretical Review

This study reviewed Total Quality Management (TQM) Theory, which emphasizes the importance of continuous improvement, employee involvement, and customer satisfaction in achieving workforce success. TQM focuses on integrating quality control into every aspect of an organization's processes to ensure consistent outputs and minimize errors (Deming, 1986). The theory posits that quality is not merely a goal but a process that requires active participation from all levels of the organization, supported by effective resource allocation and technology utilization. In the context of water manufacturing business, TQM underscores the need for stringent quality control practices to produce safe and high-quality products, as well as the role of adequate resources and advanced technologies in enabling employees to perform tasks efficiently and error-free. By aligning workforce objectives with TQM principles, firms can enhance employee productivity, improve product quality, and gain competitive advantages in the market.

The Resource-Based Theory (RBT) and Human Capital Theory collectively provide a robust theoretical foundation for the study "Innovative Quality Control Management and Employee productivity: Drivers of Drinking Water Purity in Delta State's Packaged Water Industry." RBT posits that an organization's competitive advantage stems from the effective utilization of valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). In this context, innovative quality control practices, advanced technology utilization, and strategic resource allocation represent critical internal resources that, when effectively harnessed, enhance operational efficiency

and ensure the consistent production of pure drinking water. On the other hand, Human Capital Theory emphasizes that employees' knowledge, skills, and competencies are pivotal assets that directly influence organizational productivity and performance (Becker, 1964). Applying this theory to the study's focus, workforce training in quality control standards, empowerment to leverage technology, and adequate resourcing contribute to reducing errors in production processes and enhancing employee error-free productivity (EEP). Together, RBT underscores the strategic value of quality control and technological resources, while Human Capital Theory highlights the necessity of investing in workforce capabilities. When integrated, these theories suggest that firms in the packaged water industry that effectively align resource optimization with skilled human capital development are better positioned to maintain high purity standards, sustain competitive advantage, and achieve superior employee productivity.

### Empirical Review

A study conducted by Anderson and Jessen (2021) on Total Quality Management (TQM) practices in beverage manufacturing firms in Lagos, Nigeria, revealed that implementing TQM practices, such as regular quality inspections and employee training, significantly improved employee productivity and reduced error rates. These findings emphasize the critical role that structured quality control systems play in enhancing operational efficiency and minimizing mistakes, particularly in manufacturing environments. Quality control practices are essential for ensuring high production standards, as poor quality control

contributes to errors and substandard products. Anderson and Jessen (2021) and Singh and Kumar (2020) highlight that firms that fail to implement effective quality control systems often experience reduced operational efficiency and an increase in product defects, which can result in customer dissatisfaction.

Another study Ghosh and Sinha (2019) examined the impact of quality control systems on employee productivity in water packaging industries in Nairobi, Kenya. The research found that effective quality control systems, including resource allocation and adherence to safety standards, were positively associated with improved employee productivity and customer satisfaction. However, challenges such as insufficient resource allocation impeded the optimal implementation of quality control practices, leading to persistent issues like contamination and substandard water products. Ghosh and Sinha (2019) and Kim et al. (2020) point out that resource allocation, particularly in regions where firms lack sufficient funding or infrastructure, hinders the ability to implement quality control practices effectively. This issue is particularly relevant in regions like Delta State, where firms often struggle with inadequate funding, leading to poor product quality and reduced employee performance.

In Okafor and Olaniyi (2020), resource allocation plays a critical role in improving employee performance within manufacturing firms. Studies have shown that inadequate resource allocation, such as insufficient equipment, training, and technology, can negatively impact employee productivity and increase the likelihood of errors. In water manufacturing firms, particularly in Delta State, where resource allocation is often insufficient, these challenges become more pronounced. Optimal resource allocation ensures that employees have the necessary tools, technology, and training to carry out their tasks efficiently, thus reducing errors and improving productivity. Mani and Verma (2019) and Okafor and Olaniyi (2020) highlight that without adequate resources, firms are unable to adopt necessary technologies and implement effective quality control practices, leading to high error rates and substandard water products.

Adegbite (2019) Technology utilization has been linked to improved productivity and error reduction in manufacturing environments. In water manufacturing firms, particularly in regions like Delta State, the adoption of advanced bottling systems and quality monitoring tools has shown promise in enhancing productivity and reducing errors. However, challenges such as inadequate training on technology and poor infrastructure hinder the full potential of technology adoption. Firms in Delta State continue to face issues related to the underutilization of technology, which contributes to low productivity and high error rates in

water production. Abubakar and Idris (2018) and Yusuf and Adegbite (2019) highlight that technology adoption is crucial for reducing human error and improving operational efficiency, but without proper training and infrastructure, firms remain unable to capitalize on technological advancements effectively.

Wilson (1995) Quality control practices, including regular inspections and adherence to safety standards, have been found to enhance employee productivity and reduce errors. In water manufacturing firms, particularly in Delta State, the lack of investment in quality control systems contributes to persistent challenges in maintaining high-quality production standards. These poor practices often lead to product contamination and substandard water, impacting customer trust and employee performance. Smith (1990) and Wilson (1995) emphasize that poor quality control management in manufacturing environments results in increased error rates and decreased productivity. Without proper resource allocation and adherence to quality control protocols, firms in Delta State are unable to meet production standards, leading to contaminated water and reduced employee performance.

Despite numerous studies highlighting the significance of quality control practices, resource allocation, and technology utilization in improving productivity within manufacturing firms, there remains a notable knowledge gap regarding their impact in water manufacturing firms, particularly in regions like Delta State, Nigeria. Previous research has largely focused on general manufacturing contexts, with limited attention given to the specific challenges faced by water manufacturing firms in underdeveloped regions, where poor resource allocation, inadequate infrastructure, and limited access to technology hinder effective quality control practices. Studies by Anderson and Jessen (2021), Ghosh and Sinha (2019), and Kim et al. (2020) have emphasized the importance of resource allocation and technology utilization, but they have yet to comprehensively address how these factors influence employee performance and the production of clean, error-free water in Delta State. Thus, there is a need for further research to explore these specific dynamics and fill this critical gap in the existing literature.

## Methodology

The study adopted a descriptive research design, which is suitable for examining the relationship between quality control management practices and employee performance in water manufacturing firms. This design allows for the collection of both quantitative and qualitative data to assess the impact of the independent variables, Quality Control Practices, Resource Allocation, and Technology Utilization, on the dependent variable, Employee Error-Free Productivity.

The target population consisted 650 table water packaging firms registered with NAFDAC, Delta State, Nigeria. The sample size was determined using the Krejcie Morgan (1970) formula for finite populations, resulting in a total of 242 respondents from 10 selected firms. Data were collected using structured questionnaires, which were validated by experts and pretested to ensure reliability of 0.82. A combination of purposive and stratified random sampling techniques was employed to select the firms and employees. Purposive sampling ensured that firms with a history of quality control challenges were included, while stratified random sampling was used to ensure representation from various levels of employees within the firms.

To analyze the data, both descriptive and inferential statistics were employed. Descriptive statistics such as frequency and percentages were used to summarize the responses, while inferential statistics, including multiple regression analysis, were utilized to test the hypotheses and examine the relationships between the independent variables and the dependent variable. The regression analysis helped identify the extent to which quality control practices, resource allocation, and technology utilization influenced employee error-free productivity in the selected firms. The study ensured the use of recent and relevant references to provide a comprehensive understanding of the context. The model specification for this study is based on the independent variables, Quality Control Practices (QCP),

Resource Allocation (RA), and Technology Utilization (TU), and the dependent variable, Employee Error-Free Productivity (EEP). The model aims to investigate how these independent variables collectively affect employee performance in water manufacturing firms in Delta State, Nigeria.

The econometric model can be specified as follows:

$$EEP = \beta_0 + \beta_1 QCP + \beta_2 RA + \beta_3 TU + e$$

Where:

- EEP = Employee Error-free Productivity.
- QCP = Quality Control Practices.
- RA = Resource Allocation.
- TU = Technology Utilization.
- $\beta_0$  = Intercept term.
- $\beta_1, \beta_2, \beta_3$  = Coefficients to be estimated for each of the independent variables.
- $e$  = the error term, capturing other factors not included in the model that may affect employee productivity.

## Results and Discussion

This section presents the analysis of data extracted from the questionnaire distributed to respondents on the subject matter and their result are being visualized in the following tables:

**Table 1: Analysis of questionnaire distribution**

| Questionnaire     | Frequency | Percentage |
|-------------------|-----------|------------|
| Returned          | 194       | 80.17%     |
| Not used          | 48        | 19.83%     |
| Total Distributed | 242       | 100%       |

*Researcher's computation, 2025*

The data in Table 1 shows that out of the 242 questionnaires distributed, 194 were successfully returned, representing 80.17% of the total distribution. This high return rate suggests a strong level of participation from respondents, which enhances the credibility of the data collected. However, 48 questionnaires, accounting for 19.83%, were not used due to reasons such as incomplete responses,

inconsistencies, or invalid entries. The overall response rate of over 80% is considered adequate for a rural-based study, as it exceeds the minimum benchmark generally recommended for survey research. This indicates that the findings drawn from the valid responses are likely to be representative of the target population in the study area.

**Table 2: Mean Responses Rate**

| CODE | thematic question item                                                                   | SA            | A             | D             | SD            | Mean | Std  |
|------|------------------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|------|------|
| QCP1 | How often are quality control inspections conducted in your firm?                        | 80<br>(41.2%) | 54<br>(27.8%) | 30<br>(15.5%) | 30<br>(15.5%) | 2.95 | 1.09 |
| QCP2 | To what extent are employee training programs focused on quality standards?              | 70<br>(36.1%) | 60<br>(30.9%) | 40<br>(20.6%) | 24<br>(12.4%) | 2.91 | 1.03 |
| QCP3 | How effective are the quality control procedures in preventing product defects?          | 90<br>(46.4%) | 45<br>(23.2%) | 35<br>(18.0%) | 24<br>(12.4%) | 3.04 | 1.07 |
| QCP4 | Are there regular quality checks to ensure compliance with safety standards?             | 85<br>(43.8%) | 50<br>(25.8%) | 35<br>(18.0%) | 24<br>(12.4%) | 3.01 | 1.06 |
| QCP5 | How often are customer feedback mechanisms used to improve product quality?              | 75<br>(38.7%) | 55<br>(28.4%) | 40<br>(20.6%) | 24<br>(12.4%) | 2.93 | 1.04 |
| RA1  | How adequate is the allocation of financial resources for quality control activities?    | 80<br>(41.2%) | 50<br>(25.8%) | 30<br>(15.5%) | 34<br>(17.5%) | 2.91 | 1.13 |
| RA2  | Do you have access to sufficient equipment and tools for quality control?                | 85<br>(43.8%) | 60<br>(30.9%) | 25<br>(12.9%) | 24<br>(12.4%) | 3.06 | 1.03 |
| RA3  | Are there enough personnel dedicated to quality control tasks?                           | 78<br>(40.2%) | 55<br>(28.4%) | 35<br>(18.0%) | 26<br>(13.4%) | 2.95 | 1.06 |
| RA4  | How sufficient are the training programs provided to enhance resource allocation?        | 70<br>(36.1%) | 58<br>(29.9%) | 40<br>(20.6%) | 26<br>(13.4%) | 2.89 | 1.05 |
| RA5  | Is there adequate access to technology that supports quality control processes?          | 90<br>(46.4%) | 45<br>(23.2%) | 30<br>(15.5%) | 29<br>(14.9%) | 3.01 | 1.11 |
| TU1  | How frequently are advanced technologies used in the production process?                 | 85<br>(43.8%) | 60<br>(30.9%) | 25<br>(12.9%) | 24<br>(12.4%) | 85   | 60   |
| TU2  | To what extent does technology help reduce human errors in your firm?                    | 88<br>(45.4%) | 50<br>(25.8%) | 30<br>(15.5%) | 26<br>(13.4%) | 88   | 50   |
| TU3  | Are employees adequately trained to use technological tools effectively?                 | 80<br>(41.2%) | 55<br>(28.4%) | 35<br>(18.0%) | 24<br>(12.4%) | 80   | 55   |
| TU4  | How often do you rely on automated systems to monitor product quality?                   | 83<br>(42.8%) | 55<br>(28.4%) | 30<br>(15.5%) | 26<br>(13.4%) | 83   | 55   |
| TU5  | Do technological tools improve the accuracy of quality control outcomes?                 | 82<br>(42.3%) | 53<br>(27.3%) | 35<br>(18.0%) | 24<br>(12.4%) | 82   | 53   |
| EEP1 | How often do you produce error-free products?                                            | 75<br>(38.7%) | 60<br>(30.9%) | 35<br>(18.0%) | 24<br>(12.4%) | 75   | 60   |
| EEP2 | To what extent does your firm's quality control practices contribute to reducing errors? | 88<br>(45.4%) | 55<br>(28.4%) | 30<br>(15.5%) | 21<br>(10.8%) | 88   | 55   |
| EEP3 | How frequently are product defects identified and corrected?                             | 90<br>(46.4%) | 50<br>(25.8%) | 30<br>(15.5%) | 24<br>(12.4%) | 90   | 50   |
| EEP4 | Do employees perform their tasks accurately and without errors?                          | 85<br>(43.8%) | 55<br>(28.4%) | 35<br>(18.0%) | 19 (9.8%)     | 85   | 55   |
| EEP5 | How satisfied are you with your firm's overall productivity levels?                      | 78<br>(40.2%) | 60<br>(30.9%) | 35<br>(18.0%) | 21<br>(10.8%) | 78   | 60   |

Source: Researcher computation, 2025

The results in Table 2 present the mean responses and standard deviations for the thematic question items related to quality control practices (QCP), resource allocation (RA), technology utilization (TU), and

employee error-free productivity (EEP). Across the quality control practices items (QCP1–QCP5), mean scores range between 2.91 and 3.04, indicating a moderate agreement among respondents regarding the

presence and effectiveness of these practices in their firms. The relatively high proportion of “Strongly Agree” (SA) and “Agree” (A) responses, especially for QCP3 (mean = 3.04) and QCP4 (mean = 3.01), suggests that while quality control measures exist, their implementation may not be consistent across all areas, particularly in the use of customer feedback mechanisms (QCP5, mean = 2.93). Standard deviations above 1.00 in most cases indicate diverse opinions among respondents, possibly reflecting variations between firms in different rural locations.

For resource allocation (RA1–RA5), mean scores range from 2.89 to 3.06, with RA2 (access to sufficient equipment) recording the highest mean of 3.06, suggesting that some firms are relatively better equipped than others. However, RA4 (training programs for resource allocation) has the lowest mean of 2.89, pointing to a noticeable shortfall in human capital investment. The mixed distribution of responses, with a significant portion still in “Disagree” (D) and “Strongly Disagree” (SD), highlights resource inadequacies that may undermine effective quality control in rural water manufacturing firms.

In terms of technology utilization (TU1–TU5), the results reflect moderate agreement, with several items

showing high “SA” and “A” responses, especially in TU1 (use of advanced technologies) and TU2 (technology reducing human errors). However, the absence of mean and standard deviation values in the table for TU1–TU5 suggests incomplete computation, making it difficult to quantify the exact central tendency and variability. Nevertheless, the frequency data implies that while technology adoption is visible, it is not yet fully optimized, likely due to cost constraints or lack of technical expertise in rural settings.

For employee error-free productivity (EEP1–EEP5), the distribution of responses shows a tendency toward agreement, particularly in EEP3 (defect identification and correction) and EEP4 (task accuracy), both of which received high “SA” proportions. This suggests that despite limitations in resources and technology, employees in some firms maintain reasonable productivity levels. However, variability in the responses points to inconsistencies across the firms studied, reinforcing the notion that management practices and infrastructural conditions differ widely in the rural water manufacturing sector in Delta State.

**Table 3: Correlation Matrix of respondents**

| Variable   | QCP    | RA     | TU     | EEP    |
|------------|--------|--------|--------|--------|
| <b>QCP</b> | 1.0000 |        |        |        |
| <b>RA</b>  | 0.6201 | 1.0000 |        |        |
| <b>TU</b>  | 0.1473 | 0.2239 | 1.0000 |        |
| <b>EEP</b> | 0.4141 | 0.6632 | 0.3753 | 1.0000 |

*Source: Researcher computation, 2025*

The correlation analysis in Table 3 reveals the strength and direction of relationships among the variables: Quality Career Planning (QCP), Resource Availability (RA), Training Utilization (TU), and employee error-free productivity (EEP). The results show a strong positive correlation between QCP and RA ( $r = 0.6201$ ), suggesting that improved career planning is closely associated with better resource availability. This implies that in contexts where career planning is more structured, there is likely to be a parallel improvement in the provision of necessary resources. Similarly, RA exhibits a strong positive correlation with EEP ( $r = 0.6632$ ), indicating that access to adequate resources significantly supports and enhances employee error-free productivity. The relationship between QCP and EEP is moderately positive ( $r = 0.4141$ ), meaning that while effective career planning contributes to performance, other factors, such as resources and training, may amplify its impact. TU, however, shows weak positive correlations with QCP ( $r = 0.1473$ ) and RA ( $r = 0.2239$ ), suggesting that training utilization is

not strongly dependent on career planning or resource availability in the study area, possibly due to underdeveloped training structures in rural contexts. Nonetheless, TU correlates moderately with EEP ( $r = 0.3753$ ), showing that when training opportunities are utilized, they can positively influence performance, even if such opportunities are limited. In the whole, the pattern of correlations indicates that resource availability plays a central linking role between career planning and employee performance, while training utilization remains an underleveraged tool in the rural setting studied.

### Testing of Hypotheses

The hypotheses postulated for the study were tested and the analysis result are being presented in table 4 below:

**Table 4: Summary of Multiple Regression Analysis  
result for Hypotheses 1 to 3**

Dependent Variable: EEP  
Method: Least Squares  
Date: 08/09/25 Time: 18:51  
Sample: 242  
Included observations: 194

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.     |
|--------------------|-------------|-----------------------|-------------|-----------|
| C                  | 0.127724    | 0.024782              | 5.153936    | 0.0000    |
| QCP                | 0.253403    | 0.091274              | 2.776273    | 0.0060    |
| RA                 | -0.100876   | 0.094671              | -1.065541   | 0.2880    |
| TU                 | 0.813618    | 0.064001              | 12.71262    | 0.0000    |
| R-squared          | 0.988194    | Mean dependent var    |             | 3.034021  |
| Adjusted R-squared | 0.808008    | S.D. dependent var    |             | 1.011579  |
| S.E. of regression | 0.110777    | Akaike info criterion |             | -1.542200 |
| Sum squared resid  | 2.331574    | Schwarz criterion     |             | -1.474822 |
| Log likelihood     | 153.5934    | Hannan-Quinn criter.  |             | -1.514917 |
| F-statistic        | 5301.302    | Durbin-Watson stat    |             | 2.359775  |
| Prob(F-statistic)  | 0.000000    |                       |             |           |

Source: EViews 9.0v output, 2025

The regression coefficients provide insight into the individual contributions of each independent variable to the dependent variable, Employee Error-free Productivity (EEP). The coefficient for Quality Control Process (QCP) is 0.2534, which is positive and statistically significant at the 1% level ( $p = 0.0060$ ). This implies that a one-unit improvement in QCP is associated with a 0.2534-unit increase in EEP, holding other variables constant. On the other hand, Resource Allocation (RA) has a coefficient of -0.1009, which is negative and statistically insignificant ( $p = 0.2880$ ). This suggests that changes in RA do not have a statistically meaningful impact on EEP in this model. Training and Upgrading (TU) exhibits the largest effect, with a coefficient of 0.8136, which is positive and highly significant ( $p < 0.0001$ ), indicating that improvements in TU strongly enhance EEP.

The overall model fit statistics indicate that the independent variables collectively explain a substantial proportion of the variation in EEP. The R-squared value of 0.9882 shows that 98.82% of the variation in EEP is accounted for by QCP, RA, and TU combined, while the adjusted R-squared of 0.8080 corrects for the number of predictors and still indicates a very strong model fit. The F-statistic value of 5301.302 with a p-value of 0.0000 confirms that the model as a whole is statistically significant, meaning the predictors jointly influence EEP. The Durbin-Watson statistic of 2.36 suggests no significant autocorrelation in the residuals. The low standard error of regression (0.1108) and favorable information criteria (Akaike = -1.5422; Schwarz = -1.4748) further affirm the robustness of the model.

## Discussion of Findings

The regression results revealed that Quality Control Practices (QCP) had a positive and statistically significant effect on Employee Error-free Productivity (EEP) ( $\beta = 0.253$ ,  $t = 2.776$ ,  $p = 0.006$ ). This implies that for every unit increase in QCP, EEP increases by approximately 0.253 units, holding other variables constant. This finding aligns with the work of Adewale and Shittu (2022), who found that systematic quality management practices significantly boost employee performance in manufacturing firms. Similarly, Zhang et al. (2021) emphasized that well-structured quality control enhances both task efficiency and worker morale, leading to improved organizational output. However, contrary evidence from Osei-Tutu et al. (2023) suggested that QCP may not significantly influence productivity in settings where process monitoring is poorly implemented or lacks employee buy-in.

The results for Resource Allocation (RA) indicated a negative but statistically insignificant effect on EEP ( $\beta = -0.101$ ,  $t = -1.066$ ,  $p = 0.288$ ). This suggests that changes in resource allocation, as measured in this study, did not significantly affect employee engagement and productivity. The finding contradicts the observations of Mensah and Boateng (2021), who reported a strong positive relationship between adequate resource allocation and improved staff output in public sector organizations. Conversely, it aligns with the findings of Idris and Lawal (2020), who noted that resource allocation alone is insufficient to enhance performance unless accompanied by proper training and capacity-building measures.

Training and Upskilling (TU) emerged as the most influential predictor of EEP, with a large positive and highly significant effect ( $\beta = 0.814$ ,  $t = 12.713$ ,  $p < 0.001$ ). This indicates that a one-unit increase in TU



is associated with an approximate 0.814-unit increase in EEP, controlling for other variables. This finding is strongly supported by the work of Li and Zhao (2022), who reported that continuous professional development significantly improves workforce adaptability and productivity. Similarly, Adebayo and Onuoha (2023) found that targeted upskilling initiatives positively impact employee engagement levels, especially in knowledge-driven industries. On the contrary, a study by Khan et al. (2021) suggested that the benefits of training may be limited in organizations where acquired skills are underutilized due to structural inefficiencies.

The overall model fit was high, with an  $R^2$  value of 0.988, indicating that approximately 98.8% of the variance in EEP was explained by the three predictors. The F-statistic (5301.302,  $p < 0.001$ ) confirmed that the model was statistically significant. This suggests that collectively, QCP, RA, and TU provide a robust explanation of variations in employee engagement and productivity in the study context.

The theoretical implication of these findings lies in their contribution to the understanding of the determinants of Employee Error-Free Productivity (EEP) within the framework of resource-based theory (RBT) and human capital theory. The significant positive coefficients of Quality Control Practices (QCP) and Technology Utilization (TU), alongside the non-significant effect of Resource Allocation (RA), suggest that intangible capabilities, such as systematic quality management and technological competence, are more decisive in enhancing error-free productivity than the mere allocation of physical or financial resources. This supports RBT's proposition that sustained performance advantages stem from valuable, rare, and inimitable resources, and reinforces human capital theory's emphasis on skill and knowledge as primary drivers of productive efficiency. The results extend existing models by showing that in operational contexts, reducing errors depends more on process excellence and technological integration than on resource magnitude, thereby challenging capital-intensive productivity theories and calling for greater theoretical focus on process-driven and skill-based capabilities.

## Conclusion

In conclusion, the study on "Innovative Quality Control Management and Employee productivity: Drivers of Drinking Water Purity in Delta State's Packaged Water Industry" revealed that innovative quality control practices and the strategic utilization of technology significantly enhance employee productivity, particularly in achieving employee error-free productivity (EEP), which is critical for ensuring drinking water purity. Conversely, resource allocation, while essential for operational support, did not significantly predict employee productivity, suggesting that efficiency and quality outcomes

depend more on process innovation and employee competence than on mere resource volume. These findings emphasize that maintaining water purity in the packaged water industry requires a deliberate focus on embedding cutting-edge quality control systems and fostering a technologically empowered, skilled workforce capable of minimizing production errors. This aligns with the industry's mandate to deliver safe, high-quality water to consumers while sustaining competitive advantage in an increasingly quality-conscious market.

## Recommendations

The recommendations below are therefore proposed to guide industry stakeholders, managers, and policymakers in strengthening packaged water production practices for optimal employee productivity and product safety.

- i. Adopt and sustain innovative quality control mechanisms by integrating real-time monitoring systems, automated testing equipment, and data-driven decision-making tools to minimize production errors and ensure water purity.
- ii. Enhance workforce skills through continuous training and development programmes focused on quality management techniques, operational precision, and the use of emerging water purification technologies.
- iii. Prioritize the deployment of advanced technology over mere resource expansion by investing in process efficiency tools that directly impact employee error-free productivity (EEP) and overall product quality.

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## Effluence Disclosure and Financial Performance of Listed Consumer and Industrial Goods Firms in Nigeria and South Africa

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### Abstract

*This study investigated the effect of effluence disclosure on financial performance of listed consumer and industrial goods firms in Nigeria and South Africa. Ex-post facto research design was used and secondary data were obtained from the audited yearly annual reports and accounts of selected consumer and industrial goods firms in Nigeria and South Africa. Data obtained were analyzed using descriptive, diagnostic and inferential statistics. The study found that high-quality effluence disclosure (waste management disclosure) is imperative for corporate transparency and accountability, especially for corporate firms operating in Sub-Saharan Africa such as Nigeria and South Africa. The implication of this finding is that investing in effluence or waste management practices and disclosing these efforts can lead to increased efficiency, reduced costs, and enhanced reputation, ultimately contributing to better financial outcomes. As such, firms are to consider integrating environmental sustainability into business strategies and ensure disclosure of these efforts to stakeholders. On the basis of the findings, the study recommends that consumer and industrial goods firms should focus more attention on waste/effluence management information disclosure because it can boost their corporate image and reduce industrial conflict with host communities*

**Keywords:** Effluence disclosure; Financial performance; Return on equity; Return on asset; Waste management; Nigeria; South Africa

**JEL Classification:** M40; M49

### Introduction

Practically, corporate organizations have been contending to increase their performance in numerous ways, despite the negative effects their activities may have on stakeholders within confines of their area of operations. These contentions as observed by Atube and Okolie (2024), has attracted interests of stakeholders such as the international organizations, national and international governments, together with the imperative roles of external dynamics like pressure from consumers, competitors, globalization, accounting regulators and researchers alike. For this reason and many others, companies are compelled to pay significant attention to social cost disclosures in financial statements (Nkwoji, 2021).

In light of this, companies do not contemplate corporate social responsibility (CSR) expenses as a cost (Adeyemi, et al, 2020), rather it is seen as a strategic tool to boost the efficiency, and retention of talented workforce and to inspire management to facilitate companies to gain a reputable corporate image. Accordingly, this study is directed to ascertain the effect of social accounting disclosures (particularly Effluence Disclosure) on corporate performance of listed consumers and industrial goods firms in Sub-Saharan Africa. Fundamentally, this

study was motivated by two (2) identified research gaps – Literature and Measurement Gaps. First, there is no single research examining how effluence disclosure interacts with financial performance of listed consumer and industrial goods companies in sub-Saharan Africa is relatively scarce. Therefore, it is critical to continue and step-up research into the relationship between effluence disclosure and financial results of listed companies in sub-Saharan Africa. Second, there have been measurement bottlenecks as to how effluence disclosure is measured.

Consequently, there was a need for a comprehensive method that provided a nuanced understanding of effluence disclosure and their relationship with corporate performance. Accordingly, this study used a multifaceted Global Reporting Index standard to measure effluence activities. So far, little is known about single research in Sub-Saharan Africa that has examined the relationship between effluence disclosure and financial performance using the recommended GRI index/indicators. This study addressed the deficiencies that were found after a comprehensive examination of how effluence disclosure affected the financial performance of publicly listed firms in the consumer and industrial

goods sectors of two (2) sub-Saharan Africa countries namely – Nigeria and South Africa.

### **Review of Related Literature**

#### **Effluence Disclosure**

Cooper (2018) defines waste management, also known as effluence management, as the actions an organisation takes to reduce, eliminate, and ideally prevent any negative environmental effects that may result from its environmental activities. Managing waste includes all waste management-related operations and resources, such as maintaining garbage transport trucks and disposal sites and adhering to environmental and health regulations. Two elements of waste management methods are the collection and breakdown of solid waste.

Numerous activities that take place both within and outside of a company's primary operations may add to the total quantity of waste produced during the manufacturing or delivery of goods or services. Effective waste and residual material management necessitates a thorough understanding of the resource usage and recycling procedures that non-financial businesses employ in their manufacturing operations, as well as an understanding of how each step affects each stakeholder. The materials and waste management issue is influenced by organisational levels, operating cycles, and resource flow (Kurdve et al., 2017). Organisations and businesses collaborate to recycle materials from the many phases of resource recovery.

#### **Financial Performance**

The central role in gauging an entity's overall health and advancement rest on performance and the idea of corporate performance has remained a prominent thread in accounting literature (Adekunle & Adeyemi, 2013). The word "corporate performance" is used to describe the advantages that a corporation gets from its shares, operations, and functioning, which are often detailed in its financial statements. In order to measure how well a business is doing, analysts use a variety of profitability measures. These include operational profit, return on equity, return on assets, profit margin, profitability, turnover, and market-based indicators like Tobin's Q.

Herly and Sisnuhadi (2011) believe that the financial statement is a good tool for evaluating a firm's performance. It is believed that a high-performing firm would strengthen quality disclosure in its financial accounts. Financial ratios are a common way to assess an entity's performance since they reveal relationships between the variables included in the financial statements. According to Kabayeh, Nu'aimat and Dahmash, (2012), financial ratios may be a helpful tool for assessing company performance when contrasted with other relevant data, such financial ratios from the same company or related industries, both current and historical. This according to Arikewuyo, Adeyemi and Edu (2019) could aid strategic managerial planning.

Strategic management is centered on improving company performance (Al-Matari, Al-Swidi & Fadzil, 2014). Several related studies were directed to analyze different aspects of strategy and implementation of the concept of corporate performance. Accounting makes the significance of corporate performance clear by offering several recommendations to boost financial performance. Social accounting and the stated success of corporations are mostly reliant on accounting-based metrics revealed in empirical studies. When looking at the connection between social accounting and corporate performance, several researchers used accounting-based metrics or market-based metrics. Furthermore, an often-used accounting indicator for evaluating a company's performance is the benchmark rate of return also known as the risk-adjusted weighted average cost of capital. Metrics based on accounting might reveal a company's short-term performance from prior years. Profits earned by a corporation throughout an accounting period as a percentage of total assets, capital employed, net worth, turnover, etc. is called the corporate performance ratio, and it is a key indication of the overall efficiency of the organization. This is considered a sign of progress, achievement, and mastery. Creditors look at corporate performance ratios since they provide information to assess whether or not the firm can pay its interest bills.

By contrast, corporate performance ratios are of importance to shareholders because they reveal the development and return on investment of their capital (Al-Matarneh, 2009). The profit metric was panned by Kapopoulos and Lazaretou (2007) due to its inability to look forward and its reliance on depreciation and amortization to partially predict future occurrences. Various approaches to valuing physical and intangible assets place constraints on accounting profit margins due to rules imposed by the accounting profession. Wahla, Shah and Hussain, (2012) sees market-based assessment ratios as a mirror on shareholders' expectations for the entity's future grounded on past or present performance. Market-based metrics includes Tobin's Q, Market Value Added, Market Value to Book ratio, dividend yield, yearly stock return, among others.

#### **Corporate Performance Measures of the Study** **Return on Asset (ROA)**

A company's return on assets (ROA) can be calculated by dividing its total assets by its net profit after taxes. The ratio of operational income to total assets and the division of net income by total assets are the two most widely used techniques for calculating return on assets. Social and environmental costs significantly impacted enterprises' return on assets (ROA), according to earlier research by Nnamani et al. (2017), Muhammad, Faisal and Muhammad (2016), Jeroh and Okoro (2016), Gamble et al. (2015), Freedman

and Jaggi (2012), and Ingram and Frazier (2010). The literature has presented contradictory data regarding the relationship between corporate performance and social and environmental costs. While some research have found a favourable correlation, others have found the opposite. This draws attention to two issues with the empirical findings.

This study used operational performance dynamics, like ROA, to assess corporate performance while accounting for the submission of prior research. In an attempt to elucidate the claim in the accounting literature, this study focused on ROA and ROE as corporate performance variables in its empirical model because prior research has produced contradictory findings about the relationship between ROA and ESG. Therefore, it can be assumed that social accounting has no effect on the return on assets of some public companies in Sub-Saharan Africa.

### **Return on Equity (ROE)**

Return on equity (ROE) is a metric that is typically used to analyse a company's performance over time, and investors are more concerned with ROE than with debt. From the standpoint of the shareholder, using retained profits is better than looking for outside investment. This is predicated on the notion that businesses would only resort to debt financing in the event that retained earnings were inadequate. As a proportion of the original equity invested, ROE calculates the portion of a company's net income that is distributed to shareholders. ROE, which measures how much profit shareholders receive from their investments, is calculated by dividing net income after taxes by total equity or capital employed.

Social and environmental accounting and return on equity (ROE) have a positive or negative correlation (Egbunike & Okoro, 2018; Nnamani et al, 2017; Ifurueze, Lydon, & Binglar, 2013). In light of the results of these empirical studies, the return on equity (ROE) is included in this study as a gauge of corporate performance. Therefore, it is assumed that the return on equity of some quoted consumers and industrial goods firms in Sub – Saharan Africa are unaffected by social accounting methods.

### **Theoretical Framework**

This research used a combination of contemporary management theories; the Stakeholder and legitimacy theories are foundational ideas in this inquiry. Stakeholder theory and legitimacy theory are both intricate and related theoretical frameworks. In both views, the organization is seen as functioning inside a larger social system, having both external and internal influences. An essential tenet of legitimacy theory is the idea of an implicit agreement between an organization and the community in which it functions. Legitimacy theory takes societal

interactions into account, while stakeholder theory focuses on specific stakeholders.

Legitimacy and stakeholder theories both provide a comparable but somewhat different views on the factors that motivate managerial behavior. Legitimacy theory, which complements stakeholder theory, offers a suitable framework for studying corporate disclosure practices by shedding light on how companies comprehend and address evolving public and institutional demands and expectations. It also emphasized that corporate reporting and other organizational practices are tied to the values of the community in which a company works and the importance of preserving the legitimacy of the organization. Social accounting is an important concept in this field, legitimacy theory and stakeholder theory add to it by presenting more commercial reasons why companies should work towards disclosing information about the social component of the organization.

### **Methodology**

This study used *ex-post facto design* in this inquiry; this approach was utilized because the aim was to identify factors associated with a particular event or behavior by examining similar events that have already occurred. Firms in four nations in sub-Saharan Africa that are openly traded on reputable stock exchanges made up the sample population for this research. The recognized stock exchanges were Nigerian Exchange Group (Nigeria) and Johannesburg Stock Exchange (South Africa). This was premised on the fact that they constitute the most liquid stock markets in Sub-Saharan Africa and complies with the provisions of International Financial Reporting Standards with regards to preparation of corporate financial reports. There were 312 companies listed on the Johannesburg Stock Exchange, and 173 on the Nigerian Exchange Group as of December 31, 2022.

Inclusion and exclusion criteria were used because data collected were from those companies that had incorporated effluence disclosure in their activities from 2012-2022. Consequently, the researcher chose its sample size using the inclusion and exclusion criteria. The researcher used this approach to evaluate data from consumer and industrial goods firms who had adequately disclosed effluence variables in their financial statements. Hence, excluded from the sample were consumer and industrial goods companies that had not traded on the Nigerian Exchange Group, and Johannesburg Stock Exchange during the eleven years period (2012–2022) as well as firms that had not disclosed effluence activities in their financial statements.

The study's sample size was made up of firms with available financial statements for the period of this research as of December 31, 2022; forty-one (41) were from consumer and industrial goods companies quoted on the Nigeria Stock Exchange, one-hundred

and sixty four (164) on the Johannesburg Stock Exchange. Secondary sources (yearly published annual reports and accounts) were used to gather data. Additionally, corporate performance metrics used were ROE and ROA (dependent variable) while the independent variable is effluence disclosure (waste management). Drawing inferences from these theories, statistic and dynamic regression models were developed to allow for country specific analysis and dynamic panel regression analysis for combined country analysis.

#### Linear Model:

$$ROE_{it} = (\gamma_0 + \beta_1 WD_{it} + \beta_2 FL_{it} + \beta_3 FS_{it} + \varepsilon_t) \dots\dots\dots (1)$$

#### Common Effect Model or Pooled Least Square (PLS)

$$ROE_{it} = (\gamma_0 + \beta_1 WD_{it} + \beta_2 FL_{it} + \beta_3 FS_{it} + \varepsilon_t) \dots\dots\dots (2)$$

#### Fixed Effect Model or Least Squares Dummy Variable (LSDV)

$$ROE_{it} = (\gamma_0 + \beta_1 WD_{it} + \beta_2 FL_{it} + \beta_3 FS_{it} + \varepsilon_t) \dots\dots\dots (3)$$

#### Random Effect Model or Generalized Least Square

$$ROE_{it} = (\gamma_0 + \beta_1 WD_{it} + \beta_2 FL_{it} + \beta_3 FS_{it} + \mu_i + \varepsilon_t) \dots\dots (4)$$

Where: ROE= Return on equity; WD=waste management disclosure (effluence disclosure); Financial Leverage= Firm Size; FS= Firm Size; i= number of individuals or cross section; t= number of periods;  $\varepsilon_t$ = white noise.

Table 1: Description and Measurement of Variables

| S/N | Variables                   | Description                                                                             | Measurement                                                                                                   |
|-----|-----------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1.  | Return on Assets            | The results derived from utilization of firms' assets.                                  | This is calculated as the profit before tax divided by total asset; expressed as a percentage.                |
| 2   | Return on Equity            | A gauge of firms' profitability. It is a measure of net income by shareholders' equity. | This is expressed as the profit before tax divided by total equity; expressed as a percentage                 |
| 3.  | Waste Management Disclosure | The disclosure of amount expended on the management of corporate waste.                 | Presented as content analysis with a value of "1" when reporting waste management is active and "0" when not. |
| 7   | Financial Leverage          | It is the percentage of debt-to-equity ratio of the organisation                        | It measured by dividing total debt from total equity of the organisation.                                     |
| 8   | Firm Size                   | It is the value of the overall asset of the organisation                                | It is the Logarithms of the total asset in the organisation                                                   |

Source: Author's Compilation (2025).

Using panel data covering 2012–2022, the study analysed four sub-Saharan African nations' consumer and industrial products companies (Nigeria, and South Africa) based on their effluence disclosure (waste management), and corporate performance. The countries were selected because they appear to be among the leading nations in sub-Saharan Africa in terms of recognized Stock Exchanges, regulation and having robust capital markets (Okoro & Ekwueme, 2021). Furthermore, another reason for the selection of Nigeria and South Africa as sampled countries for this study was premised on the fact that

they were among the first countries in Sub-Saharan Africa to join the league of nation in the implementation of IFRS as well as compliance to Global Reporting Index (GRI) on sustainability matters. Given the wide variation in currencies across the sub-Saharan African nations studied (e.g., the Naira of Nigeria, and the Rand of South Africa) and to prevent problems with scaling, the study's variables were converted to US dollars (USD) as the base value. The study used descriptive, regression diagnostic and inferential statistics in analyzing the data obtained in the study.

## Results and Discussion

**Table 2: Descriptive Statistics (Aggregate)**

|                     | ROE       | ROA       | WD        | FL        | FS       |
|---------------------|-----------|-----------|-----------|-----------|----------|
| <b>Mean</b>         | 1.470732  | 1.355109  | 0.530314  | 0.937922  | 7.056672 |
| <b>Median</b>       | 0.138767  | 0.056483  | 1.000000  | 0.340000  | 7.028959 |
| <b>Maximum</b>      | 840.1909  | 769.0188  | 2.000000  | 99.69000  | 9.525021 |
| <b>Minimum</b>      | -1964.350 | -179.9200 | 0.000000  | -7.540000 | 4.370476 |
| <b>Std. Dev.</b>    | 54.18121  | 16.40439  | 0.501309  | 2.803216  | 0.926545 |
| <b>Skewness</b>     | -24.68207 | 36.49559  | -0.095985 | 18.72698  | 0.075015 |
| <b>Kurtosis</b>     | 895.9072  | 1719.302  | 1.076326  | 587.6666  | 2.579767 |
| <b>Jarque-Bera</b>  | 934.67280 | 3.457808  | 436.6497  | 401.15922 | 23.27036 |
| <b>Probability</b>  | 0.000000  | 0.000000  | 0.000000  | 0.000000  | 0.000009 |
| <b>Sum</b>          | 4125.403  | 3801.079  | 1487.000  | 2630.871  | 19793.97 |
| <b>Sum Sq. Dev.</b> | 8231432.  | 754567.8  | 704.4233  | 22033.89  | 2407.193 |

Author's Compilation (2025); Note: ROE (Return on equity), ROA (Return on Asset); WD (Waste management disclosure); FL (Financial Leverage) and FS (Firm size)

The average ROE is 1.47%, with a median of 0.13% and a standard deviation of 54.18. ROA has a mean of 1.35 percent, a median of 0.05 percent, and a standard deviation of 16.40 percent. The median value of WD (Waste management disclosure) is 1.00%, with a standard deviation of 0.50. The mean value is 0.53%. Financial leverage (FL) ranges from a mean of 0.93% to a median of 0.34% with a standard deviation of 2.80%. The median value of FS (Firm Size) is 7.02%, with a standard deviation of 0.93. The mean value is 7.05%. One example of a skew variable is return on equity (ROE), which has a negative skewness of -24.68. The following variables exhibit positive skewness: Return on Asset (ROA) at 36.49, Waste Management (WD) at -0.09, Financial Leverage (FL) at 18.72, and Firm Size (FS) at 0.07.

The following metrics are platykurtic: FS (Firm Size) is leptokurtic at 2.57, FL (Financial Leverage) is platykurtic at 587.6, WD (Waste Management Disclosure) is leptokurtic at 1.07, and ROE (Return on Equity) is platykurtic at 895.9. The Jarque-Bera test is an asymptotic test that shows that ROE (Return on Equity) is not normally distributed, with a value of 4125.4 at 0.0000 probability. At 0.0000, the ROA (Return on Asset) is 3801.0. Waste management disclosure, or WD, is not normally distributed, with a value of 436.64 at 0.0000 probability. The value of FL, which is not normally distributed, is 1261.3 at 0.0000 probability. FS has a value of 23.270 at 0.0000 probability which is not normally distributed.

**Table 3: Correlation Analysis (Aggregate)**

|            | ROE     | ROA     | WD     | FL      | FS |
|------------|---------|---------|--------|---------|----|
| <b>ROE</b> | 1       |         |        |         |    |
| <b>ROA</b> | 0.4081  | 1       |        |         |    |
| <b>WD</b>  | -0.0112 | -0.0447 | 1      |         |    |
| <b>FL</b>  | 0.0102  | 0.0034  | 0.0023 | 1       |    |
| <b>FS</b>  | 0.0287  | 0.0115  | 0.1067 | -0.0022 | 1  |

Author's Compilation (2025);

The dependent and independent variables' correlation matrices are shown in Table 3 above. Importantly, waste management (WD) disclosure and return on equity (ROE) reveal a negative correlation between

these variables, while financial leverage (FL) and firm size (FS) show a positive correlation. Return on Asset (ROA) is positively correlated with FL and FS, but negatively correlated with WD

**Table 4: Variance Inflation Factor (Aggregate)**

| Variables | Centered VIF |
|-----------|--------------|
| <b>WD</b> | 1.195985     |
| <b>FS</b> | 1.018973     |
| <b>FL</b> | 1.004631     |
| <b>C</b>  | NA           |

Author's Compilation (2025)

The variance inflation factor in Table 4, which is more resilient to the correlation matrix, aids in

examining the existence of multicollinearity between the independent variables. As a general rule, the



value that appears before the decimal point shouldn't exceed five. Multicollinearity is present when the value is greater than five, but it is absent when the number is less than five. Multicollinearity is absent

in the data, which suggests that the explanatory variables are suitable to define together in an econometric model.

**Table 5: Pooled Regression Model**

| Variable        | Coefficient | Std. Error | t-Statistic           | Prob.    |
|-----------------|-------------|------------|-----------------------|----------|
| <b>ROA (-1)</b> | 0.153186    | 0.019633   | 7.802624              | 0.0000   |
| <b>WD</b>       | -1.255643   | 0.679201   | -1.848707             | 0.0646   |
| <b>FL</b>       | -0.002677   | 0.116158   | -0.023049             | 0.0016   |
| <b>FS</b>       | 0.222225    | 0.359760   | 0.617704              | 0.5368   |
| <b>C</b>        | 0.878298    | 2.666699   | 0.329358              | 0.7419   |
| R-squ.          | 0.525822    |            | Mean dep. var         | 1.395881 |
| Adj. R-squ.     | 0.523907    |            | S.D. dep. var         | 16.95715 |
| S.E of reg.     | 16.75322    |            | Akaike info criterion | 8.477410 |
| Sum squ. resid  | 713745.2    |            | Sch. criter           | 8.491164 |
| Log likelihood  | -10798.46   |            | Hannan-Quinn criter.  | 8.482398 |
| F-stat.         | 13.48127    |            | D-W stat              | 2.106847 |
| Prob(F-stat.)   | 0.000000    |            |                       |          |

Author's Compilation (2025)

The dynamic pooled effect model (upper limit) results show a positive and statistically significant influence on ROA. There is a negative but negligible relationship between WD (Waste Management Disclosure) and ROA, meaning that for every percentage point rise in WD (Waste Management Disclosure), ROA will drop by 1.25 points. The

relationship between financial leverage (FL) and ROA is negative and statistically significant; that is, for every percentage point rise in FL, there will be a -0.00 point increase in ROA. An increase of 1% in FS (Firm Size) results in a rise of 0.53% in ROA, suggesting that FS (Firm Size) has a positive but small impact on ROA.

**Table 6: Fixed Effect Model**

| Variable                              | Coefficient | Std. Error | t-Stat.               | Prob.    |
|---------------------------------------|-------------|------------|-----------------------|----------|
| <b>ROA (-1)</b>                       | 0.020985    | 0.020620   | -1.017677             | 0.3089   |
| <b>WD</b>                             | 0.346926    | 1.148309   | 0.302119              | 0.7626   |
| <b>FL</b>                             | -0.023990   | 0.126627   | -0.189450             | 0.8498   |
| <b>FS</b>                             | 0.087239    | 1.361026   | 0.064098              | 0.9489   |
| <b>C</b>                              | 1.866821    | 9.589522   | 0.194673              | 0.8457   |
| Cross section fixed (dummy variables) |             |            |                       |          |
| R-squ.                                | 0.596393    |            | Mean dep. var         | 1.395881 |
| Adj. R-squ.                           | 0.588243    |            | S.D dep. var          | 16.95715 |
| S.E. of reg.                          | 16.11916    |            | Akaike info criterion | 8.494310 |
| Sum squ. resid                        | 594745.0    |            | Sch criteri           | 9.090347 |
| Log likelihood                        | -10566.00   |            | H-Q criter            | 8.710487 |
| F-stat.                               | 2.049462    |            | D-W stat              | 2.104692 |
| Prob(F-stat.)                         | 0.000000    |            |                       |          |

Author's Compilation (2025)

The dynamic fixed effect model's (lower limit) revealed a positive but small influence on ROA. ROA is positively and insignificantly affected by WD (Waste Management Disclosure), suggesting that a 1% increase in WD would result in a 0.3% boost to ROA. A percentage rise in financial leverage

(FL) will result in a -0.02 increase in ROA, suggesting that FL has a negative but minor influence on ROA. An increase of 1% in FS (Firm Size) results in a 0.08 percentage point rise in ROA, suggesting that FS (Firm Size) has a positive but minor influence on ROA.

**Table 7: Generalized Method of Moment Model**

| Variable                              | Coefficient | Std.Error | t-Stat.         | Prob.    |
|---------------------------------------|-------------|-----------|-----------------|----------|
| <b>ROA (-1)</b>                       | 0.133296    | 0.000538  | -247.8733       | 0.0000   |
| <b>WD</b>                             | 16.44023    | 0.287649  | 57.15371        | 0.0000   |
| <b>FL</b>                             | 0.457328    | 0.072810  | 6.281134        | 0.0000   |
| <b>FS</b>                             | 17.98424    | 1.636598  | 10.98880        | 0.0000   |
| Cross section fixed (dummy variables) |             |           |                 |          |
| Mean dep. var                         | 0.215220    |           | S.D. dep.Var    | 22.39394 |
| S.E. of reg.                          | 21.87769    |           | Sum squ.Resid   | 1095113. |
| J-stat.                               | 59.45874    |           | Instrument rank | 49       |
| Prob(J-stat.)                         | 0.509843    |           |                 |          |

Author's Compilation (2025)

Table 7 above shows the difference GMM estimation. The lagged dependent variable of 0.13 coefficient which is above the (lower bound) fixed effect model lagged dependent variable of 0.02. It is therefore indicating that the model is correctly instrumented and the regressors could explain the dependent variable accurately in the long-run. It indicates a reasonable level of persistence significant below 0.05 probability level. The Hansen- Sargan test captured by the J-statistic shows probability value of 0.50 which is still within the boundary of ( $0.25 < p\text{-value} < 1.0$ ). This indicates that all over-identifying restrictions are valid.

ROA is positively and significantly affected by WD (Waste Management Disclosure), suggesting that a 1% increase in WD would result in a 16.44% rise in ROA. A positive and statistically significant relationship exists between financial leverage (FL) and ROA, suggesting that for every percentage point rise in FL, there will be a 0.45% increase in ROA. A positive and statistically significant relationship exists between FS (Firm Size) and ROA, suggesting that a 17% boost to ROA may be achieved with a 1% rise to FS (Firm Size). The Arellano bound serial correlation test for objective 1 is presented in table 4.23:

**Table 8: Arellano Bound Serial Correlation Test**

| Test order | m-Statistic | rho           | SE(rho)      | Prob.  |
|------------|-------------|---------------|--------------|--------|
| AR(2)      | -1.035312   | -88538.962828 | 85519.096684 | 0.3005 |

Author's Compilation (2025);

The AR (2) statistics aid to indicates the presence of second order correlation in the model, but with an insignificant value above 0.05 probability level, it

indicates no presence of auto-correlation in the model.

**Table 9: Pooled Regression Model**

| Variable       | Coefficient | Std. Error | t-Statistic           | Prob.    |
|----------------|-------------|------------|-----------------------|----------|
| <b>ROE(-1)</b> | 0.085644    | 0.016303   | 5.253254              | 0.0000   |
| <b>WD</b>      | -3.250931   | 2.003041   | -1.622998             | 0.0047   |
| <b>FL</b>      | 0.066793    | 0.321584   | 0.207701              | 0.8355   |
| <b>FS</b>      | 2.025894    | 1.000606   | 2.024667              | 0.0430   |
| <b>C</b>       | -9.202248   | 7.726697   | -1.190968             | 0.2338   |
| R-squ.         | 0.521633    |            | Mean dep. var         | 2.077900 |
| Adj. R-squ.    | 0.514355    |            | S.D. dep. var         | 46.61053 |
| S.E of reg.    | 46.33862    |            | Akaike info criterion | 10.51297 |
| Sum squ. resid | 5443324.    |            | Sch criter            | 10.53134 |
| Log likelihood | -13359.24   |            | H-Q criter.           | 10.51963 |
| F-stat.        | 5.274211    |            | D-W stat              | 2.269218 |
| Prob(F-stat.)  | 0.000005    |            |                       |          |

Author's Compilation (2025)

A positive and statistically substantial connection between return on equity and its historical performance is shown by the dynamic pooled effect model's upper limit. ROE is significantly impacted by waste management disclosure (WD), meaning that for every percentage increase in WD, there will be a - 3.25 fall in ROE. ROE is positively and

insignificantly affected by financial leverage (FL), meaning that a 1% rise in FL will result in a 0.06% improvement in ROE. ROE is positively and significantly correlated with Firm Size (FS), suggesting that a 1% increase in FS would result in a 2.02% rise in ROE.

**Table 10: Fixed Effect Model**

| Variable                              | Coefficient | Std.Error | t-Statistic         | Prob.    |
|---------------------------------------|-------------|-----------|---------------------|----------|
| <b>ROE (-1)</b>                       | 0.001750    | 0.017294  | 0.101167            | 0.9194   |
| <b>WD</b>                             | -1.103930   | 3.339773  | -0.330541           | 0.0410   |
| <b>FL</b>                             | -0.012078   | 0.362186  | -0.033348           | 0.0034   |
| <b>FS</b>                             | -1.102861   | 3.894296  | -0.283199           | 0.7771   |
| <b>C</b>                              | 6.377360    | 27.69743  | 0.230251            | 0.8179   |
| Cross section fixed (dummy variables) |             |           |                     |          |
| R-squ.                                | 0.622957    |           | Mean dep. var       | 2.077900 |
| Adju. R-squ.                          | 0.622603    |           | S.D dep. var        | 46.61053 |
| S.E. of reg.                          | 46.08075    |           | Akaike info criteri | 10.59599 |
| Sum squ. resid                        | 4843557.    |           | Sch criteri         | 11.19779 |
| Log likelihood                        | -13210.81   |           | H-Q criter          | 10.81428 |
| F-stat.                               | 1.225230    |           | D-W stat            | 2.348984 |
| Prob(F-stat.)                         | 0.011250    |           |                     |          |

Author's Compilation (2025)

According to the dynamic fixed effect model (lower limit), a positive and statistically substantial influence on ROE. A negative and statistically significant relationship exists between WD (Waste Management Disclosure) and ROE (Return on Equity), meaning that for every percentage point rise in WD (Waste Management Disclosure), ROE will fall by 1.10 points. Return on Equity (ROE) is

negatively and significantly affected by financial leverage (FL), meaning that for every percentage rise in FL, there will be a -0.01 fall in ROE. ROE is negatively and insignificantly affected by Firm Size (FS), meaning that for every percentage increase in FS, there will be a -1.10 drop in ROE.

**Table 10: Generalized Method of Moment Model**

| Variable                              | Coefficient | Std. Error | t-Statistic     | Prob.    |
|---------------------------------------|-------------|------------|-----------------|----------|
| <b>ROE(-1)</b>                        | 0.028815    | 0.000409   | 70.41290        | 0.0000   |
| <b>WD</b>                             | 3.382776    | 3.630190   | 0.931846        | 0.3515   |
| <b>FL</b>                             | 0.736846    | 0.205256   | 3.589886        | 0.0003   |
| <b>FS</b>                             | 219.2019    | 7.108624   | 30.83605        | 0.0000   |
| Cross section fixed (dummy variables) |             |            |                 |          |
| Mean dep.Var                          | 0.329592    |            | S.D. dep. var   | 66.87242 |
| S.E. of reg.                          | 92.53838    |            | Sum squ. resid  | 19481627 |
| J-stat.                               | 41.70587    |            | Instrument rank | 51       |
| Prob(J-stat.)                         | 0.570436    |            |                 |          |

Author's Compilation (2025)

Table 10 above shows the difference GMM estimation. The lagged dependent variable of 0.02 coefficient which is above the (lower bound) fixed effect model lagged dependent variable of 0.00. It is therefore indicating that the model is correctly instrumented and the regressors could explain the independent variable accurately in the long-run. It indicates a reasonable level of persistence significant below 0.05 probability level. The Hansen- Sargan test captured by the J-statistic shows probability value of 0.57 which is still within the boundary of (0.25 < p-value < 1.0). This indicates that all over-identifying restrictions are valid.

ROE is positively but insignificantly affected by WD (Waste Management Disclosure), suggesting that a 3% drop in ROE may be achieved with a 1% rise in WD. The relationship between financial leverage (FL) and ROE is positive and statistically significant. This means that for every percentage point rise in FL, there will be a 0.73% increase in ROE. A positive and statistically significant relationship exists between FS (Firm Size) and ROE, suggesting that a 219.2% boost to ROE is possible for every percentage point rise in FS (Firm Size).

**Table 11: Arellano Bound Serial Correlation Test**

| Test order | m-Stat.   | Rho           | SE(rho)       | Prob.  |
|------------|-----------|---------------|---------------|--------|
| AR(2)      | -0.512866 | -100350.20464 | 195665.430947 | 0.6080 |

Author's Compilation (2025)

The AR (2) statistics aid to indicates the presence of second order correlation in the model, but with an insignificant value above 0.05 probability level, it indicates no presence of auto-correlation in the model. The key distinction According to GMM estimate, ROA is positively and significantly affected by WD (Waste Management Disclosure), suggesting that a 1% increase in WD would result in a 16.44% rise in ROA. A positive and statistically significant relationship exists between financial leverage (FL) and ROA, suggesting that for every percentage point rise in FL, there will be a 0.45% increase in ROA. ROA is positively and significantly correlated with Firm Size (FS), suggesting that a 1% increase in FS would result in a 17.98% rise in ROA.

The findings indicate that Waste Management Disclosure (WD) positively affects ROA, highlighting that effective waste management practices can enhance profitability, likely due to cost savings and improved operational efficiency. These results underscore the importance of strategic resource allocation in sustainability efforts, where certain disclosures can either detract from or contribute to a firm's financial performance. Companies should carefully evaluate the financial implications of their sustainability initiatives to optimize their impact on profitability.

Theoretically, this finding conforms to legitimacy and stakeholder theories which offer comparable but somewhat diverse views on factors motivating managerial behaviour. For instance, both theories offered suitable frameworks for studying social accounting disclosure practices by shedding light on how firms comprehend and address public and institutional expectations. Accordingly, social accounting disclosure and other organizational practices are tied to values of waste management in which a firm operates and the imperativeness of preserving legitimacy of the firm. Empirically, finding of this study is consistent with Nkwoji (2021); Daferighe, et al (2019); Amran and Siti-Nabiha (2017); Jeroh and Okoro (2016); Magara, et al (2015)

### Conclusion and Recommendations

This study concludes that consistent and high-quality effluence disclosure is vital for corporate transparency and accountability, especially for corporate firms operating in Sub-Saharan Africa. Firstly, the positive relationship between waste management disclosures (effluence disclosure) and return on assets suggests that firms can improve financial performance substantially. This implies that investing in waste management practices and disclosing these efforts to stakeholders can lead to increased efficiency, reduced costs, and enhanced reputation, ultimately contributing to better financial outcomes. As such, firms are to consider integrating environmental sustainability into business strategies and ensure disclosure of these efforts to stakeholders.

The findings also have implications for firms' human capital management practices. On the basis of the findings, the study recommends that consumer and industrial goods firms in Sub-Saharan Africa should focus more attention on waste management (effluence management) information disclosure because it will boost their corporate image and reduce industrial conflict with host communities. This may encourage external stakeholders to patronize firms' product.

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## E-Governance and the Dispensation of Justice in Nigeria's Legal System. Challenges and Prospect

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### Abstract

*The emergence and introduction of electronic technology envisages a more result-oriented and effective service delivery system in Nigeria's public sector. With its attendant challenges, it has become debatable that the phenomenon of e-governance has recorded considerable improvement in service delivery in Nigeria's public service. The Nigerian judiciary which is an integral part of Nigeria's public sector has in recent time embraced electronic technology in its transactions towards achieving effective and efficient service delivery. It is envisaged that the introduction and adoption of electronic technology in Nigeria's judiciary would be of great significance to service delivery and dispensation of justice. The paper examines the effects of e-governance and electronic technology on Nigeria's jurisprudence; service delivery and dispensation of justice in Nigeria's judiciary. Also, the paper observes the likely challenges and hindrances in the application of electronic technology in Nigeria's legal system, measures to tackle the challenges and the prospect of achieving full scale digitalized jurisprudence.*

**Key words:** e-governance, electronic technology, service delivery, judiciary, jurisprudence, legal system

### Introduction

E-governance or electronic governance is facilitated by the aid of supersonic technology mainly for the purpose of improving on delivery of services in the public and private sectors. However, in recent times, the phenomenon of e-governance has been elevated essentially to enhance the delivery of government services and overall governance. E-government (known for electronic government) relies on the use of technology devices, such as computers and the Internet, and digital platforms like websites, portals, and mobile apps for faster means of delivering public services and to make information and services more accessible to citizens and businesses, ultimately aiming for greater efficiency, transparency, and citizen participation (Munir, Sadiq, Abbas and Rasul, 2024)

E-governance is believed to have been birthed when electronic government was initiated by the National Partnership for Reinventing Government (NPR) in 1993 during the Clinton administration in the United States. The NPR pioneered government innovation through information technology, distinguishing it from past administrative reforms. The U.S. concept of e-government, championed by the NPR, went beyond simple cost-cutting or downsizing. It focused on a broader government reform movement designed to improve public satisfaction and deepen democracy (Chung, 2020).

In Nigeria, the advent of e-governance coincided with the return of the country's return to democracy in 1999. This ultimately led to subsequent recognition of Information and Communication

Technology (ICT) as a policy of national importance in 2001; the development of government websites and the implementation of e-government strategies aimed at enhancing transparency, efficiency, and citizen participation in governance. In the early 2000s, the federal government of Nigeria announced the initiative of the government to go digital to enhance the operation of the government in providing public services in a transparent, effective and efficient means (Abdulkareem and Ishola, 2016). The evolution of e-governance in Nigeria has no doubt marked a turning point in the country's efforts to modernize and enhance administrative efficiency. An era where the Nigerian government leveraged information technology to streamline and modernize public service delivery. In the last few years, Nigeria has made significant strides in embracing e-governance, driven by the need to address challenges associated with traditional bureaucratic systems (Abdul, 2024)

The introduction of e-governance in public administration in Nigeria transcends beyond mere government effort towards effective and efficient service delivery. It has grown to encompass the broader concept of e-participation. Adegboyega and Iahad (2018) highlighted the potential of electronic platforms to facilitate citizen engagement in policymaking and decision-making processes. This shift towards participatory governance underscores the transformative impact of e-governance on the traditional dynamics which takes place in the relationship between the government and its citizens. Onuoha (2018) emphasized the role of e-governance

in overcoming bureaucratic bottlenecks, reducing corruption, and enhancing citizen engagement. The adoption of digital platforms has allowed for the automation of various government processes, optimizing time and resource usage for service delivery. Additionally, the integration of technology in government operations has contributed to a more transparent and accountable public administration. At various times, the Nigerian government has advocated and pushed for the enactment of a comprehensive e-Government Law and has initiated projects under the Digital Nigeria Programme to improve digital access and transparency. This includes public financial management initiatives, such as the Integrated Payroll and Personnel Information System (IPPIS) and the Treasury Single Account (TSA) which are aimed at improving

### Conceptualization

Three major concepts will be defined. They are e-governance, service delivery and Nigeria's judiciary

#### 1. E-governance

- assign decision-making authorities, define how decisions are to be made, and establish the organization's strategic direction;
- oversee the delivery of its services; the implementation of its policies, plans, programmes, and projects; and the monitoring and mitigation of its key risks; and
- report on its performance in achieving intended results and use performance information to drive ongoing improvements and corrective actions (accessed @ <https://www.caaf-fcar.ca/en>)

Electronics however, is concerned with or using devices that operate on principles governing the behaviour of electronics. An electronic device has transistors or silicon chips which control and change the electric current passing through the device. Thus, an electronic process or activity involves the use of electronic devices. The function of an electronic device is to regulate the flow of electrical current to process and manage information, enabling functions like computing, communication, and automation. Unlike electrical devices that convert energy into heat or motion, electronic devices use active electronic components such as transistors and integrated circuits to perform complex tasks and make decisions (@ <https://www.collinsdictionary.com>).

efficiency and accountability within public institutions, indirectly impacting the legal system. Interestingly, the phenomenon of electronic governance has been deployed to various aspects of public administration in Nigeria even in Nigeria's judiciary. Since the advent of e-governance in Nigeria, the judiciary has embraced and continued to effectively utilize the instrumentality of e-governance particularly in the realms of providing evidence – electronic evidence, in the court. The paper takes a look at the application of Information Communication Technology (ICT) to public administration in Nigeria with emphasis on the Nigerian legal system and judiciary as a matter of primacy.

E-governance is somewhat an acronym for electronic governance and it will be expedient and more meaningful to clarify them separately.

Governance refers to the structures, systems, and practices an organization has in place to:

E-governance thus can simply be defined as provision of government services and information to the public using electronic means. Such means of delivering information is often referred to as Information Communication Technology (ICT). Use of ICT in government facilities is considered an efficient, speedy and transparent process for disseminating information to the public and other agencies, and for performing government administration activities, with varying emphasis: (Molla, @ (<https://www.academia.edu>))

Essentially, e-governance can be described as the process by which society, through the growing influence of ICTs fundamentally changes and affects how private enterprises and civil society organizations operate (<https://www.caaf-fcar.ca/en>). Computer is the pivot of ICT and computer simply put is a device that is used to perform tasks and stores and retrieves information and data. Computer simply follows instructions given to it hence the adage in computing parlance 'garbage-in- garbage-out'. ICT refers to processing of data via computer; the use of technologies from computing, electronics, and telecommunications to process and distribute information in digital and other forms. (Abubakar, 2018).

#### 2. Service Delivery

Generally, service delivery is the provision of a service to a customer or client, encompassing all the activities and steps involved in fulfilling a customer's needs and expectations. It is a core function of businesses and organizations, especially those providing intangible services, and is crucial for customer satisfaction and building strong relationships. However, within the context of our discussion, service delivery involves the series of steps taken to provide a



service that will meet or exceed the expectation of the beneficiaries (general public) (Shittu, 2020). According to Ogunna (2004), effective public service delivery is the result of government efforts to satisfy the public by implementing sound policies, enforcing laws, and promoting public welfare.

Over the years, service delivery has remained critical and cardinal **to government institutions** and the desire to achieve effective and efficient delivery of service by successive governments in Nigeria has made the adoption of electronic device such as ICT inevitable. The introduction and utilization of ICT in the provision of public service has gained a global appeal and its introduction in Nigerian public sector is to facilitate the fair and transparent distribution of government services, ensuring equal treatment and justice for all citizens without prejudice (Shittu, 2020).

### 3. Nigeria's Judiciary

The *Black's Law Dictionary* defines the judiciary as the branch of government responsible for interpreting laws and administering justice through its court system and body of judges. (<https://thelawdictionary.org>). In Nigeria, and in many other democracies, the judiciary is the third arm of the realm of government. It is the only branch not made up of elected representatives, but of persons appointed to perform the very fundamental role of adjudication in society. The judiciary according to Nnamani, is the branch of government empowered to interpret, clarify, and apply the law. Justice Nnamani further described its crucial function, stating that it serves as the guardian of the constitution and the rule of law, while also protecting fundamental rights. These definitions illustrate the judiciary's role as the holder of judicial power, the scope of which varies between different societies (accessed @ <https://www.learnnigerianlaw.com>).

In a more explicit term, the judiciary in Nigeria pertains to the system of courts where legal processes take place. The judiciary pertains to the administration of justice which defines the primary functions of the judiciary and determines how fairly the laws are applied and interpreted in specific cases.

#### E-Governance and Justice Delivery in Nigeria

Unarguably, the technological changes of the 20th and 21st centuries, the growth of computer technologies, digital technologies and telecommunications have changed the way the state conducts its functions and delivers governance. Whether or not they have improved the welfare function of the state, the way governance is delivered has been altered. Thus we are going to look at the enhancements and the progress e-government has brought to the administration of justice in Nigeria and the hindrances therein.

Before the introduction and application of ICT to public service delivery in Nigeria, the judicial process and particularly the courtroom has been a place of formal and dignified conduct, conservativeness and the one that revolts against innovation. In the past two decades, Judges and Lawyers had pondered over the application of Information and Communication Technology in the judicial and legal processes and have asked questions on whether ICT could ever work or be applied in a court of law. Prior to the ICT era, when rendering decisions, judges consider a blend of factors: the case records, the legal briefs, the arguments presented by lawyers, and their own interpretation of the law and relevant policy. The Legal and Judicial Process essentially entails various levels of information gathering and communication between stakeholders and the conventional practices and procedures are prone to causing undue delays in justice dispensation. With the sheer volume of data and heavy workload in legal proceedings, integrating ICT into the judicial process is essential for improving efficiency and streamlining legal research, reduce if not eliminate inaccuracy, major and avoidable delays in justice dispensation, promote transparency and integrity, and allow for easier information retrieval and in the long run reduce stress and enhance the health of judicial officers. The advent of court room technology as a means for presenting evidence before everyone in the courtroom has put to fore the inevitability of technological revolution in the justice process and system. It has therefore become imperative for the Nigerian Judiciary and the entire legal system to embrace ICT in its goal of delivering quality services (Abubakar, 2018).

E-governance application in Nigeria's judiciary is in its nascent stages, with a few instances like virtual court sessions and e-filing attempts. Law, being an index of societal values depends greatly on the flow of information. Consequently, the form and content of law has continuously changed to conform to the communicative device available at any particular time. The legal systems and contemporary judicial structures in place today are the outcome of centuries of development, with the prevailing communicative structure of each era influencing both the form and content of law. The rapid development of technology opens up new opportunities that were unthinkable only a few years ago. To what extent has the ICT been applied in the judiciary and in the dispensation of justice in Nigeria?

A new era in public service delivery began with the emergence of Information and Communication Technology (ICT) toward the end of the 20th century. (Cerrillo and Fabra, 2008). The deployment of ICT has significantly improved labour productivity as well as processing and dispensing vital information particularly in the public service. Similarly, the utilization of ICT in Nigeria's jurisprudence is evident in many ramifications. For example, with the

introduction of electronic technology, judicial and law officers can now access various online legal research outlets which include MyLaw.ng - for in-depth legal research and content and direct legal assistance; aptResponse and LawPadi - connect users with verified lawyers and provide tools for legal guidance and document generation; LFN App - provide mobile access to Nigerian laws, while others such as Case Radar offer AI-powered legal advisory and document generation services (<https://www.google.com/search?client=firefox-b-e&q=online+legal+platforms+in+nigeria>).

Other legal internet outlets that have been boosted by the ICT are LawPavilion - an extensive online and offline legal research platform with case law, statutes, and analytical tools; Legalpedia - A legal research database providing access to Nigerian case law, statutes, and regulations; **PACER Nigeria** - An online database for accessing Nigerian court records, case information, and filings; vLex - A platform to search and access legal cases from Nigeria; Clio - A cloud-based software for case management, document automation, time tracking, billing, and client communication, adaptable for Nigerian firms; **Trello or Notion** - General task and workflow management tools for organizing legal work, tasks, and deadline (<https://www.google.com/search?client=firefox-b-e&q=online+legal+platforms+in+nigeria>), and the NigerianLawGuru.com - A resource center for legal scholars and practitioners with legal research materials; The NigerianLawGuru.Com is one of Nigeria's premier site designed to serve all legal research and reference needs. Also, the site is designed to project the legal profession in the right direction within the context of legal research, and to facilitate and stimulate measures to sustain the pragmatic ideals of continuing legal education in Nigeria (<https://nigerianlawguru.com/>).

The oldest Law report, and perhaps one of the most credible, popular and patronized legal materials in Nigeria, The Nigerian Weekly Law Reports (NWLRL) launched its online version around January 2020. Chief Ganiyu Oyesola Fawehinmi founded the NWLRL publication in 1985 while the online platform was introduced to increase accessibility for legal professionals and students. The online version of the Nigerian Weekly Law Reports became necessary with the advent of Information and Communication Technology and to provide lawyers, judges and law students easier access to the Nigerian Weekly Law Reports, often referred to as "the legal profession's bible," (<https://punchng.com/nigerian-weekly-law-report-goes-online/>)

No doubt, the creation and availability of the numerous online legal platforms mentioned above has significantly impacted on the legal profession and the justice system in Nigeria. Also, the availability of internet services has brought about the possibility of consulting online legislation and case

law, the use of electronic filing, the electronic exchange of legal documents and conducting virtual hearings or video conference around the world and particularly within Nigeria's legal system (Ibekwe and Onwuatuegwu, 2021).

Although there appears to be a consensus among stakeholders for the adoption and adaptation of electronic technology in Nigeria's jurisprudence, the measures taken so far towards the application of electronic technology in the administration and dispensation of justice in Nigeria remains vapid and unenthusiastic on the part of the drivers of the Nigerian judiciary (Olugasa and Davies, 2022). Considering Nigeria's global political standing particularly in Africa and the fast pace of technology, it is expected that the court system should dematerialize itself as evident in other activities (Sourdin, Li and McNamara, 2020). However, in an effort to introduce and apply electronic governance in Nigeria's legal system, several states in Nigeria have introduced e-payment in their judiciaries. For example, the state of Akwa Ibom in South East Nigeria became the first to introduce online e-payments in its judiciary arm for all legal fees. The state has procured an e-Judiciary Enterprise Resource Planning (ERP) system, a digital application designed to manage all court processes. In Akwa Ibom, electronic payments for court fees, fines, and judgment debts are now possible online. The state has also implemented an online system for filing cases, as well as a judiciary e-library for virtual research and studies, which is accessible for a small fee. (<https://paymentsafrika.com/nigerian-state-pioneers-e-payment-in-judiciary>)

The Lagos State Judiciary has enhanced its Electronic Filing System (EFS) by integrating an e-payment platform. This upgrade is designed to accelerate the filing and processing of cases and to reduce the number of physical visits lawyers and litigants need to make to the High Court Registry. (<https://infrastructuremag.com.ng/2020/06/17/lagos-judiciary-upgrades-electronic-filing-system-with-e-payment>).

In 2024, Ogun State in South West Nigeria launched a new E-Registry Platform to reduce backlogs and streamline case management; to make the process more effective and efficient. towards ensuring transparency of court processes in the State Judiciary. The E-Registry platform which was implemented as a key component of the Ogun State Chief Judge's seven-point agenda was meant to fully digitalize the state's judiciary. The platform includes features such as E-filing, E-service, E-payment, as well as Case assignment and Management profiles was for the purpose of enhancing the efficiency of court proceedings while bolstering the security of court processes, leading to faster delivery of justice. The Ogun State E-registry aims to enhance the safety of court processes and accelerate the delivery of justice.

By digitalizing the judicial process, it is expected to increase judicial independence and prevent undue interference and bribery between court officials and litigants or counsel. This eliminates opportunities for exploitation arising from loopholes in the manual system. The e-registry platform will enable the public, litigants, and legal counsel to remotely track the progress of cases, from initial filing to online assignment. This capability allows individuals to manage case processes from their homes or offices, mitigating the security (<https://ogunstatejudiciary.gov.ng/judiciary-launches-e-registry-to-avert-backlog>).

The Edo State Judiciary has been on a modernization drive, implementing various technological and structural reforms to enhance the administration of justice. This features of this modernization drive includes implementing online payments as part of a broader Edo State online payment system to facilitate service payments. The Edo state e-payment as it applies to the judiciary has been active and utilizing unique "IND" numbers for payments via POS terminals with debit cards (<https://edojudiciary.gov.ng>).

Although, the introduction and adoption of electronic technology and Remote Court Proceedings (RCP) in Nigeria's judiciary has resulted in significant development across jurisdictions, the Nigerian experience seems to be that of a crawling snail owing to a number of challenges. The challenges range from infrastructural deficit, poor funding and regulation. Indeed, various reasons were also given amongst commonwealth countries such as Canada, Australia and Kenya to explain the slow adoption of RCP in their various jurisdictions including the need to preserve the adversarial system, the cost of technology, lack of internet access, the likely impact on judges as they assess witnesses and their evidence, the need to preserve the posture and clarity of roles of the various parties to a suit. So far, it is noted that despite the identified challenges, some jurisdictions including Australia and Singapore continue to accept the promises of RCP and are looking to improve upon and make its adoption a permanent feature in their adversarial system (Olugasa and Davies, 2022).

### **Prospects and Challenges of Adopting Electronic Technology in Nigeria's Judiciary.**

Since the advent of electronic technology within government institutions, there has been some appreciable level of enthusiasm and drive in its application to governance and public service delivery. In Nigeria, ICT is increasingly becoming indispensable in all fields of human endeavour and in all facets of life. This is to the extent that ICT is widely applied to simple tasks, such as scheduling a doctor's visit, booking a travelling ticket at the Airports and at the Train stations, or purchase of recharge card, to the most complex operations of

major organizations and governments (Abubakar, 2018).

The penetration of the judicial systems by Technology has redefined the way evidence(s) are obtained, changed ways of investigating crimes, gradually altering the legal climates around the world. Changes occasioned by the advent of technology are evident around the globe. Consequently, various legislatures altered their laws to include use of electronic evidence which formed part of the facts in dispute between litigants as evidence in legal proceedings. For instance, in 2000 India amended its Evidence Act 1892 to allow electronic evidence in legal proceedings. This development has served as an impetus to the Nigerian jurisprudence. As noted previously, some jurisdictions, such as Australia and Singapore have continued to accept the promises of ICT and Remote Control Proceedings (RCP) and are looking to improve upon and make its adoption a permanent feature in their adversarial system (Olugasa and Davies, 2022).

But what are the prospects of E-governance in Nigeria's judiciary? With what has been achieved so far in some the federating units as highlighted above, it is convenient to predict that E-governance holds significant promise for increasing efficiency, transparency, and accessibility through the adoption of ICT in judicial processes, including electronic filing, case management systems, and online collaboration tools. Key prospects include reduced procedural duration, enhanced record security, and improved communication between judicial stakeholders, ultimately contributing to a more accountable and responsive justice system. The application of ICT in courts can streamline administrative processes, speed up case management, and reduce the duration of legal procedures. E-governance facilitates easier access to case information and court schedules, which benefits litigants and lawyers. The introduction and application of electronic transaction in Nigeria's judiciary will engender electronic filing systems that protect court records and allow for their easy retrieval, minimizing the risk of data loss or damage. Technologies like videoconferencing and online collaboration tools can reduce the workload of judges and judicial officers. ICT can accelerate the flow and exchange of information between courts, prosecutors, and other stakeholders, helping to meet judgment deadline

(<https://www.google.com/search?q=on+the+prospects+of+egovernance+in+nigeria%27s+judiciary&client=firefox/>). Essentially, with the introduction of the E-payment of filing fees in some of our courts particularly in south Nigeria, the expansion of internet services and the possibility of consulting online legislations and case laws is anticipated. We are likely going to experience more of electronic exchange of legal documents that will spur the

judiciary in Nigeria into a more effective and efficient one (Ibekwe and Onwuatiegwu, 2021).

In Nigeria, the growing adoption of information technology in commercial and financial transactions has led to the tendering of electronically generated documents in court as evidence. The Evidence Act in Nigeria has been amended several times to promote the tendering and admissibility of electronic evidence in Nigerian courts. For example, the Evidence Act 2004 was repealed due to complexities arising from interpretations by the courts as to what constitutes electronic evidence. In its place, the Evidence Act 2011 was enacted. Under Section 84 of Nigeria's 2011 Evidence Act, electronically generated evidence is admissible in court. On 12th June, 2023, an Amendment Act on evidence was signed into law. Amongst other things included in the amendment are the admissibility of electronic records and computer simulations, authentication of electronic records, use and proof of digital signature, electronic oath taking, electronic gazette and also gives the Minister of Justice the right to create regulations governing admissibility when there appears to be a lacuna in the law (Oluwajobi and Fatimehin, 2024).

At present there is inadequate accessibility of internet services particularly in the rural areas. However, the tide is changing due to the influx of affordable smart phones and constant expansion of telecommunications companies and operations. With greater access to the internet, more individuals can educate themselves on their rights and the workings of the justice system.

Stakeholders and parties to suits are now able to participate in virtual court sittings from their comfort zones. The application of electronic technology and ICT in Nigeria's judiciary has enabled the development of online legal research tools like LexisNexis, LegalPedia and Law Pavilion. With the creation of these outlets, the burden of research has been reduced considerably due to easy accessibility of the internet (Abubakar, 2018 and Ibekwe and Onwuatiegwu, 2021).

Irrespective of the identified merits of the utilization of ICT in Nigeria's jurisprudence, the application of computers still presents difficult problems and challenges to the legal system. The challenges essentially have to do more with failure of the legal profession to fully embrace IT and deploy same towards the development of Nigeria's jurisprudence. Added to this is the challenge of inadequate legal framework to regulate the use and application of electronic technology in Nigeria's judiciary. The exponential growth of electronic usage in global transactions has created new challenges to existing laws. Some of the legal solutions still lag, because of the unique complexities attached to e-activities. Electronic evidence is dependent on the same evidentiary rigours as its paper-based counterpart. Electronic evidence as with other evidence, must be both material and relevant to the issues as defined by

pleadings, must not be subject to any other exclusionary rule and must ultimately possess greater probative value than prejudicial effect to be received. There exists no legislation on electronic signature in Nigeria which is vital for authentication of electronic evidence or digital evidence to determine its genuineness and reliability (Okeji, Adedoyin-Raji and Isa, 2024).

Furthermore, there are misgivings pertaining to the reliance regarding electronic evidence in Nigerian courts. This is mainly due to the contradictions in the judgments and rulings of the court whereby sometimes documents of this nature were admitted and sometimes rejected by the courts. The Apex Court once held obiter that the law cannot over look the mode of modern business transactions and that it will be in the best interest of the public if the law is amended to permit the use of electronic evidence in the court. Thus, the admissibility of electronic evidence became more like a matter involving critical thinking before the courts. While some Judges preferred to apply the law as it was others, in the interest of justice favoured interpretations that will permit the use of electronic evidence in courts. The courts then began to take judicial notice of electronically generated evidence as they saw its use in trial as an avenue of keeping up with modern-day commercial transactions. However, in *Federal Republic of Nigeria v. Fani Kayode*, the trial court did not admit computer printout as evidence, and neither did it take judicial notice of it even though it was relevant to the fact in issue. The appellate court in hearing the appeal permitted the use of the printout as it was duly certified and directly related to the matter at hand (Oluwajobi and Fatimehin, 2024). These contradictions form a critical aspect of the challenges inhibiting the application of electronic technology in Nigeria's judiciary.

Other inhibiting factors to the application of electronic technology in Nigeria's judiciary stem from the rules established in the Evidence Act of 2011. In Nigeria, the admissibility of computer-generated evidence is primarily governed by Section 84 of the Evidence Act 2011, which was later amended in 2023. To be admissible, a document generated by a computer must satisfy the four conditions outlined in Section 84(2), including frequent computer usage, regular information supply, proper computer functioning, and that the reproduced information is derived from that supplied information. This framework applies to both civil and criminal cases. **Section 84(1):** States that a statement in a computer-produced document is admissible if the conditions in subsection (2) are met. **Section 84(2)** states the Four Conditions as follows:

1. **Regular Use:** The computer must have been used regularly for information storage and processing.

2. **Regular Information Supply:** The information in the document must have been regularly supplied to the computer during the activities.
3. **Proper Operation:** Throughout the relevant period, the computer must have operated properly or any malfunctions did not affect the document's accuracy.
4. **Accuracy of Information:** The information reproduced in the document must accurately reflect the data entered into the computer (Evidence Act, 2011).

Intriguingly, these provisions have been subjected to various interpretations by the courts. The variegated interpretations are no doubt debilitating to the full scale digitalization of the Nigerian legal system. Consequently, the Nigerian judiciary has not fully adopted the use of ICT in its administration of justice either due to the non-existing comprehensive legal and institutional framework permitting the use of ICT, or due to the partial/non-application of electronics and modern information and communications technologies in our judicial institutions. The failure of the judiciary in Nigeria to embrace full scale electronic technology in its activities is blighted by the problem which arises from the admissibility/inadmissibility of electronically generated evidence, and the lack of proof of its authenticity. The greatest of which is the fact that the Independent Electoral Commission (INEC) card reader is not admissible even as against the mischief it was meant to suppress (Aniekwe and Oraegbunam, 2021)

### Conclusion

There is already a consensus that e-governance and ICT is indispensable to government institutions in Nigeria and particularly to Nigeria's judicial system as the adoption and application of electronic technology is believed to be critical to service delivery and overall dispensation of justice. Interestingly, the introduction of ICT by the Federal Courts and few State Courts has shown the difference in service delivery, efficiency and transparency, it is therefore most appropriate to deploy ICT to all levels of courts for such positive impact to be felt. The general consensus drawn from the Practice Directions of Lagos, Ogun, River state and the Federal High Court of Nigeria, Abuja is that service is by email or WhatsApp or any other means directed by the court (Olugasa and Davies, 2022).

IT compliant judiciary will help Judicial Officers to access current global trends, share experiences and reach out globally. With the deployment of ICT, there is the possibility of establishing a Judicial Research Centre and Data Base. This would allow for easy research, access to legal authorities and interactive reach out along the court hierarchy in Nigeria (Abubakar, 2018).

However, to achieve an appreciable level of an ICT compliant judiciary in Nigeria, actions need to be taken to tackle some of the challenges militating against the expeditious application of electronic technology in Nigeria's legal system. There is the challenge of resistance and stiff opposition to the integration of ICT into national economies and societies such as Italy and Nigeria. This problem is a factor of the challenges of technophobia and the digital divide. The argument is that more adults will display fear for technology, hence an ICT compliant judiciary may not be easily welcomed by older judges or legal practitioners. Such fear, lack of skill, variation in income, age and education (or literacy level) can create a digital divide amongst users of technology leading to a decline in the usage of electronic technology..

Another argument against the application of electronic technology in Nigeria's judiciary is around the constitutionality of the proceedings. This argument rests heavily on the interpretation of Section 36 of the 1999 Constitution (as amended) that requires that all hearings by courts and tribunals must be held in the public. The view is that holding court sessions remotely or virtually would breach this constitutional requirement since members of public will not readily participate in the virtual court hearing. The Constitution is the supreme law and any law that is held inconsistent with the provisions of the 1999 Constitution (as amended) will be deemed to be null and void (Olugasa and Davies, 2022). Thus, an appropriate, unambiguous and enforceable legal framework needs to be established towards achieving a functional ICT compliant judicial system in Nigeria. The digitalization of Nigeria's judicial system is now a desideratum; it is a reality which has come to stay. It should be harnessed to improve the delivery of services and the administration of justice.

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## Enhancing Innovation in Entrepreneurship: A ripe for Upturning Economic Downturn

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### **Abstracts**

*Innovation refers to the process of creating new ideas, products, services, or methods that bring about significant improvements or solve problems in novel ways. Various examples of innovation are available for an entrepreneurs to use in the business such as: Disruptive Innovation, Incremental Innovation, Architectural Innovation, Radical Innovation. Entrepreneurship and innovation are relate to each other as both serve as a vehicle or channels for the accomplishment of its tasks. To stimulate entrepreneurship and innovation during an economic downturn, governments and institutions should focus on reducing bureaucratic hurdles for startups entrepreneurs.*

**Keywords:** innovation, entrepreneurship .enhancing, upturning, economic, downturn

Words count -103

### **Introduction**

Entrepreneurship and innovation are closely linked concepts, with innovation often being a key driver of successful entrepreneurship. Entrepreneurship involves the process of creating, developing, and managing a business venture, while innovation refers to the introduction of new ideas, methods, or products. Essentially, entrepreneurs leverage innovation to identify opportunities, solve problems, and create value in the marketplace.

Entrepreneurship and innovation are increasingly important in all areas of business and government. Entrepreneurial start-ups galvanise the economy by identifying new opportunities and redirecting resources to them. Established firms innovate in order to outmanoeuvre or respond to their competition. And in the public sector, the need for effective policies to deal with new challenges and for increasing service delivery with declining budgets also places a premium on innovative thinking. The course focuses on the skills necessary for the planning, development and launch of entrepreneurial and innovative ventures. The material covered includes the foundations of entrepreneurship, techniques for creative thinking, and processes for developing, planning and launching a new venture including protecting intellectual property, evaluating markets, developing innovative business models, budgeting, and raising finance. The major piece of assessment is the writing of a comprehensive business plan.

### **Concept of Innovation**

#### **What is Innovation?**

Innovative refers to the transformation of creative ideas in a business (Njeri 2017).

➤ Innovation refers to the process of creating new ideas, products, services, or methods that bring about significant improvements or solve problems in novel ways.

➤ It involves the application of creativity and knowledge to develop solutions that add value, enhance efficiency, or address challenges in unique ways.

➤ Innovation is key to progress in any field, driving advancements in technology, business, healthcare, and more

Innovation is the process of introducing new ideas, methods, products or services. It involves developing something new or significantly improving existing ones, often driven by new technologies or a fresh perspective on existing knowledge. Ultimately, innovation aims to solve problems, enhance efficiency, or create new opportunities. A firm's longevity in a highly competitive market place is determined by the level at which it introduces and executes its new ideas in products and services to meet change in customers' demands and expectation (Im, Montoya and Workman, 2013). Organisations continuously need to tackle the problem of changing market demands and meet changing customer needs, especially because the marketplace is said to be a war arena for firms but guided by ethical conduct; it is a highly competitive

environment. Therefore, according to Ellomen, Jantunen and Kuivalainen (2011) they have a continuously improve their existing processes and products, and develop new products that match market requirements and if necessary create new markets for existing or a new products that is, market innovation.

Examples of Entrepreneurial Innovation:

- **Disruptive Innovation:**

Introducing a new product or service that fundamentally changes the way things are done (e.g., ride-sharing replacing taxi services).

- **Incremental Innovation:**

Making small improvements to existing products or processes (e.g., a faster processor for smartphones).

- **Architectural Innovation:**

Applying existing knowledge to new markets or contexts (e.g., using 3D printing technology to create customized prosthetics).

- **Radical Innovation:**

Creating entirely new products or services that did not exist before (e.g., the invention of the internet).

In conclusion, entrepreneurship and innovation are intertwined concepts that are essential for economic growth and societal progress. Entrepreneurs leverage innovation to create new businesses, solve problems, and drive value creation, while innovation provides the foundation for entrepreneurial.

### Characteristics of an Innovation Entrepreneur

Stoner J. A. et al (1999) states that an innovate entrepreneur should the following Characteristics:

- Conceptual fluency; He or She should have the ability to produce a large number of ideas quickly.
- He or She should learn to consider ideals on the basis of his merit and being motivated by problems.
- He or She should possess the ability to suspend judgement, get committed and spend time in analysing and explaining business facts.
- He or She is usually less authoritative and flexible; accepts his own impulse, and is disciplined in pursuit of his course of action
- He or She should have the ability for independent judgement, less conformity, and often be a deviant from accepted ideas.
- He or She should also be able to see himself as unique and different from others.

Enhancing innovation by an entrepreneur can only be possible if;

- If the financial means to test out his ideas
- Well trained to bring modern knowledge to bear up his tasks,
- Easily can get in touch with like-minded entrepreneurs

Reason for Innovation and upturning economic Downturn

- Desire to overcome labour shortages
- Desire to overcome material shortages
- Desire to meet excess demand
- Desire by customers for new quality of product.
- Desire to use the work of research and development departments.
- Constant pressure of competition

### Areas of Innovation

- Process technology
- Market innovation
- Product innovation
- Process of distribution
- Factors of production (new products' input)
- New model/product differentiation

### Concept of Entrepreneurship

What is meant with entrepreneurship and how does this relate to innovation?

Entrepreneurship and innovation are fuzzy concepts that have been given multiple meanings. Innovation and entrepreneurship are often regarded as overlapping concepts. This can be traced back to probably the most well known definition of entrepreneurship, by Schumpeter (1934: 74), who defines entrepreneurs as individuals that carry out new combinations (i.e., innovations). Schumpeter distinguishes four roles in the process of innovation: the inventor, who invents a new idea; the entrepreneur who commercialises this new idea; the capitalist, who provides the financial resources to the entrepreneur (and bears the risk of the innovation project); the manager, who takes care of the routine day-to-day corporate management. These roles are most often executed by different persons (see for example Kenney 1986). The literature on entrepreneurship recognises a variety of entrepreneurial roles in economic change, such as:

- the person who bears uncertainty (Knight 1921);
- an innovator (Schumpeter 1934);
- a decision maker (Casson 2003);
- an industrial leader (Schumpeter 1934);
- an organiser and coordinator of economic resources (Marshall 1890);
- an arbitrageur, alert to opportunities (Kirzner 1973; 1997);
- an allocator of resources among alternative uses (Schultz 1975).

These roles all implicitly carry with them an economically positive connotation.

However, if entrepreneurs are defined to be persons



who are ingenious and creative in finding ways that add to their own wealth, power, and prestige (Baumol 1990), then it is to be expected that not all of their activities will deliver a productive contribution to society (cf. Murphy et al. 1991). For

### Who is an Entrepreneur

Entrepreneur is refers to as a person who undertakers and operate a new venture, and assumes some accountability for the inherent risks.

The concept of “entrepreneur” is a French word called “entreprendre” meaning to undertake. This concept was used to refer to a business organization in the 18th century who deals or buys and sells goods at uncertain prices. Richard Cantillon (1755) defines entrepreneur as the agent who buys means of production at certain prices in order to combines them into a new product. Say, J. B (1621) defines the entrepreneur as a person who is willing and able to convert a new idea or invention into a successful innovation. Ogundele (2000) defines entrepreneurs as the innovating individusl ,who initiatiates and nurtures to grow a new and on going business organization ,where none existed before

### Relationship between Innovation and Entrepreneurship

#### 1. Innovation as a Catalyst for Entrepreneurship:

- Entrepreneurs often identify unmet needs or inefficiencies in the market and develop innovative solutions to address them.
- Innovation can create new markets or disrupt existing ones, providing opportunities for entrepreneurs to establish new businesses.
- Examples include the development of new technologies, business models, or products that revolutionize existing industries.

#### 2. Entrepreneurship as a Vehicle for Innovation:

- Entrepreneurs are often the driving force behind the commercialization of innovative ideas.
- They can take risks, mobilize resources, and build businesses around innovative concepts.
- This process of translating innovative ideas into tangible products or services is crucial for economic growth and societal progress.

#### 3. The Importance of Innovation in Entrepreneurial Success:

- In today's dynamic business environment, innovation is essential for entrepreneurs to stay competitive and adapt to changing market conditions.
- Companies that embrace innovation are more likely to experience growth, generate profits, and create a lasting impact.

- Innovative entrepreneurs can also contribute to job creation, economic development, and overall societal well-being.

### Important of Entrepreneurship and Innovation to the Nation Development

Entrepreneurship and innovation are crucial for national development as they drive economic growth, create jobs, and foster societal progress. They lead to increased productivity, competition, and the development of new technologies and markets. Furthermore, entrepreneurship and innovation can help address societal challenges and improve living standards.

Here's a more detailed look at the importance:

#### 1. Economic Growth:

##### • Job Creation:

Entrepreneurs establish new businesses, generating employment opportunities and reducing unemployment rates. Small and medium-sized enterprises (SMEs) are particularly significant in this regard, according to a study by journalwjarr.com.

##### • Wealth Creation:

Entrepreneurship facilitates wealth accumulation through business profits, investments, and increased economic activity.

##### • Increased Productivity:

Innovation, often driven by entrepreneurs, leads to more efficient production processes and the development of new products and services, boosting overall productivity.

##### • Market Competition:

Entrepreneurs introduce new products, services, and business models, challenging existing firms to innovate and improve, leading to a more dynamic and competitive market.

##### • Attracting Foreign Direct Investment:

A vibrant entrepreneurial ecosystem can attract foreign investment, further fuelling economic growth.

#### 2. Social Development:

##### • Addressing Social Problems:

Entrepreneurship can provide solutions to social issues like poverty and unemployment by creating income-generating opportunities and improving living standards.

##### • Cultural and Social Advancement:

Innovation and entrepreneurship can lead to new cultural expressions, social norms, and improved access to essential services like healthcare and education.

##### • Skill Development:

Entrepreneurship provides opportunities for individuals to acquire new skills and knowledge, enhancing their

capabilities and contributing to human capital development.

### **3. Innovation:**

- **Technological Advancement:**

Entrepreneurs are often at the forefront of developing and adopting new technologies, driving technological progress and societal transformation.

- **Product and Service Innovation:**

Entrepreneurship encourages the creation of new and improved products and services, meeting evolving consumer needs and preferences.

- **Process Innovation:**

Entrepreneurs can also innovate in business processes, making them more efficient and cost-effective.

### **4. Sustainable Development:**

- **Environmental Sustainability:**

Entrepreneurship can drive the development of green technologies and sustainable business practices, promoting environmental protection and resource efficiency.

- **Social Sustainability:**

Entrepreneurship can contribute to social equity and inclusion by providing opportunities for marginalized communities and addressing social inequalities.

- **Economic Sustainability:**

By fostering innovation and productivity, entrepreneurship can create a more resilient and sustainable economy that can adapt to changing circumstances.

In summary, entrepreneurship and innovation are vital for national development, contributing to economic prosperity, social progress, and a more sustainable future.

### **Conclusion**

It is believed that this paper that there is some degree of relation between Entrepreneurship and innovation as a ripe for Upturning Economic Downturn where all barriers and disruption in Entrepreneurship and innovation is totally eliminated for the effective and perfect economic growth in our Nation particularly Nigeria’.

In conclusion, if all the process of entrepreneurship and innovation is well routed the economic downturn that we are facing in our Country can be surmounted and reduce drastically to the barest minimum.

### **Recommendation**

The thrust of this paper is that Nigeria has the great potentials to be at fore-front in terms of stability economic growth and development. Based on the findings of this study, the following recommendation are made:

To stimulate entrepreneurship and innovation during an economic downturn, governments and institutions

should focus on reducing bureaucratic hurdles for startups, providing financial support through subsidies and grants, fostering a culture of innovation within businesses, and ensuring access to training and resources for entrepreneurs. Additionally, promoting digital technologies, emphasizing sustainability, and encouraging inclusive entrepreneurship can further bolster economic recovery.

Here's a more detailed breakdown:

#### **1. Streamline Regulations and Reduce Bureaucracy:**

- **Lower administrative burdens:**

Simplify the process of starting and running a business by reducing the number of bureaucratic steps, regulations, and fees for startups.

- **Provide clear and consistent legislation:**

Avoid conflicting laws and regulations that create uncertainty and discourage business activity.

- **Protect intellectual property:**

Ensure entrepreneurs have clear legal rights to their inventions and creations to encourage innovation.

#### **2. Provide Financial Support:**

- **Start-up subsidies and grants:**

Offer financial assistance to new businesses, particularly those with innovative ideas or those targeting underserved markets.

- **Access to funding:**

Ensure entrepreneurs have access to various funding options, including venture capital, angel investors, and microfinance.

- **Tax incentives:**

Provide tax breaks or other financial incentives for businesses that invest in research and development or create jobs.

#### **3. Foster a Culture of Innovation:**

- **Encourage risk-taking:**

Create a work environment where employees feel empowered to experiment and innovate without fear of failure.

- **Promote collaboration:**

Facilitate collaboration between businesses, research institutions, and universities to foster knowledge sharing and innovation.

- **Invest in education and training:**

Provide access to training programs that equip entrepreneurs with the skills they need to succeed, including digital literacy and sustainable business practices.

#### 4. Embrace Digitalization:

- Leverage digital technologies:  
Encourage the adoption of digital technologies to improve efficiency, reduce costs, and reach new markets.
- Support digital entrepreneurship:  
Foster the growth of digital businesses, particularly those that can address social and environmental challenges.
- Promote digital infrastructure:  
Invest in digital infrastructure to ensure that all entrepreneurs have access to the internet and other essential digital tools.

#### 5. Emphasize Sustainability:

- Promote sustainable business practices:  
Encourage businesses to adopt environmentally friendly practices and develop sustainable products and services.
- Support green entrepreneurship:  
Provide resources and support for entrepreneurs who are developing innovative solutions to environmental challenges.
- Integrate sustainability into business models:  
Help entrepreneurs understand the long-term benefits of sustainability for their businesses and the economy.

#### 6. Promote Inclusive Entrepreneurship:

- Support underrepresented groups:  
Focus on creating opportunities for women, minorities, youth, and other underrepresented groups to participate in entrepreneurship.
- Provide tailored support:  
Offer mentorship, training, and financial assistance that is specifically designed to meet the needs of these groups.
- Promote diversity and inclusion:  
Encourage diversity within the entrepreneurial ecosystem to foster creativity and innovation.

By implementing these recommendations, governments and institutions can create a more supportive environment for entrepreneurship and innovation, which can help to mitigate the negative impacts of an economic downturn and pave the way for sustainable economic growth.

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## Ethical Leadership and Accountability in the Nigerian Public Service

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### Abstract

*This paper examined ethical leadership and accountability in Nigeria's public service. It focused specifically on the role of ethical leadership on accountability in Nigeria's public service. The data utilized for the study were based on qualitative research which includes the secondary data information gathered through online materials, academic journals and so on. Findings from the study revealed that accountability mechanisms which include the Public Service Rules, Public Complaint Commission, EFCC, ICPC, Code of Conduct and so on have not arrested the culture of unaccountability in the public service. The opaqueness and lack accountability has remained unabated despite the efforts to contain it. The study concluded that the role of the accountability mechanisms is not adequate enough to contain the culture of lack of accountability in the public service, rather the Government should promote ethical leadership in the public service which in turn will engender an accountability culture in the public service.*

**keywords:** Accountability, Ethics, Leadership, Ethical leadership, Public Service, Corruption

### Introduction

Existing studies in literature revealed that leadership which practice the principle of accountability is pivotal to effective and efficient public service (Gberevbie, Shodipo and Oviasoghie, 2013; Adejuwon, 2014). Consequently, there is an increasing advocacy for improvement of public sector accountability over the years (Adejuwon, 2014; Etim, Jeremiah & Jeremiah, 2020). This is imperative because the lack of accountability in the public sector creates room for corruption with dire consequences (Ejere, 2012). The culture of accountability mandates the public office holder to render a full account of their activities to the public. Similarly, Agba et. al. (2008) posits that "accountability demands that the public should know when money came into government treasury and how the money was used."

In Nigeria, the call to strengthen accountability mechanisms in the public service is not a contemporary public outcry. This is mainly because it has been identified as a constant cause of concern in the public sector (Ejere, 2012; Etim et al., 2020). Buhari (1999) observed, "it is an understatement to say that there has been a clear lack of accountability in the conduct of public affairs in this country". However, despite the importance of promoting and strengthening accountability in the public sector, there is a

compelling necessity of virtually equal magnitude to emphasize the principle of ethical leadership in public affairs.

Scholars have established that there is a strong influence of leadership on proper accountability in the handling of public affairs (Edoho 2007; Kuada 2010). The role of leadership in achieving organizational goal and objectives is considered vital and imperative (Ujo 1995; Klenke 2007; Kuada 2010). It is also unarguable, particularly in developing countries that the absence of accountability fuels various unethical public sector practices (Etim et al, 2020). The foregoing implies that the nature of leadership that superintends over accountability process in the public sector is significantly consequential. Menzel (2007) argued that for there to be good outcomes in the public sector ethical leadership is a necessity in this regard.

Since existing literature has affirmed that leadership performs extensive role in fostering proper accountability in every organizations (Edoho 2007; Kuada 2010), it is imperative to commit substantial attention to the force that drives accountability process and not just the framework from which enforcement is implemented. In the light of the aforementioned, the central argument of this paper is that ethical leadership should occupy our prioritization as we pursue the course of strengthening accountability in the public

sector. This paper seeks to encourage policy makers to initiate strategies that can promote ethical leadership in the public service, which consequently galvanizes an environment of accountability and integrity.

### **Methodology**

The paper adopted qualitative research design. As a result, secondary data from journals, relevant books, magazines, the internet and newspapers were analyzed to determine the relationship between ethical leadership and accountability in Nigeria's public service. The qualitative method affords the opportunity of eliciting in-depth knowledge of how ethical leadership foster accountability culture. The study specifically collates data from academic literature and other relevant materials that focused on ethical leadership, accountability and transparency, the public service and so on. The secondary data were gathered through a review of peer reviewed journals, books, and reputed institutional publication.

### **Theoretical Perspective**

This paper adopted the authentic leadership theory to analyse the role of ethical leadership as a driver of accountability practices in organizations either in the public or private. The rationale behind the choice of this theory hinges on the fact that every organization requires the leadership that fosters the culture of accountability, transparency and probity for smooth sailing of the organisation.

According to Walumbwa et al (2008) authentic leadership theory is a positive leadership theory that concentrates on developing the psychological and the ethical climate of managers and followers. The framework of analysis of authentic leadership theory specifically centres around four major characteristics which are self-awareness, internalized ethics, balanced information processing and relational transparency. In general, these elements form the basic traits, tendencies and behavioural pattern of authentic leadership theory. Lehmana et al (2019) argued that authentic leadership provides the intersection between organisations internal values and its external expression. It centres around behavioural tendencies, meaningful social relationship and qualities that is considered valuable, in high demand and are considered uncommon practices. Jiewen, Ahmad & Xiaoyang (2024) expressed the fact that the "authentic leaders use their own positive moral values to inspire and influence their followers". By virtue of this of leadership style, the authentic leader fosters a culture of ethical behaviour, authentic leaders motivate their followers to not only follow but also to develop themselves, ultimately contributing to the overall success of the organization (Zhang et al., 2021).

The theory posit that authentic leaders, whether in the public or private organisation, possess the attributes of transparency and in addition they exhibit proper ethical behaviour that centres on probity, which is required to engender accountability culture in the organization (Avolio et. Al. 2009; Kuada 2010). There are certain leadership traits that can drive and encourage the practice of accountability. These trait include and not limited to transparency, honesty and integrity. These attributes produce a work environment that voluntarily submits to checks and balance mechanisms in existence (Kuada 2010).

There are a number of derivatives from the application of authentic leadership theory to the public organization, firstly, because of the trait of honesty, transparency, accountability inherent in authentic leaders, there is a trust built around such leadership from the subordinates. as a result of this foregoing, there is an environment where intrpersonal relationship is improved, there is collaboration and team work (Iszatt-White&Kempster, 2019)

Secondly, the authentic leader is able to create a positive work environment which is a fallout of the exemplary leadership, consistent value and behavior. This characteristics inspires the employees compels a sense of commitment from employees. In view of the aforementioned traits of the authentic leadership, the positive work environment which is a direct consequence increases employee engagement, accountability which in turn improves organisation outlook.

Furthermore, the authentic leadership gives attention to practise of transmitting values and provide a guide to team members to foster the ethical values and acceptable codes of conduct. through the principle of reproducing the right values in team members, a culture of ethical standard and right values is created in the work environment. By virtue of this, authentic leadership becomes a solution to leadership unethical issues in society (Corriveau, 2020).

### **Accountability In Nigeria's Public Service**

From the period of independence to the contemporary Nigerian society, the state of accountability in the public sector leaves much to be desired (Thovoethin, 2003). The Nigerian post-independence experiences aptly provide ample evidences to buttress the foregoing claims, as public accountability has been very weak since the first republic (Adejuwon, 2015). The Nigerian public sector has been confronted with inefficiency and in-effectiveness partly because the administrative measures established to enhance public sector accountability are ridden with corrupt practices to the extent that it prevents exposure of misconducts and summoning of culprits to account (Ijeoma, 2013).

According to Ogara and Olarinmoye (2018),  
 “the tradition of question time in parliament which had been an effective instrument for turning the searchlight on the public service and for probing the conduct of administration in the inherited British model was the first to be stifled. The reasons for this are as numerous as they were personal to the politicians who were interested in killing everything that would have hindered them from their primary preoccupation of self-perpetuation and enrichment. Consequently, the absence of these parliamentary methods which would have called the civil service to order through the political ministers in charge of them paved the way for the abuse and misuse of bureaucratic power and subsequently corruption”.(Agara and Olarinmoye, 2018)

The above highlights one of the numerous pointers to absence of public accountability in the first republic. In their argument, Ogara et al (2018) maintain that the question time presented an opportunity for inquisition, a time by the opposition to challenge and expose the inefficiencies of government in power. As a result, the ministers would do everything to avoid such engagement by constantly staying away from such sessions.

In addition, the Public Account Committee (PAC) was subjected to similar fate. Adamolekun (1974) stated that  
 “between 1960 and 1965, the effective functioning of the PAC was hampered by the uncooperative attitude of the senior public servants, the limited knowledge of the members concerning their responsibilities, the high turnover rate of membership and more importantly the preponderance of pro-government members on the committee including the chairman”. (Adamolekun, 1974).

The military incursion into the Nigerian Public sector further deepens the crisis of public accountability in Nigeria. The takeover of power by the military in 1966 further plunged the country into state with total disregard public sector accountability. Part of the claim by the military to grab power was to rid the country of corruption. On the contrary reports showed that subsequent military regime was more corrupt than their predecessor. The declension in public sector accountability was at its lowest ebb under the military era (Omolehinwa, 2005). Adejuwon (2014) submitted that “each military government was known for its abuse of power, lack of transparency and accountability. Since the governments were being controlled by the military, there was no system of checks and balances”. The military created a system of corruption in Nigerian public service where officials need not be accountable for their actions and the citizens do not have the right to question them (Owolabi, 2007).

The height of corruption in the military was notably under the regimes of General Ibrahim Babangida and General Sanni Abacha (Adejuwon, 2014). General Babangida, upon assuming office disregarded all the

The event following the death of General Sanni Abacha revealed the grand corruption that dominated the regime. Initially the government claimed to institute accountability mechanisms especially with the setting up of Petroleum Special Tax Fund headed by General Buhari. There were records of successes with the PTF

anti-corruption effort of his predecessors. Public officers dismissed for corruption related issues were reinstated back to their offices with full complements of lost benefits, especially the Governors. Under the regime, accountability culture was at its lowest ebb as terms such as settlement and embezzlement were the order of the day (Oyediran and Nwosu, 2005).

Corrupt practices under the Babangida regime include:

- Misappropriation of \$2 billion Gulf war windfall in 1991
- 30% of oil revenue diverted to frivolous uses throughout the time.
- Huge extra-budgetary spending: 1989 = = N=15.3b, 1990= N23.4b, 1991= N35b, 1992=N44.2b, 1993 (by August) = N59billion.
- \$200 million siphoned from the Aluminium Smelter project.
- =N= 400million wasted on Better life project
- Colossal Corruption at the NNPC, e.g. \$101 million for the purchase of strategic Storage facilitation (Lawal and Ariyo, 2006).

notably in the area of infrastructural development. Nonetheless, the death of Abacha revealed the depth of corruption and absence of accountability in the government (Ali, 2013). The finance Minister to the Government refunded a sum of \$45million allegedly given to him by his Principal. The extent of corruption

under the government became manifest following his death.

#### Abacha's Loot from the Nigerian Economy

| Break Down                | Amount                                                                      | Bank                                                              |
|---------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------|
| February 6, 1995          | \$4 million & £2 million                                                    | Australia, New Zealand, London Branch Banking group               |
| February 27,              | 1995 \$4 million & £2million                                                | ANZ, Frankfurt                                                    |
| July 8, 1995              | \$5 million & £2million plus £2m in travelers cheques                       | Bank in Liechtenstein AG, Vaduz.                                  |
| December 29, 1995 Bankers | \$5 million                                                                 | Trust Company, London                                             |
| March 28, 1996            | \$5 million & £3million requested by Abacha CBN ran out of foreign currency | Bankers Trust Company, Frankfurt<br>Banque Baring Brother, Geneva |
| May 29, 1996              | \$5 million & £5million. The Bank ran out of pounds.                        | Barclays Bank London, Banque Edouard Constant Generale            |
| June 20, 1996             | \$30million & £5million                                                     | Banque Nationale de Paris, Geneva.                                |
| August, 20, 1996          | \$30million & £15million                                                    | Banque Nationale de Paris, Basel                                  |
| September 24, 1996        | \$50million                                                                 | Citibank N.A London                                               |
| September 30, 1996        | \$50million & £3million                                                     | Citibank New York & N.A Luxembourg                                |
| November 26, 1997         | \$24 million                                                                | M.M Warburg and Company, Hamburg                                  |

Source: Adejuwon, (2014): Enhancing Public Accountability and Performance in Nigeria: Periscoping the Impediments and Exploring the Imperative Measures

According to Etim et al (2020), the failure of the successive military regimes in the area of accountability partially prompted the agitation for the return of democratic rule in Nigeria. However, the call for public sector accountability despite the democratic governance has remained a mirage even after over 20 years of democracy since 1999 (Etim et al, 2020). The trend of unaccountability in the public service continued in the fourth republic. No arm of government was immune from the scourge.

The legislative arm in the fourth came under public condemnation several times due to lack of transparency and accountability. The leadership of the National Assembly from Chief Enwerem, Chuba Okadigbo and Wabara were all removed owing to acts of corruption and lack of accountability leveled against them (Ogundiya, 2012). Madam Patricia Etteh, the first female speaker of the House of Representatives was forced to resign on allegation of misappropriation of public funds. Senator Iyabo Obasanjo was also involved in mismanagement of funds in the health ministry while she superintends.

The Vice President Alhaji Atiku Abubakar was not left out of the circle of corrupt tendencies. He was alleged to have diverted funds meant for Petroleum Technology Development Fund (Mohammed 2013; Ogundiya, 2012). The lack of accountability and transparency is further evident in the management of public fund under the administration of Chief Obasanjo, when the Federal government gave USD2 billion to the National Political Reform Conference (NPRC) without following constitutional procedure through seeking the approval by the National Assembly (Yunusa, 2009).

Under the Yar Adua Administration, there was a strong resolve to combat corruption and adhere to the rule of law and due process. On the other hand, the events that transpired under the regime betrayed that resolution. Nwankwo et. al, (2015) noted the case of the former Governor of Delta State, James Ibori, who convicted in the United Kingdom for an offence he was declared innocent by the Nigerian Judicial system was a dent a on the judicial system in Nigeria. The Speaker of the house representative, Oladimeji Bankole also came under the spotlight of investigation by the EFCC, for allegedly mismanaging public funds (Mikai and Yusuf, 2014). Nwankwo (2015) stated that despite the effort of the EFCC to bring the high profile cases to justice the whole process proved abortive. In addition, the award of public contracts did not follow due process while the civil servants aided and abetted the unscrupulous practices by falsifying reports and impeding the implementation of development agenda (Eneanya, 2010).

The trend of unethical practices and lack of accountability continued with Jonathan administration. Ijewereme (2015) harped on the weakness of the Jonathan administration to confront corruption the allegations against public officials. Mikail and Yusuf (2014) observed different attempt by the Jonathan administration to cover up prominent corruption cases, especially the case of Arumah Otteh reinstatement as Director General of Security and Exchange Commission following her suspension by the Federal Legislative house for allegations of financial mismanagement. The pardon granted Alamieyeseigha, the former Governor of Bayelsa in the face of corruption charges generated widespread criticism of the administration.



The Buhari administration appeared to have been elected solely for the purpose of fighting corruption (Sawyer, 2025). It introduced a number of measures to address the lack of accountability which included the Treasury Single Account (TSA), Bank verification Number (BVN) and a number of other mechanisms. According to Malami (2017), the administration was able to exit about 23000 ghost workers from the payroll, which should cost the Government billions of naira.

Despite the effort to stamp out the perennial culture of unaccountability, the administration continued to battle with the problem of lack of transparency and accountability in the civil service. By 2018, the phenomenon of ghost workers had continued unabated despite the biometric verification introduced to address the problem. Thousands of ghost workers continued to benefit from the payroll costing the nation billions of naira (Inuwa, 2021).

Sawyer (2025) noted the inefficiencies of the mechanisms set up to address the challenge and the compromise on the part of the civil servants. In addition to the ghost worker scandal, the problem of procurement fraud also dented the administration

### **Enforcement of Accountability In Nigerias Public Service**

Agara and Olarinmoye (2018) emphasize the fact that in view of the power inherent in the public service and possibility of abuse of that power by state officials in relation to the citizens, a number of measures are put in place to check the powers of the service and one of which is the public complaint commission usually refer to as the ombudsman. The ombudsman serve as accountability mechanisms to check the relationship between the public institutions and the citizenry, and to ensure there is compliance with the public service rules. The return of Nigeria to democracy heralded institutions such as the Code of Conduct Bureau (CCB),

image. Contracts were inflated and awarded to unqualified firm linked to powerful officials (Sawyer, 2025). Budget padding became major highlight of the administration especially in the legislature.

President Buhari accused the National Assembly of increasing the budget by 90billion with projects without justification. Similarly, the 2020 budget was said to have been increased by 264 billion with projects considered unpatriotic by the National Assembly. The height of unaccountability was reported when billions of naira were mismanaged under dubious circumstances (“snake swallowed it”) creating a mess of the corruption effort (Inuwa, 2021).

Two years into the President Tinubu administration, the EFCC has revealed cases of irregularities in the awards of contracts, especially infrastructure. There are reported cases of inflation of contract and disregard of merit in the process (Nkpe and Akanle, 2023). In addition, appointments appeared to be influenced mainly by nepotism and family loyalties over competence (Sawyer, 2025).

independent Corrupt Practises and other related Offences Commission (ICPC), Economic and Financial Crimes Commission (EFCC) (Etim et al, 2020). Apart from many of the listed which were established under the Olusegun Obasanjo administration, there were more recent ones that were established under the Buhari Administration which include the Treasury Single Account (TSA) and the Integrated Payroll and Personnel Information System (IPPIS) (Adeyeye et al, 2020). Despite many of the institutions to enforce accountability among public officials, the outcome of their performance has generate mixed feeling amongst Nigerians (Ocheni, 2016).

Adejuwon 2014 stated that

“though Nigeria has formulated various legal instruments and established a number of watchdog institutions (like EFCC, ICPC, Code of Conduct Bureau) for regulating and monitoring the ethical behaviour of its public officials. However, despite the existence of a number of legal instruments and watchdogs institutions for regulating and monitoring the ethical standards of public officials, and the adoption of multipartysm, the management of public affairs and institutions by those who are entrusted with positions of authority in the country has not improved” (Adejuwon, 2014).

According to Transparency International's Corruption Perceptions Index (2023), it is obvious that Nigeria indicated a very low score on the matter of public sector accountability and transparency. This has created a huge deficit of trust between the people and the government.

Okoye (2025) averred that while several anti-corruption efforts have been made by the Government, the effectiveness of those institutions is under question due to lack of political and institution.

### **Role of Ethical Leadership In Fostering Accountability**

According to Brown et. al. (2005), ethical leadership set the modus operandi for the entire work environment. Through this leadership style, employees feel empowered and encouraged to make ethical decisions. In addition, ethical leadership styles promote accountability and transparency which are highly essential to the public service. In a work environment where ethical behaviour is the hallmark of leadership, the leadership pattern becomes the culture that permeates all levels of the organization, ensuring that the employees strictly abide by ethical standards in their interaction with the public (Okorie et. al, 2025). Through this approach, trust is enhanced, corruption is reduced and there is greater citizens confidence in the public service (Wijekesera and Fernando, 2018)

Buye (2021) submitted that there are a lot of benefits with the enthronement of ethical leadership in public organisations. As a result of the qualities inherent in ethical leadership, certain virtues of honesty, integrity, impartiality and transparency which promote improved results, suffuses the work environment. These virtues, if allowed to prevail in the work environment build confidence and enhance reputation of employees. Furthermore, ethical leadership negates dishonesty, corruption and attributes that negatively affects the morale of workers. through ethical there is prudent management of resources as a result of the accountability that prevails. buye concluded by emphasizing that ethical leadership is required at all times to ensure that ethical principles and values documented as codes of conduct are adhered to.

In addition, Buye (2021) put it that the concern of public institution is to create ethical leadership. By so doing, ethical culture is promoted in the public organization. This will become evident through subjecting to ethical codes of conduct, ethical training. Ethical leadership attempt to proffers solutions and give meaning to employee work by ensuring decisions are based on moral values (Avolio et al, 2011). Ethical leadership promotes progressive ethical culture in the organization. Ethical leadership devotes attention to reproducing leadership of like minds, for instance, a square peg in square hole rather than personality or political considerations but creating a work environment governed by fairness and articulated set of rules. (Buye, 2021)

Okoye (2025) conducting a research on ethical leadership in public administration in Nigeria, discovered that ethical leadership is a critical factor in balancing public trust and bureaucratic efficiency. the findings from the research revealed that ethical leadership significantly impact public trust directly and with similar effect on institutional credibility and bureaucratic efficiency. Ethical leadership contributes

significantly to enhance performance, public satisfaction and the reduction of corruption practices. Inherent in ethical leadership are virtues of integrity, transparency, accountability, and fairness, which are values that are often sidelined in the Nigeria's public service due to corruption and institutional framework that are not strong enough (Ezeani, 2012).

Omisore and Ezeani (2014) argued that the absence of ethical leadership has denied government the legitimacy it should enjoy from the citizenry because of frequent reports of bribery, nepotism, and misuse of public funds. This position is supported by Transparency international (2022), where it is emphasized that the introduction of ethical leadership in Nigeria's governance can combat the scourge of corruption and promotes good governance.

Okoye (2025) further maintained that the relevance of ethical leadership cannot be over emphasized in the contemporary Nigeria public service. With ethical leadership in Nigeria's public service, public servants can make decisions that are fair, transparent and accountable. Through ethical leadership in the public service, public trust is built and sustained. In another sense, the introduction of ethical leadership in governance compels citizens to submit to rules and the democratic tenets. Okoye (2025) added that ethical leadership and bureaucratic effectiveness are mutually reinforcing and this combination can catalyse a responsive, responsible and result oriented public service.

Adebayo and Ojo (2020) found out that ethical leadership enhances accountability in Nigeria's public service. This is a conclusion drawn from a study carried out on the public service. The study discovered that there is a significant correlation between ethical behavior and improvement in public trust and transparency. Through the survey conducted on federal civil servant, they reported that ethical leadership in the public service reduced corruption and improved compliance with due process. In the same vein, Okafor (2019) found out that where ethical leadership is practiced, employees demonstrate high morale, stronger commitment to serve, and greater respect for values that institutions hold dear. the study gleaned that ethical leadership reduced absenteeism, improved decision making and minimize the interference of politics.

Similarly, Odeh and Oladipo (2021) came out with a finding on the role of ethical leadership and public trust in public institutions from three states in Nigeria. the study discovered that lapses in ethics such as favouritism, opaque recruitment processes and selectivity in the administration of justice were mainly the cause of public distrust of government. The researchers recommended that strong ethical culture

with its enforcement is a necessary measure to bridge the gap.

In addition, Bello and Abubakar (2018) focused their research on the relationship between ethical leadership and performance of bureaucracy in Nigeria's health sector. The study came out with a finding that healthcare institutions that allow ethical leadership administer satisfactory services to patients and resources in such institutions are more efficiently utilized. On the other hand, their research proved otherwise where ethical practice is not allowed, which implies that administrative delays, resource mismanagement and staff demotivation dominate the environment where ethical standard is lacking.

### Conclusion

The culture of unaccountability in the Nigerian public service is historical and has remained perennial and intractable despite the measures and mechanism by different administration to correct the anomaly. The problem irrespective of its persistence does not defy solution. The institutional mechanisms in place have continued to record batches of success in their effort, while the problem has gained ascendancy with the succeeding of administrations. This revealed that accountability mechanisms are yet to fully contain the menace before it. This paper as much as it recognizes and acknowledge the role of accountability institutions such as the EFCC, ICPC, Code of Conducts and other mechanisms in place to address the challenge of unaccountability in the public service, will however recommend that the attention of Government should shift to promotion of ethical leadership while at the same time nothing should undermine the support hitherto enjoyed by existing mechanisms in place to enforce accountability. Ethical leadership and its integration into the core governance process is a foolproof measure of sanitizing the public sector cum restoring integrity and transparency. This might require the government revisiting the criteria for recruitment and appointment into the public service. It is imperative that the Government takes bold steps towards infiltrating the public service with ethical leadership which will in turn deliver on the goal of engendering accountability culture in the public service. The government should initiate the policies and strategies that will promote the enthronement of ethical leadership in the public sector rather than totally relying on or strengthening the anti-graft laws.

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## Influence of Blockchain on Transparency and Reliability in Digital Financial Reporting

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### Abstract

*The aim of the study is to explore the influence of blockchain on transparency and reliability in digital financial reporting. The current study will help to fill these gaps by delivering a detailed empirical research on the efficacy of blockchain in financial reporting. This study employed a quantitative study as the research design, while data gathering was done through a survey approach used on professional accountants in Delta and Anambra States, Nigeria. The population that was targeted consisted of about 550 professional accountants who were employed in both the states. The research applied the multivariate regression model to investigate how Blockchain Distributive Technology (BDT) impacted the three dimensions of financial reporting quality, which are TRFR, RLB, and TIM. The study revealed that BDT impacted the three dimensions of financial reporting quality, which were the TRFR, RLB, and TIM. The result also shows that blockchain technology has a huge positive effect on transparency, reliability, and timeliness of professional accountants in Delta and Anambra States in Nigeria. Both hypotheses under test demonstrate that the null is rejected, which means that the adoption of blockchain can significantly improve the quality of reporting in various aspects. The study concluded that blockchain is not a new digital technology, but a disruptive service that can change the traditional financial reporting to a more transparent, trustworthy, and timely exercise. It was recommended that smart contracts and distributed ledgers are blockchain mechanisms that organisations should embrace to make sure that all financial records are invisible and traceable.*

**Keywords:** Blockchain, Transparency, Reliability, Timeliness, Digital Financial Reporting

### Introduction

Digital financial reporting is becoming more embracing and digitalized with blockchain that facilitates transparency, security, and automation. Its adoption minimises the fraud risks, removes the constraints of the centralised systems, and avails the operations with access to trusted data (Rawashdeh, 2024). In the worldwide economy, blockchain enhances the incorporation of computerized platforms, consistent auditing, and adherence to global criteria (Mohammad et al., 2025). Its application has an international nature, and this aspect is particularly valid because countries have varied approaches to integrating the technology in accounting systems (Ballantine et al., 2024).

Consequently, considering previous research on the effects of blockchain on financial reporting will indicate that there are gains and constraints. Rawashdeh (2024) focused on the trust gap bridging based on blockchain and smart contracts, whereas Anwar, et al. (2022) concentrated on the theoretical frameworks and did not provide empirical evidence.

Fahdil et al. (2024) also talked about the transformative nature of blockchain in auditing, but did not suggest how this could be applied in practice. The Bellucci article presents a literature review; however, the analysis of the literature was based on the theoretical side, without practical validation (Bellucci et al., 2022). The current study will help to fill these gaps by delivering a detailed empirical research on the efficacy of blockchain in financial reporting, such as reduction of costs, improvement of transparency, and enhancement of data accuracy. Nevertheless, even though there has been an increasing interest in the blockchain technology in the sphere of financial reporting, there is still a considerable knowledge gap on the all-encompassing impact of the technology on the financial reporting processes and the creation of the integration models with other digital technologies (Johnson & Okoye, 2023). In addition, the absence of standardised models of integrating blockchain in different financial systems across the world makes the

process of attaining consistent and reliable reporting challenging (Cai et al., 2024).

This thus necessitates more studies to accomplish these gaps and offer practical recommendations to improve the effectiveness of blockchain in financial reporting. The objective of the study is to explore how blockchain technology can transform financial reporting within the framework of digital accounting and to find out what opportunities might the implementation of blockchain technology in an international environment have.

### Objectives

The main objective of the study investigate the impacts of blockchain technology on the transformation of financial reporting in the digital accounting era, with a focus on its international applications.

1. To examine how blockchain technology improves transparency in financial reporting.
2. To assess the impact of blockchain on the reliability of financial statements.
3. To evaluate how blockchain enhances the timeliness of financial reporting in the digital accounting era.

### Research Questions

1. To what extent does blockchain technology improve transparency in financial reporting?
2. How does blockchain adoption impact the reliability of financial statements?
3. In what ways does blockchain enhance the timeliness of financial reporting in the digital accounting era?

### Research Hypothesis

H<sub>01</sub>: Blockchain technology has no significant effect on the transparency of financial reporting.

H<sub>02</sub>: Blockchain technology has no significant effect on the reliability of financial statements.

H<sub>03</sub>: Blockchain technology has no significant effect on the timeliness of financial reporting.

### Literature Review

A growing body of literature has examined the influence of blockchain on financial reporting particularly on enhancing transparency and reliability. Rawashdeh (2023) highlights that smart contracts allow greater trust and transparency, yet does not explain how the two aspects can be integrated into greater digital reporting services. Another topic covered by Johnson et al. (2023) is the accounting procedures where the analysis is not empirically supported, yet the authors indicate the emphasis on automation. Other people have extended the discussion to the reliability and auditability of the data: Fahdil et al. (2024) research the accuracy of the financial data, and Bellucci et al. (2022) explain the potential of

continuous auditing, yet both of the studies do not deal with the issue of regulatory and compliance challenge as suggested by Smith and Castonguay (2020).

Regarding the systems design, Amalia and Pratolo (2024) suggest conceptual models of blockchain-based accounting systems, although their framework fails to consider the latest technological developments, which is criticized by Dyball and Seethamraju (2022), who indicate the effectiveness of blockchain in lowering the costs of reporting and fail to address the constant security threats. The analysis is also extended to the digital marketing and banking settings by Fayvishenko et al. (2023) and Prokopenko et al. (2022), but their results can be applied to the financial reporting only partially. Similarly, Gai et al. (2023) give an insight into the adoption of blockchain globally but does not take the interdisciplinary methodology that Sheela et al. (2023) pursue, yet the study still lacks empirical basis. Silva et al. (2022) present a research agenda in the future but neglect to interact with the changing state of regulation noted by Li and Juma'h (2023).

A number of researches concentrate on economic and technical advantages of blockchain. Zhang (2024), the impact of blockchain technology on financial markets and its future

trends: An economic perspective based on data analysis, whereas Danach, et al., (2024) examine the factors of adoption without empirical data. The idea of fraud detection is also not novel since Ajayi-Nifise et al., (2024), discuss the possibility of blockchain in addressing the problem of fraudulent reporting, yet they do not take into account the broader economic context.

Ghode, et al., (2022) highlight the hindrance of adoption at the early stage, contrary with Kitsantas, (2022), who explores the IT controls of private blockchains, but fails to consider how they can be integrated with the enterprise resource planning (ERP) systems.

Combined, the existing literature can be viewed as rather disjointed in its assessment of the role of blockchain in financial reporting. Some of them give emphasis on transparency whereas others emphasize on automation, accuracy, or cost minimization. Nevertheless, there are not many publications that strive to integrate these dimensions into a single model that would allow proving the overall efficiency of blockchain to achieve more transparency and reliability. This gap explains why an interdisciplinary, integrated, and empirically based analysis is needed.

The current research attempts to address this requirement by integrating statistical analysis with inter-disciplinary expertise in developing a comprehensive framework to evaluate the influence of blockchain on financial reporting. As far as the researchers can conclude, most of the previous research

is mostly theoretical or situation-specific, the present research offers practical suggestions of how blockchain use could be enhanced in various financial systems. Comprehensive, the literature illustrates that blockchain has the potential of enhancing transparency, reliability of data, timeliness to bolster trust in digital accounting, and at the same time, points to the dire need to conduct additional empirical and regulation-driven research.

### Methodology

This study employed a quantitative study as the research design to find out the impact of the blockchain technology on the quality of financial reporting in the digital accounting era. Data gathering was done through a survey approach used on professional accountants in Delta and Anambra States, Nigeria. The population that was targeted consisted of about 550 professional accountants who were employed in both the states. From this population, the study utilised a convenience sampling technique, which ensured the participation of respondents who were available and willing to complete the survey. In total, 100 accountants were selected, representing 18.2% of the target population. This proportion was considered adequate since it exceeds the commonly accepted 10% rule of thumb for sufficient sample size in survey-based research.

A structured questionnaire was used to collect data on the basis of 5-point Likert scale. The questionnaire had questions that sought to evaluate how the respondents understand the concept of blockchain distributive technology (BDT) and its perceived influence on the quality of financial reporting with specific reference to transparency, reliability and timeliness.

The following regression models guided the data analysis:

$$BDTi = \alpha + \beta_1 TRFRi + \beta_2 BDTi + \beta_3 BDTi + U_i$$

Where:

BDT = Blockchain Distributive Technology  
(Dependent Variable)

TRFR = Transparency (Independent Variable)

RLB = Reliability (Independent Variable)

TIM = Timeliness (Independent Variable)

$\alpha$  = Constant

$\beta_1$  = Slope Coefficient

$U_i$  = Stochastic Disturbance Term

$i$  = Individual Respondent

The analysis involved descriptive statistics and multivariate regression techniques. Descriptive statistics summarised the mean responses and distribution patterns, while regression analysis tested the effect of blockchain distributive technology on the dependent variables of financial reporting quality. Each construct was measured by aggregating the mean responses of related questionnaire items.

### Decision Rule

The decision rule was pegged at a 5 percent level of significance ( $p < 0.05$ ). A value of 0.05 or more showed that the null hypothesis was not rejected whereas a value of 0.05 or less meant that the relationship between blockchain and financial reporting quality was statistically significant resulting in rejection of the null hypothesis and the validation of a significant relationship between blockchain and financial reporting quality.

### Results and Discussion

The research sent questionnaires to professional accountants in Delta and Anambra States in Nigeria. All the 100 questionnaires were filled and returned and yielded a 100 percent response rate. The large response rate enhanced the accuracy of the results and provided a strong foundation on which to quantify them.

The average scores of responses to all items of the 5-point Likert scale have been calculated. These scores give information regarding the perception of the respondents on the use of blockchain distributive technology (BDT) in the transparency, reliability, and timeliness of financial reporting.



Table 1. Blockchain Distributed Technology and Financial Reporting Quality

| S/N                 | Questions                                                                                                        | SA | A  | UD | D | SD | Mean | N   |
|---------------------|------------------------------------------------------------------------------------------------------------------|----|----|----|---|----|------|-----|
| Transparency (TRFR) |                                                                                                                  |    |    |    |   |    |      |     |
| 1                   | Blockchain distributive technology can enhance the security of financial transactions.                           | 82 | 18 | -  | - | -  | 4.74 | 100 |
| 2                   | Blockchain distributive technology can reduce the risk of fraud and hacking in financial reporting.              | 77 | 23 | -  | - | -  | 4.68 | 100 |
| 3                   | Blockchain distributive technology can provide a decentralized and transparent platform for financial processes. | 79 | 18 | 1  | 2 | -  | 4.66 | 100 |
| 4                   | Blockchain can improve the openness and accessibility of financial data to stakeholders.                         | 76 | 21 | -  | 3 | -  | 4.58 | 100 |
| 5                   | Blockchain can increase the transparency of financial reporting quality.                                         | 75 | 23 | -  | 2 | -  | 4.59 | 100 |
| 6                   | Blockchain can provide a tamper-proof record of financial transactions.                                          | 84 | 15 | 1  | - | -  | 4.74 | 100 |
| 7                   | Blockchain can improve the audit trail and enhance external audit processes.                                     | 81 | 15 | 3  | 1 | -  | 4.64 | 100 |
| Transparency (TRFR) |                                                                                                                  |    |    |    |   |    |      |     |
| 1                   | Blockchain distributive technology can enhance the security of financial transactions.                           | 82 | 18 | -  | - | -  | 4.74 | 100 |
| 2                   | Blockchain distributive technology can reduce the risk of fraud and hacking in financial reporting.              | 77 | 23 | -  | - | -  | 4.68 | 100 |
| 3                   | Blockchain distributive technology can provide a decentralized and transparent platform for financial processes. | 79 | 18 | 1  | 2 | -  | 4.66 | 100 |
| 4                   | Blockchain can improve the openness and accessibility of financial data to stakeholders.                         | 76 | 21 | -  | 3 | -  | 4.58 | 100 |
| 5                   | Blockchain can increase the transparency of financial reporting quality.                                         | 75 | 23 | -  | 2 | -  | 4.59 | 100 |
| 6                   | Blockchain can provide a tamper-proof record of financial transactions.                                          | 84 | 15 | 1  | - | -  | 4.74 | 100 |
| 7                   | Blockchain can improve the audit trail and enhance external audit processes.                                     | 81 | 15 | 3  | 1 | -  | 4.64 | 100 |
| Timeliness (TIM)    |                                                                                                                  |    |    |    |   |    |      |     |
| 14                  | Blockchain can enhance the efficiency of financial reporting processes.                                          | 78 | 22 | -  | - | -  | 4.69 | 100 |
| 15                  | Blockchain can improve the timeliness of financial reporting.                                                    | 79 | 18 | 3  | - | -  | 4.65 | 100 |
| 16                  | Blockchain can reduce delays in verifying and processing financial transactions.                                 | 72 | 25 | -  | 3 | -  | 4.52 | 100 |
| 17                  | Blockchain can lower the cost and time involved in preparing financial reports.                                  | 77 | 20 | 3  | - | -  | 4.67 | 100 |
| 18                  | Blockchain can enable real-time access to financial information.                                                 | 78 | 22 | -  | - | -  | 4.69 | 100 |
| 19                  | Blockchain can speed up decision-making processes by providing timely financial data.                            | 71 | 24 | -  | 5 | -  | 4.45 | 100 |
| 20                  | I am willing to adopt blockchain technology to improve the timeliness of my financial reporting practices.       | 79 | 18 | 1  | 2 | -  | 4.66 | 100 |

Source: Researchers Compilation and computation (2025)

Table 1 revealed the study investigated on the role of blockchain technology in enhancing financial reporting quality with emphasis on transparency, reliability, and timeliness. A total of 100 valid questionnaires were analyzed, representing a 95.2% response rate from the targeted professional accountants. The mean responses were used to evaluate the perception of respondents on the influence of blockchain distributive technology in financial reporting.

#### Transparency of Financial Reporting (TRFR)

Mean scores of the responses that have to do with transparency have a consistent high score of 4.58 to 4.74. The majority of the respondents highly concurred that blockchain makes financial transactions safer (M = 4.74), less prone to fraud and hackers (M = 4.68), and generates a record of financial transactions that cannot be tampered (M = 4.74). Also, blockchain was seen to enhance audit trails and external audit procedures (M = 4.64) and increase transparency of financial information (M = 4.58).

That means that the blockchain technology is generally considered a trust-increasing mechanism of financial reporting, as it allows it to be transparent due to its immutable decentralized registry. These results confirm earlier research which notes that blockchain offers a solution to manipulation prevention and real-time verification of financial records (Dai and Vasarhelyi, 2017; Schmitz and Leoni, 2019).

#### Reliability of Financial Reporting (RLFR)

The results in reliability are also high with the mean scores of responses varying between 4.41 and 4.74. It was found that the respondents concurred that blockchain improves the accuracy of the financial reporting (M = 4.74), the reliability of the financial reporting (M = 4.72), and the likelihood of manipulation or falsification (M = 4.68). It was also perceived that blockchain was significant in meeting regulatory standards (M = 4.41) and enhancing stakeholder trust (M = 4.67).

This implies that blockchain enhances the accuracy, completeness, and validation of the information of financial statements among all the users. The results align with the suggestion by Kokina et al. (2017) and Yermack (2017) that blockchain enhances the credibility of the accounting data because it eliminates discrepancies and the necessity to rely on third parties.

#### Timeliness of Financial Reporting (TIM)

The mean scores under timeliness also give high responses with a range of between 4.45 and 4.69. The respondents concurred that blockchain enhances efficiency of reporting practices (M = 4.69), increases timeliness of financial reporting (M = 4.65), decreases delays in verification of transactions (M = 4.52), and allows real-time access to financial information (M = 4.69). Another way in which blockchain was viewed to save the financial reporting cost and time (M = 4.67) and accelerate decision-making (M = 4.45).

These findings suggest that blockchain can revolutionize the rate at which financial data are prepared and shared which is a key aspect in the digital accounting age. This is in line with the works of PwC (2020) that observed that blockchain enabled non-stop auditing and virtually real-time reporting that enhanced responsiveness to the stakeholders.

The resultant mean scores show that the respondents have a strong perception of blockchain as an instrument of enhancing the quality of the financial reporting on all the three constructs. The strengths of blockchain in terms of providing better security of transactions (M = 4.74), providing more accurate reports (M = 4.74), and providing a tamper-proof record keeping (M = 4.74) received the highest ratings showing a massive support of using blockchain.

#### Regression Analysis

The research applied the multivariate regression model to investigate how the Blockchain Distributive Technology (BDT) impacted the three dimensions of financial reporting quality, which were the Transparency (TRFR), Reliability (RLB), and Timeliness (TIM). The measures of each construct were obtained by having five corresponding questions grouped together and the overall mean score of the respondents under each group used as the proxy of the dependent variables. Blockchain distributive technology was used as the independent variable.

Diagnostic tests like autocorrelation could not be used since the data which was used in this study are cross-sectional. On the same note, no multi-collinearity tests were carried out as a simple regression framework was used to undertake the analysis.

**Table 2:** Regression Result

| Equation | Obs | Const.   | BDT<br>(Coefficient) | R <sup>2</sup> | F-statistic | Prob.  |
|----------|-----|----------|----------------------|----------------|-------------|--------|
| TRFR     | 100 | 4.286367 | 0.0944939            | 0.0881         | 4.8719347   | 0.0352 |
| RLB      | 100 | 3.645636 | 0.2286607            | 0.0469         | 4.819747    | 0.0305 |
| TIM      | 100 | 3.437605 | 0.2816783            | 0.0709         | 7.481010    | 0.0074 |

Source: Researchers Analysis (2025)

In the research TRFR, RLB, and TIM, Table 2 regression analysis indicates that blockchain distributive technology (BDT) significantly and positively influences the three dimensions of financial reporting quality with a significant effect on the quality of financial reporting.

#### **Transparency (TRFR):**

BDT has a coefficient of 0.0945, a significant p-value, and an  $R^2$  of 0.0881. It means that blockchain has a positive impact on the transparency of financial reporting, but the explanatory power is rather low. The outcome proves the point that blockchain improves the security of transactions, their openness, and traceability, which are fundamental aspects of transparency.

#### **Reliability (RLB):**

To be reliable, the coefficient of 0.2287 has a greater positive relationship than transparency, with an  $R^2$  of 0.0469 and significant p-value (0.0305). This is an indication that blockchain implementation enhances the level of accuracy and reliability of financial statements thus strengthening stakeholder confidence and regulatory standards.

#### **Timeliness (TIM):**

The coefficient of 0.2817 and  $R^2$  of 0.0709 and a very significant p-value (0.0074) has shown the greatest positive influence amongst the three constructs. It means that blockchain contributes greatly to the timeliness of financial reporting, providing access to data in real-time, minimizing verification time, and making reporting more efficient.

The regression analysis proves that blockchain distributive technology has an important influence on the quality of the financial reporting in terms of transparency, reliability, and timeliness. Of these, blockchain has the most impact on timeliness, then reliability, and lastly, transparency. This can be linked to the latest research (Dai & Vasarhelyi, 2017; Schmitz & Leoni, 2019), where the authors state that blockchain helps to make reporting faster, reduce fraud, and have reliable and impeccable records. Therefore, the results emphasize the revolutionary nature of blockchain in the contemporary accounting practice, especially, the improvement of reporting in real time, fraud detection, and confidence in financial information.

#### **Discussion of Findings**

Regression analysis shows that blockchain technology has a huge positive effect on transparency, reliability, and timeliness of professional accountants in Delta and Anambra States in Nigeria. Both hypotheses under test demonstrate that the null is rejected, which means that the adoption of blockchain can significantly improve the quality of reporting in various aspects.

To be transparent, the 0.0352 p-value is insignificant, but the coefficient of 0.0945 indicates that blockchain has a statistically significant impact, although the value is moderate. The result is consistent with Anwar et al. (2022), who postulated that blockchain offers an

irreversible, verifiable register that encourages transparency and transparency in the process of financial disclosure. This in practice implies that blockchain will raise the cost of manipulating financial data, improving investor confidence and minimizing information asymmetry.

With regard to reliability, the coefficient (0.2287,  $p = 0.0305$ ) is used to show that blockchain will significantly improve the credibility of financial statements. This aligns with Putritama et al. (2025) who explain that blockchain reduces human error and fraud whereby all transactions are safely validated and time-stamped prior to being recorded in a financial ledger. Equally, Mohammad et al. (2025) point out that it enhances reliability since, with blockchain, there is no need to conduct redundant reconciliation and a centralised control will not be necessary, making the figures reported to reflect the actual economic reality.

The greatest effect lies in timeliness with 0.2817 coefficient and 0.0074 p-value that means that blockchain adoption is a factor that has a significant contribution to accelerated reporting. This is aligned with the observations made by Saheb et al. (2025), which stress that blockchain can be used to access financial information in real-time, simplify auditing, and cut delays in reporting. Almadadha (2024), goes on to reinforce this argument by emphasizing that integration of blockchain will enable stakeholders to track financial performance in real time, which will speed up the decision-making process and adherence to regulatory timeframes.

Although the positive results are achieved, the  $R^2$  values between 0.0469 and 0.0881 also indicate that blockchain although important is not the only determinant of reporting quality. Also important in the overall effectiveness of financial reporting systems are other contextual elements that include regulatory frameworks, organizational readiness and the extent of digital infrastructure. This is in line with the argument of Putritama et al. (2025) that the adoption of blockchain should be enforced with the institution and proper training of accountants to realize the entire benefits.

Overall, the findings offer a solid empirical data that blockchain enhances the financial reporting transparency, reliability, and timeliness, which is consistent with a significant part of the existing literature. Nevertheless, the comparatively low explanatory value also indicates the necessity of combined solutions in which blockchain operates in collaboration with other technological and regulatory innovations to revolutionize the accounting practices in the digital age to the full extent.

#### **Conclusion**

The researchers investigated the impact of blockchain technology on transparency, reliability and timeliness of digital financial reporting as a regression analysis. The results showed that blockchain has significant positive impact on financial reporting quality in all three dimensions, which are statistically significant. Particularly, blockchain, according to the regression findings, increased the transparency ( $p = 0.0352$ ), reliability ( $p =$

0.0305), and timeliness ( $p = 0.0074$ ) of the financial reports significantly. Based on this fact, the null hypotheses which included that blockchain technology does not significantly affect transparency, reliability, and timeliness of financial reporting were rejected. This affirmation verifies that blockchain makes financial records more accurate, minimizes manipulation and increases the rate at which transactions get registered and report.

The findings are similar to the existing literature, which highlights the immutability of blockchain and decentralised validation as the primary tools to increase trust in financial. Thus, blockchain is not a new digital technology, but a disruptive service that can change the traditional financial reporting to a more transparent, trustworthy, and timely exercise.

### Recommendations

Based on the objectives of the study, it is recommended that the following be implemented:

1. Smart contracts and distributed ledgers are blockchain mechanisms that organisations should embrace to make sure that all financial records are invisible and traceable. This will enhance transparency and reduce chances of fraud or inaccuracy.
2. The companies should be able to benchmark global practice in blockchain-based accounting, and take lessons on other nations and companies who are already implementing blockchain in their financial reporting. This will assist in coming up with strong models that are specific to Nigeria and such like situations.
3. Accounting firms and regulators are encouraged to work together and incorporate blockchain in their current reporting systems as it complies with the global financial reporting standards. This will not only be effective in improving compliance but also efficiency of financial reporting processes.

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## Financial Intermediation and Economic Growth in Nigeria

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### Abstract

*This study examined how financial intermediation affects economic growth in Nigeria, using key indicators such as bank credit to the private sector (BCPS), financial market development (FMD), interest rates (INTR), and money supply (M2). Gross domestic product (GDP) serves as the measure of growth. The research adopts an ex-post facto design, analyzing secondary data from 2001 to 2024 through multiple regression analysis to determine causal relationships. The results show that both BCPS and FMD have positive and statistically significant effects on GDP. This highlights the importance of access to private credit and the development of efficient financial markets in driving economic growth. Conversely, interest rates and money supply did not show any significant individual impact on GDP, suggesting that Nigeria's current monetary tools may not be effectively supporting growth. However, when analyzed collectively, all financial intermediation variables significantly influenced GDP, supported by a strong R-squared value (0.9952) and a high F-statistic, indicating a well-fitted model. The findings align with the Financial Intermediation Theory, McKinnon-Shaw Hypothesis, and Endogenous Growth Theory, and are consistent with earlier studies in Nigeria. The study recommends improving access to credit, deepening financial markets, revising monetary policy approaches, and advancing financial inclusion. It contributes to existing literature by reinforcing the crucial role financial systems play in fostering sustainable economic development and offers practical insights for policymakers, financial institutions, and researchers aiming to strengthen Nigeria's growth trajectory.*

**Key Words:** *Financial Intermediation, Bank Credit to the Private Sector, Financial Market Development, Interest Rates, Money Supply and Gross Domestic Product*

### Background to the Study

Financial intermediation plays a vital role in economic development, especially in emerging economies like Nigeria. It involves the movement of funds from savers to borrowers through institutions such as banks, supporting investment and consumption that drive GDP growth. This study explores the relationships between key financial indicators—bank credit to the private sector (BCPS), financial market development (FMD), interest rates (INTR), and money supply (M2)—and economic growth in Nigeria.

BCPS reflects the extent of credit available to the private sector, which is essential for expanding business operations and boosting productivity. Olowofeso et al. (2016) found that private sector credit had a significant positive impact on sectoral GDP in Nigeria, reinforcing the idea that credit access can stimulate economic activity. FMD also contributes significantly to growth by improving capital allocation, risk management, and liquidity. Efforts by the Central Bank of Nigeria (CBN), such as promoting financial inclusion and market reforms, have aimed to deepen Nigeria's financial markets. Odeniran and Udejaja (2010) found that financial development indicators, including private sector credit

and broad money stock, Granger-caused GDP growth, underlining the importance of FMD.

Interest rates influence the cost of borrowing and the incentive to save. High rates can restrict investment, while lower rates may boost borrowing and spending. Acha (2011) argued that lending rates in Nigeria often hinder growth, suggesting the need for rate policies that support investment without sparking inflation.

Money supply (M2) ensures liquidity in the economy, but its effectiveness depends on corresponding economic activity. Simply expanding M2 may not drive growth, as Odeniran and Udejaja (2010) observed no Granger-causal relationship between broad money and output.

The overall effectiveness of financial intermediation in Nigeria is shaped by institutional reforms, macroeconomic stability, and external shocks such as oil price fluctuations. Despite reforms, issues like high non-performing loans and limited infrastructure have constrained progress. Asiamah (2020) found mixed results in Ghana, emphasizing that the relationship between financial intermediation and growth can differ by context. In sum, enhancing financial intermediation—through improved credit access, deeper markets, and stable policies—remains key to Nigeria's long-term economic growth.

## Statement of the Problem

Despite the recognized role of financial intermediation in driving economic growth, Nigeria continues to face slow economic expansion, persistent inefficiencies in its financial sector, and macroeconomic instability. Ideally, a sound financial system should mobilize savings, allocate credit efficiently, and support investments that boost GDP, yet this hasn't been Nigeria's reality. Bank credit to the private sector (BCPS) remains limited, as commercial banks often prefer lending to the government or large firms, sidelining SMEs due to high interest rates, strict collateral demands, and weak risk assessment practices. Financial market development (FMD) is also shallow, constrained by market inefficiencies, low financial literacy, and limited access to formal financial services. The capital market, which should offer long-term financing, suffers from volatility and investor skepticism. Interest rates (INTR) further complicate matters—high and unpredictable rates deter private investment, while low rates reduce incentives to save, disrupting the supply of funds. Similarly, Nigeria's management of money supply (M2) has struggled to balance liquidity with inflation control, often contributing to price instability and exchange rate fluctuations. These issues raise doubts about the effectiveness of monetary policy in supporting sustainable growth. While previous research has addressed parts of the financial intermediation puzzle, fewer studies have assessed the combined effects of BCPS, FMD, INTR, and M2 on GDP. This study aims to fill that gap by examining their collective influence on economic growth and identifying structural barriers limiting the financial system's ability to drive development, ultimately offering policy recommendations to improve Nigeria's financial sector and economic performance.

## Objectives of the Study

1. To analyze the impact of bank credit to the private sector (BCPS) on economic growth (GDP) in Nigeria.
2. To examine the relationship between financial market development (FMD) and economic growth in Nigeria.
3. To assess the effect of interest rates (INTR) on economic growth in Nigeria.
4. To evaluate the influence of money supply (M2) on economic growth in Nigeria.

## Research Hypotheses

1. **H01:** Bank credit to the private sector (BCPS) has no significant impact on economic growth (GDP) in Nigeria.
2. **H02:** Financial market development (FMD) does not significantly influence economic growth in Nigeria.
3. **H03:** Interest rates (INTR) have no significant relationship with economic growth in Nigeria.

4. **H04:** Money supply (M2) does not significantly affect economic growth in Nigeria.

## Conceptual Review

### Financial Intermediation

Financial intermediation is central to economic growth, as it enables the smooth transfer of funds from savers to investors through institutions like commercial banks and capital markets. In Nigeria, this process supports investment, encourages entrepreneurship, and drives productivity, all of which contribute to Gross Domestic Product (GDP) growth. Key components that influence the efficiency of financial intermediation include bank credit to the private sector (BCPS), financial market development (FMD), interest rates (INTR), and money supply (M2). These factors collectively shape the financial system's capacity to provide affordable credit, manage liquidity, and support long-term investment across economic sectors.

Despite its potential, Nigeria's financial system continues to face challenges that limit its ability to fully support economic expansion. High interest rates, regulatory bottlenecks, poor credit access for small and medium-sized enterprises (SMEs), and volatility in financial markets have constrained the positive impact of financial intermediation. Although existing research shows a meaningful link between financial development and economic performance, gaps remain in understanding how these core variables interact and affect GDP growth collectively. This study reviews the relationship between BCPS, FMD, INTR, and M2, using GDP as the primary indicator of economic performance, with the goal of offering insights that can inform better financial sector policies and improve Nigeria's economic outcomes.

**Bank Credit to the Private Sector (BCPS):** BCPS plays a key role in driving economic growth by funding business expansion and boosting productivity. In Nigeria, BCPS stood at 17.59% of GDP in 2023 (World Bank, 2023), reflecting limited credit access. While the Central Bank of Nigeria has taken steps to improve lending—reporting a 10.8% rise in broad money in 2022—challenges like non-performing loans persist. Studies by Toby and Dibiah (2022) and Abraham (2022) confirm a positive link between BCPS and GDP. To strengthen lending capacity, the CBN now requires international banks to hold a minimum capital of N500 billion by 2026 (Financial Times, 2024).

**Financial Market Development (FMD):** FMD in Nigeria focuses on strengthening institutions and instruments that mobilize and allocate capital efficiently. Reforms in the Nigerian Stock Exchange aim to boost transparency, expand investment options, and attract both local and foreign investors. A strong financial market offers businesses alternative funding sources beyond bank credit, enhancing economic resilience. Asielue (2022) notes that developed markets improve capital allocation and support growth. However, challenges like regulatory



hurdles, low financial literacy, and poor infrastructure limit progress. Addressing these barriers is essential to unlocking the full potential of Nigeria's financial markets in supporting sustainable economic development.

**Interest Rates (INTR):** INTR play a key role in financial intermediation by shaping borrowing, lending, and investment decisions. In Nigeria, high and volatile lending rates—driven by inflation, risk factors, and banking inefficiencies—have often discouraged productive borrowing, slowing economic growth. While the Central Bank of Nigeria (CBN) adjusts the Monetary Policy Rate (MPR) to manage inflation, tighter policies can raise borrowing costs. Empirical studies show mixed results: lower rates may boost investment, but risk inflation, while higher rates can ensure stability but limit growth. Striking a balance between encouraging economic activity and maintaining price stability remains a key policy challenge for Nigeria. (Akpokerere, Onojaife & Osevw-Okoroyibo, 2024)

**Money Supply (M2):** M2, which includes cash, demand deposits, and near money, plays a vital role in influencing economic activity. In Nigeria, M2 growth—shaped by government borrowing, foreign inflows, and CBN policies—can stimulate investment by lowering interest rates. However, if unmatched by output growth, it risks driving inflation. Oladipo and Akinwale (2023) found that a 1% rise in M2 led to a 0.4% GDP increase, highlighting its growth potential. Still, unchecked expansion can destabilize prices. As Manasseh and Charles (2023) note, maintaining an optimal money supply is essential to support economic growth without triggering inflation.

### **Gross Domestic Product (GDP) as a Measure of Economic Growth**

Gross Domestic Product (GDP) is a key measure of economic performance, reflecting the total value of goods and services produced within a country. In Nigeria, GDP growth is shaped by multiple factors including oil prices, agricultural output, government policies, and financial intermediation. The link between financial intermediation and GDP is both dynamic and bidirectional: efficient financial systems mobilize savings and allocate credit to productive sectors, which drives economic activity and growth. In turn, a growing economy strengthens the financial sector by expanding opportunities for lending and investment. However, Nigeria's GDP growth has been inconsistent, impacted by external shocks, insecurity, and structural imbalances. These challenges highlight the need for economic diversification and stronger financial sector reforms (Akpokerere, Osevw-Okoroyibo, Alenzeder, Eyesan, & Meshack 2024).

Financial intermediation remains central to Nigeria's development strategy. Key components—bank credit to the private sector (BCPS), financial market development (FMD), interest rates (INTR), and money supply (M2)—work together to shape economic outcomes. Access to credit, stable and competitive interest rates, deep financial

markets, and a well-managed money supply can significantly influence investment levels and GDP growth. Despite efforts to improve financial inclusion and strengthen regulatory frameworks, obstacles such as limited SME financing, high borrowing costs, and shallow capital markets persist. This review examines how BCPS, FMD, INTR, and M2 impact Nigeria's economic growth, offering insights into how financial intermediation can be optimized to support sustainable development. Strengthening these financial levers is essential for unlocking Nigeria's full economic potential and building a more resilient and inclusive economy. (Ighoroje, & Akpokerere 2022).

### **Theoretical Review**

#### **Financial Intermediation Theory**

The Financial Intermediation Theory (Schumpeter, 1911; Gurley & Shaw, 1960) highlights the essential role of financial institutions in efficiently channeling resources from savers to borrowers. By reducing transaction costs, spreading risk, and improving capital formation, financial intermediaries like banks and capital markets support economic development. In Nigeria, commercial banks serve as the primary source of credit to the private sector (BCPS), (Akpokerere & Edfiaje 2018)

enabling businesses to fund operations, invest in new technologies, and boost productivity. This flow of credit is crucial for stimulating economic activity and driving GDP growth. However, several structural challenges hinder the full effectiveness of financial intermediation in the country. These include high lending rates, stringent collateral requirements, and persistent information asymmetry between lenders and borrowers, which limit access to credit—especially for small and medium-sized enterprises (SMEs). As a result, many potentially productive investments remain unfunded, slowing down economic expansion. Strengthening the credit delivery system, improving risk assessment mechanisms, and enhancing transparency in financial transactions are necessary steps toward improving the efficiency of financial intermediation in Nigeria. By addressing these issues, the financial sector can better support private sector growth and contribute more meaningfully to long-term economic development.

#### **Endogenous Growth Theory**

The Endogenous Growth Theory (Romer, 1986; Lucas, 1988) argues that long-term economic growth is driven by internal factors such as human capital development, innovation, and financial market efficiency. Unlike traditional growth models that emphasize external inputs, this theory highlights the central role of financial intermediation in promoting productivity and technological advancement. In Nigeria, effective financial intermediation can mobilize domestic savings and direct them toward investments in education, infrastructure, and innovation—key drivers of sustainable growth. Financial market development (FMD) is particularly important, as it offers firms alternative access to capital beyond

traditional bank lending, enabling the funding of high-potential projects. A well-functioning capital market encourages entrepreneurship and continuous investment in technology, contributing to rising GDP. However, to fully harness the benefits outlined in the endogenous growth framework, Nigeria must overcome barriers such as weak regulatory oversight, low investor confidence, and limited public understanding of financial instruments. Addressing these challenges is essential for building a more dynamic financial system that supports inclusive and innovation-led economic growth. As financial markets mature and human capital investment increases, Nigeria stands to achieve more stable and internally sustained economic expansion aligned with the core principles of the endogenous growth theory.

### Empirical Review

Oyadeyi (2023) examined how financial development affects Nigeria's real sector—specifically agriculture, manufacturing, and services—using Granger-causality and a financial development index. The study found a bidirectional relationship, indicating that financial development and real sector growth reinforce each other.

Adewole et al. (2022) used Vector Auto Regression (VAR) to assess the link between financial intermediation and GDP from 1981 to 2017. Their findings showed a strong positive relationship, emphasizing the role of financial intermediation in fostering Nigeria's economic growth.

Ukoh (2023) studied the effect of financial inclusion on Nigeria's economic development. The research showed that greater access to financial services positively impacts GDP, suggesting that promoting financial inclusion can significantly enhance economic performance.

Albert et al. (2022) found that real interest rates, gross domestic savings, and private sector credit positively influence GDP, using OLS analysis from 1980 to 2019. Their results underline the importance of financial development as a driver of economic growth in Nigeria.

Adewole et al. (2022) also highlighted the importance of banks' intermediation role in allocating funds to productive sectors. Their findings confirm that efficient bank lending practices are crucial to boosting economic activity.

A 2023 study in the *International Journal of Development and Economic Sustainability* examined Nigeria's monetary policy from 1990 to 2022. It found that inflation and exchange rates significantly influence GDP, indicating that sound monetary policy is key to economic stability and growth.

Umar et al. (2021) investigated the nonlinear effects of financial development on growth using data from 1980 to 2019. They found both positive and negative shocks in financial development significantly affect economic performance, pointing to the complexity of this relationship.

Akintola et al. (2020) analyzed quarterly data from 1981 to 2015 and reported that financial sector development has a positive influence on GDP growth. This supports the

idea that improving financial services contributes to long-term economic expansion in Nigeria.

Ani and Udeh (2021) studied exchange rate impacts on economic growth between 2009 and 2018 using OLS methods. Their findings showed a positive, significant relationship, suggesting that stable exchange rate policies are essential for Nigeria's economic growth.

### Research Methodology

#### Research Design

This study uses an ex-post facto design and a quantitative approach, analyzing historical secondary data to assess the impact of financial intermediation on Nigeria's economic growth. Multiple panel regression is applied to explore causal relationships between key financial indicators and GDP growth over the study period.

#### Population and Sample of the Study

The study population includes all financial institutions in Nigeria, such as commercial and investment banks, along with regulatory bodies like the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS). It centers on macroeconomic data related to financial intermediation and economic growth. The study uses annual time-series data selected through purposive sampling, focusing on reliable and relevant financial and economic indicators.

#### Method of Data Collection

Secondary data is sourced from the CBN Statistical Bulletin, World Development Indicators (WDI), and Nigerian Stock Exchange (NSE) reports. It includes annual observations on bank credit to the private sector (BCPS), financial market development (FMD), interest rates (INTR), money supply (M2), and gross domestic product (GDP).

#### Method of Data Analysis

The study uses OLS regression to assess the link between financial intermediation and economic growth, ensuring model reliability through stationarity, multicollinearity, and heteroscedasticity tests. Data analysis is performed using EViews 10.0 econometric software.

#### Model Specification

The multiple panel regression model is specified as follows:

$$\text{LogGDP} = \alpha + \beta_1 \text{BCPS} + \beta_2 \text{FMD} + \beta_3 \text{INTR} + \beta_4 \text{M2} + \varepsilon$$

$$+ \beta_1 \text{BCPS} + \beta_2 \text{FMD} + \beta_3 \text{INTR} + \beta_4 \text{M2} + \varepsilon$$

Where:

- GDP = Gross Domestic Product (proxy for economic growth)
- BCPS = Bank Credit to the Private Sector
- FMD = Financial Market Development
- INTR = Interest Rate
- M2 = Money Supply
- $\alpha$  = Constant term

- $\beta_1, \beta_2, \beta_3, \beta_4$  = Coefficients of the independent variables
- $\varepsilon$  = Error term

## Results and Discussion

Time series data refers to observations collected at regular intervals over time, allowing researchers to analyze trends, patterns, and relationships across years. In this study, time series data from 2001 to 2024 is used to evaluate how financial intermediation affects economic growth in Nigeria. Ordinary Least Squares (OLS) regression is a statistical method employed to estimate the relationships between dependent and independent variables. Here, OLS helps quantify how indicators like BCPS, FMD, INTR,

and M2 influence GDP. The method identifies the individual and collective significance of these variables in explaining economic growth. The use of time series and OLS regression ensures that the analysis captures long-term effects and causality, this enhances the study's relevance for policymakers and financial sector stakeholders focused on sustainable economic development.

## Descriptive statistics

The descriptive statistics consists of mean, standard deviation, minimum and maximum values associated with the variables under consideration. The descriptive statistics are summarized on Table 1 below;

**Table 1: Descriptive Statistics**

|              | LOG GDP   | BCPS      | FMD       | INTR     | M2       |
|--------------|-----------|-----------|-----------|----------|----------|
| Mean         | 4.953971  | 17.08125  | 44.12458  | 15.00208 | 22.97625 |
| Median       | 5.056992  | 17.71500  | 50.70000  | 14.75500 | 12.99500 |
| Maximum      | 5.328019  | 21.27000  | 60.54000  | 18.09000 | 110.5000 |
| Minimum      | 4.339670  | 10.23000  | 19.44000  | 11.31000 | 1.070000 |
| Std. Dev.    | 0.328593  | 3.172143  | 14.56902  | 2.049267 | 27.08492 |
| Skewness     | -0.616634 | -0.698673 | -0.518256 | 0.131601 | 1.786637 |
| Kurtosis     | 1.978466  | 2.464483  | 1.659281  | 1.786914 | 5.821914 |
| Jarque-Bera  | 2.564484  | 2.239356  | 2.871884  | 1.540852 | 20.73148 |
| Probability  | 0.277415  | 0.326385  | 0.237891  | 0.462816 | 0.000031 |
| Sum          | 118.8953  | 409.9500  | 1058.990  | 360.0500 | 551.4300 |
| Sum Sq. Dev. | 2.483389  | 231.4373  | 4881.897  | 96.58840 | 16872.63 |
| Observations | 24        | 24        | 24        | 24       | 24       |

Source: E-VIEW 10.0 Output, 2025.

Table 1 presents summary statistics for the study variables. GDP has a mean of 4.95, moderate variability (SD = 0.33), is negatively skewed, platykurtic, and approximately normal ( $p = 0.28$ ). BCPS averages 17.08, with moderate spread and similar distribution characteristics ( $p > 0.32$ ). FMD shows higher variability (mean = 44.12, SD = 14.57), is negatively skewed, platykurtic, and normally distributed ( $p = 0.24$ ). INTR has low variability (mean = 15.00, SD = 2.05), is slightly positively skewed and normally distributed ( $p = 0.46$ ). M2 is highly variable (SD

= 27.08), strongly right-skewed, leptokurtic, and not normally distributed ( $p \approx 0$ ).

## Correlation Matrix

Correlation matrix actually shows the relation between independent and dependent variables. This tells the degree of correlation between the independent and dependent variables, whether there is moderate or low degree of correlation.

**Table 2: Correlation Matrix for the Independent and Dependent Variables**

|         | LOG GDP  | BCPS     | FMD      | INTR     | M2       |
|---------|----------|----------|----------|----------|----------|
| LOG GDP | 1.000000 |          |          |          |          |
| BCPS    | 0.680139 | 1.000000 |          |          |          |
| FMD     | 0.687851 | 0.646950 | 1.000000 |          |          |
| INTR    | 0.192587 | 0.145468 | 0.231135 | 1.000000 |          |
| M2      | 0.661265 | 0.609221 | 0.691669 | 0.626315 | 1.000000 |

Source: E-VIEW 10.0 Output, 2025.

GDP shows moderate positive correlations with BCPS (0.68), FMD (0.69), and M2 (0.66), indicating that increases in private sector credit, financial market development, and money supply are generally linked to

GDP growth. Its correlation with INTR is weak (0.19), suggesting a limited association. BCPS moderately correlates with FMD (0.65) and M2 (0.61), but weakly with INTR (0.15). FMD has a weak link with INTR (0.23)

and a stronger correlation with M2 (0.69). INTR and M2 also share a moderate relationship (0.63), indicating some alignment between interest rates and money supply changes.

### Multicollinearity Test

Since the data for the study are annual time series, the multicollinearity test was conducted to ascertain if the data contained multicollinearity, this is presented in table 3 below;

**Table 3: Variance Inflation Factors Multicollinearity Test**

|                            |             |            |          |
|----------------------------|-------------|------------|----------|
| Variance Inflation Factors |             |            |          |
| Date: 05/13/25 Time: 12:02 |             |            |          |
| Sample: 2001 2024          |             |            |          |
| Included observations: 24  |             |            |          |
|                            |             |            |          |
|                            | Coefficient | Uncentered | Centered |
| Variable                   | Variance    | VIF        | VIF      |
|                            |             |            |          |
| C                          | 0.005760    | 220.7121   | NA       |
| BCPS                       | 2.78E-05    | 321.3058   | 10.27968 |
| FMD                        | 1.56E-06    | 128.4553   | 12.15100 |
| INTR                       | 1.25E-05    | 109.7170   | 1.927469 |
| M2                         | 1.28E-07    | 6.020960   | 3.438765 |

**Source: Eview, 10.0 Outputs, 2025.**

Table 3 shows that BCPS and FMD have centered VIFs of 10.28 and 12.15, respectively, indicating significant multicollinearity and potential redundancy in the model. INTR has a VIF of 1.93, suggesting minimal multicollinearity, while M2's VIF of 3.44 reflects moderate but acceptable correlation with other variables. The constant term (C) has a high uncentered VIF of 220.71, which is typical for intercepts and not a cause for concern. Overall, while most variables fall within acceptable multicollinearity limits.

### Data Validity Test

Since the data are time series data, spanning for 2001-2024 (24years), the validity test was carried out using the Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test: Breusch-Pagan-Godfrey and Ramsey RESET Test in order to ascertain the validity of the data for the analysis. This is presented in Table 4 below;

**Table 4: Data Validity Test**

|                                                       |          |                     |             |
|-------------------------------------------------------|----------|---------------------|-------------|
| <b>Breusch-Godfrey Serial Correlation LM Test:</b>    |          |                     |             |
| F-statistic                                           | 0.591418 | Prob. F(2,18)       | 0.5645      |
| Obs*R-squared                                         | 1.561256 | Prob. Chi-Square(2) | 0.4581      |
|                                                       |          | Durbin-Watson stat  | 2.141178    |
| <b>Heteroskedasticity Test: Breusch-Pagan-Godfrey</b> |          |                     |             |
| F-statistic                                           | 0.339253 | Prob. F(4,20)       | 0.8481      |
| Obs*R-squared                                         | 1.599857 | Prob. Chi-Square(4) | 0.8088      |
| Scaled explained SS                                   | 0.818440 | Prob. Chi-Square(4) | 0.9360      |
|                                                       |          | Durbin-Watson stat  | 2.332775    |
| <b>Ramsey RESET Test</b>                              |          |                     |             |
| Equation: UNTITLED                                    |          |                     |             |
| Specification: LOGGDP C LOGDD LOGED LOGDSC LOGTD      |          |                     |             |
| Omitted Variables: Squares of fitted values           |          |                     |             |
|                                                       |          |                     |             |
|                                                       |          |                     |             |
|                                                       | Value    | df                  | Probability |
| t-statistic                                           | 0.216461 | 18                  | 0.8311      |
| F-statistic                                           | 0.046855 | (1, 18)             | 0.8311      |
| Likelihood ratio                                      | 0.062393 | 1                   | 0.8028      |
|                                                       |          |                     |             |
| Durbin-Watson stat                                    | 2.181705 |                     |             |

**Source: E-view, 10.0 Outputs, 2025.**

Table 4 shows no evidence of serial correlation, as indicated by the Breusch-Godfrey test ( $p = 0.5645$ ) and a Durbin-Watson statistic of 2.1412. The Breusch-Pagan-Godfrey test confirms homoskedasticity ( $p = 0.8481$ ), supported by a high  $p$ -value (0.9360) from the Scaled Explained Sum of Squares. The Durbin-Watson statistic of 2.3328 also suggests no autocorrelation. The Ramsey RESET test indicates no model misspecification ( $p = 0.8311$ ), further backed by the likelihood ratio test ( $p = 0.8028$ ). The Durbin-Watson value of 2.1817 confirms a well-specified model with reliable error terms.

### Augmented Dickey-Fuller (ADF) Unit Root Test

Testing for the existence of unit roots is a principal concern in the study of time series models and co-integration. The rationale behind this test is to avoid the problem of spurious regression which is commonly associated with time series data. The presence of a unit root implies that the time-series data under investigation is non-stationary; while the absence of a unit root shows that the stochastic process is stationary. The unit root test was conducted using the Augmented Dickey-Fuller (ADF) Unit root test as presented in table 5 below:

**Table 5: Augmented Dickey-Fuller Unit root Test**

|                                                                                                                                          |           |         |          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|----------|-----|
| Group unit root test: Summary                                                                                                            |           |         |          |     |
| Series: LOG GDP, BCPS, FMD, INTR, M2                                                                                                     |           |         |          |     |
| Date: 05/13/25 Time: 12:08                                                                                                               |           |         |          |     |
| Sample: 2001 2024                                                                                                                        |           |         |          |     |
| Exogenous variables: Individual effects                                                                                                  |           |         |          |     |
| Automatic selection of maximum lags                                                                                                      |           |         |          |     |
| Automatic lag length selection based on SIC: 0                                                                                           |           |         |          |     |
| Newey-West automatic bandwidth selection and Bartlett kernel                                                                             |           |         |          |     |
| Balanced observations for each test                                                                                                      |           |         |          |     |
|                                                                                                                                          |           |         |          |     |
|                                                                                                                                          |           |         | Cross-   |     |
| Method                                                                                                                                   | Statistic | Prob.** | Sections | Obs |
| Null: Unit root (assumes common unit root process)                                                                                       |           |         |          |     |
| Levin, Lin & Chu $t^*$                                                                                                                   | 0.18483   | 0.5733  | 5        | 115 |
| Null: Unit root (assumes individual unit root process)                                                                                   |           |         |          |     |
| Im, Pesaran and Shin W-stat                                                                                                              | 2.96382   | 0.9985  | 5        | 115 |
| ADF - Fisher Chi-square                                                                                                                  | 12.6923   | 0.2414  | 5        | 115 |
| PP - Fisher Chi-square                                                                                                                   | 14.0316   | 0.1716  | 5        | 115 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. |           |         |          |     |

Source: E-VIEW, 10.0 Outputs, 2025.

|                                                                                                                                          |           |         |          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|----------|-----|
| Group unit root test: Summary                                                                                                            |           |         |          |     |
| Series: LOG GDP, BCPS, FMD, INTR, M2                                                                                                     |           |         |          |     |
| Date: 05/13/25 Time: 12:09                                                                                                               |           |         |          |     |
| Sample: 2001 2024                                                                                                                        |           |         |          |     |
| Exogenous variables: Individual effects                                                                                                  |           |         |          |     |
| Automatic selection of maximum lags                                                                                                      |           |         |          |     |
| Automatic lag length selection based on SIC: 0 to 4                                                                                      |           |         |          |     |
| Newey-West automatic bandwidth selection and Bartlett kernel                                                                             |           |         |          |     |
|                                                                                                                                          |           |         |          |     |
|                                                                                                                                          |           |         | Cross-   |     |
| Method                                                                                                                                   | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process)                                                                                       |           |         |          |     |
| Levin, Lin & Chu $t^*$                                                                                                                   | 0.96316   | 0.8323  | 5        | 105 |
| Null: Unit root (assumes individual unit root process)                                                                                   |           |         |          |     |
| Im, Pesaran and Shin W-stat                                                                                                              | -1.00898  | 0.1565  | 5        | 105 |
| ADF - Fisher Chi-square                                                                                                                  | 24.5071   | 0.0064  | 5        | 105 |
| PP - Fisher Chi-square                                                                                                                   | 43.3563   | 0.0000  | 5        | 110 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. |           |         |          |     |

Source: E-VIEW, 10.0 Outputs, 2025.

Table 5 shows that GDP, BCPS, FMD, INTR, and M2 are non-stationary at level, as indicated by high p-values across the Levin, Lin & Chu, Im, Pesaran and Shin, ADF-Fisher, and PP-Fisher tests. However, after first differencing, stationarity is achieved. The ADF-Fisher test

( $p = 0.0064$ ) and PP-Fisher test ( $p = 0.0000$ ) provide strong evidence against the null of a unit root. These results confirm that the variables are integrated of order one,  $I(1)$ , becoming stationary after differencing and thus suitable for regression analysis in their differenced forms.

## OLS Multiple Regression Analysis

**Table 6: REGRESSION RESULT**

| Dependent Variable: LOG_GDP |             |                       |             |           |
|-----------------------------|-------------|-----------------------|-------------|-----------|
| Method: Least Squares       |             |                       |             |           |
| Date: 05/13/25 Time: 11:59  |             |                       |             |           |
| Sample: 2001 2024           |             |                       |             |           |
| Included observations: 24   |             |                       |             |           |
| Variable                    | Coefficient | Std. Error            | t-Statistic | Prob.     |
| C                           | 3.624001    | 0.075898              | 47.74849    | 0.0000    |
| BCPS                        | 0.044486    | 0.005275              | 8.433955    | 0.0000    |
| FMD                         | 0.013143    | 0.001249              | 10.52634    | 0.0000    |
| INTR                        | -0.000640   | 0.003536              | -0.180976   | 0.8583    |
| M2                          | -1.14E-05   | 0.000357              | -0.031944   | 0.9748    |
| R-squared                   | 0.995208    | Mean dependent var    |             | 4.953971  |
| Adjusted R-squared          | 0.994199    | S.D. dependent var    |             | 0.328593  |
| S.E. of regression          | 0.025028    | Akaike info criterion |             | -4.354614 |
| Sum squared resid           | 0.011901    | Schwarz criterion     |             | -4.109186 |
| Log likelihood              | 57.25537    | Hannan-Quinn criter.  |             | -4.289502 |
| F-statistic                 | 986.4066    | Durbin-Watson stat    |             | 2.171053  |
| Prob(F-statistic)           | 0.000000    |                       |             |           |

Source: E-VIEW 10.0 Output, 2025.

Table 6 above, showed the regression coefficients and the significance of the t-statistics for the independent variables; [BCPS, FMD, INTR, M2] and the dependent variable {GDP}. These results serve as the basis of discussing the findings.

The regression analysis shows a significant positive effect of BCPS sector on Nigeria's economic growth, with a coefficient of 0.044486 ( $p = 0.0000$ ). This supports the Financial Intermediation and Credit Creation theories, highlighting banks' role in allocating funds to productive sectors. Empirical studies by Adewole et al. (2022), Albert et al. (2022), and G.A.S. Publishers (2023) also confirm that private sector credit boosts GDP growth by financing industries like manufacturing and services. These findings underscore the importance of policies that encourage bank lending to drive economic development.

The coefficient for FMD is 0.013143 with a p-value of 0.0000, indicating a strong positive impact on economic growth. This supports the McKinnon-Shaw Hypothesis and Endogenous Growth Theory, both of which argue that efficient, liberalized

financial markets enhance investment, innovation, and capital use. Empirical studies by Oyadeyi (2023) and Ukoh (2023) confirm that improved financial markets promote real sector growth. The result also aligns with the Supply-Leading Hypothesis, suggesting that financial development actively stimulates economic activity through better savings mobilization and resource allocation.

The INTR coefficient is negative (-0.000640) and statistically insignificant ( $p = 0.8583$ ), indicating no notable impact on GDP during the study period. This supports the Liquidity Preference Theory, which sees interest rates as more relevant to short-term money demand than economic growth. The weak result may reflect interest rate rigidity or poor monetary policy transmission in Nigeria. Studies by Ani and Udeh (2021) and NDIC Quarterly (2022) also found limited effects of interest rates on growth. These findings suggest that interest rate changes alone may be ineffective without broader financial and policy reforms.

The regression shows a negligible coefficient (-0.0000114) with a p-value of 0.9748, suggesting

that M2 has no significant effect on economic growth. This challenges Monetarist Theory, which links money supply to output. The weak result may stem from structural issues in Nigeria, such as poor policy transmission, underdeveloped financial systems, and limited absorptive capacity. The International Journal of Development and Economic Sustainability (2023) also notes that without strong institutions, money supply growth may not boost real output. Umar et al. (2021) highlight nonlinear effects, where excess liquidity doesn't always support GDP growth under certain conditions.

## Conclusion

The study concludes that financial intermediation, particularly through credit extension to the private sector and a well-developed financial market, plays a vital role in driving Nigeria's economic growth. While interest rate and broad money supply did not individually influence GDP significantly, the overall financial intermediation framework exerts a strong combined influence on economic performance. These results validate the Financial Intermediation Theory, McKinnon-Shaw Hypothesis, and Endogenous Growth Theory, all of which emphasize the essential role of financial systems in economic expansion.

## Recommendations

The following recommendations are made:

1. Policymakers should implement strategies that promote accessible and affordable credit facilities for the private sector.
2. Strengthening market institutions and improving regulatory frameworks will boost investor confidence and deepen financial markets.
3. The ineffectiveness of interest rate and money supply in impacting GDP calls for a reassessment of monetary tools used by the Central Bank of Nigeria.
4. Expanding access to financial services will encourage broader participation in the economy and enhance the benefits of intermediation.

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## Financial Technology and Financial Performance: Evidence From Nigeria Firms

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### Abstract

*This study ascertain the impact of financial technology on financial performance of listed oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria. Quantitative data were sourced from the annual financial reports and account of the firms, point of sales data were obtained from the e-payment statistics and the annual bulletin of the central bank of Nigeria from 2014-2024. Panel unit root test was used to test the stationarity and the integration order of the variables. The ordinary least square analysis was employed to analyze the impact of the independent variable on the dependent variables. The study reveals that POS has no significant impact on ROA and DPS. While, POS has significant impact on ROE, ROCE and EPS. However, the moderating effect of firm size has no significant impact on the financial technology. The study concludes that, on the long run financial technology has significant impact on the financial performance of the listed oil and gas producing firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. The study recommends that the firms' needs to improve on their financial technology services to enhance their ROA, DPS and firm size.*

**Keywords:** Financial Technology, Financial Performance, Firm Size. Nigeria Firms

### Introduction

Over the years the Nigeria oil and gas producing firms, oil and gas firms' service stations and consumer goods firms are the fastest growing and high-risk firm as shown in their audited published financial statements. The financial performance of oil and gas producing firms', oil and gas service stations and consumer goods firms over the years has increased rapidly. This makes consumer goods firms and oil and gas producing firms' service stations operation an important sectors that impact significantly to the Nigeria economy. As much as the growth of Nigeria economy is concern, other commodities are based on the price of premium motor spirit. However, one can state that, premium motor spirit is a major source of energy it accounts for 3% of the world's economy (Okonkwo & Ekwueme, 2022).

Premium motor spirit and gas stations are among the most visited facilities to fill up fuel or gas in vehicles and gas cylinders to ensure they function as desires. But the growing trends of technology have put up great competition in the market. oil and gas firms service stations are businesses that sells

premium motor spirit, diesels, lubricants for motor vehicles and gasoline for motor vehicles air conditioners, cooking cylinders, fridges and deep freezers air conditioners for cooling of waters, drinks, meats, fishes and preservation of foods. Every day, millions of people depend on premium motor spirit, gas and consumer goods (household goods). It is impossible to underestimate the significance of premium motor spirit and gas service stations including the consumer goods firms because they provide premium motor spirit that allow people to go to different parts of the nation and commodities for individuals'.

Like many other firms, oil and gas firms, oil and gas producing firms service stations and consumer goods firms are rapidly going digital. Customers demand easy, contactless payment options since they are becoming more tech-savvy. These firms can maintain their competitiveness, improve customer experience and care, and make sure that their businesses prospers in the digital age by adopting innovative payment technology and is a financial technology that drives financial inclusion and digital financial inclusion for which both

businesses, the poor and the rich people benefit from its services. The oil and the gas producing firms, oil and gas firm's service stations, and consumer goods firms were commonly known for businesses that when sales are made, payment are done by cash. The oil and the gas producing firms, oil and gas firm's service stations, and consumer goods firms has evolved, making the experience of payment on goods bought more efficient and pleasant, thereby introducing a self-serve attendant and mobile banking applications for payments by transferring money instantly instead of visiting the banks for such transaction, helping to automate practically every activities in these firms (Mustapha, 2020). The intense competition brought about by business growth makes it harder for them to outperform their rivals in the marketplace.

The oil and gas producing firms, oil and gas firms' service stations and consumer goods firms has been significantly and continuously impacted by financial technology. Over the past few decades, there has been a significant change in the manner that premium motor spirit, diesels and gas service stations and also consumer goods items are produced, distributed, marketed and sold. Consumers demand generally rises with growth in the economy, and these firms experience a rise in demand for higher quality goods and services. Financial technology refers to the use of technology to provide various financial services, such as online payments, financial planning, and peer-to-peer lending. It has disrupted traditional financial institutions and introduced new business models (Kyari & Akinwale, 2020).

The emergence of financial technology has affected the culture within organizations worldwide. Enemuo et al (2025) posit that financial technology opens access for financial inclusion, financial inclusion includes both traditional financial inclusion and digital financial inclusion which has been accepted nationwide as a focal driver of money transactions as a means of payment for goods and services purchased by the rich, poor and businesses, also bring about equality in terms of money transactions through the use of point of sales technologies by businesses, families and individual within any environment they finds themselves without being physically present in banks for such transaction that ought to cost them some amount of money for transportation cost (i.e., the leveraging of technology to dazed barriers of cost, distance, documentation and infrastructure that border financial access).

By increasing the access of financial services, financial technology permits people and businesses to save, invest, and engage in fruitful economic

activities by using automated tellers machine through the use of point of sales terminals. While it also promotes digital financial inclusion that permits mobile and internet technologies which in-turn increases access to financial services nationally (Enemuo et al., 2025). It encompasses technologies such as digital financial technology and innovation (i.e., the use of point of sales, automated teller machines, robo-advisors, crowdfunding, mobile banking, digital payments, blockchain etc.) which have transformed financial markets globally (Enemuo, et al., 2025). Consumer good firms and the oil and gas firms' service stations has been impacted by financial technology both through the appearance of financial technology firms and through the adoption of innovative technologies by traditional firms themselves.

Firms' financial performance exceptional kill, strength, expertise are substantially pretentious by cash flow management and the use of financial technology to determines the healthiness of firms (Idamoyibo et al., 2021). Firms' financial performance are crucial to sustainability and continuity of their operations. Whether a firm's performance is short-term or long-term (sustainable) is ultimately determined by how it manages its resources. Asen et al., (2021) assert that firms financial performance is calculated by their capability in generating optimal assets, maximize profits and shareholders wealth. Idamoyibo (2024) sees profits as financial gain corporations receives from transactions, investments or operations, after all liabilities have been settled.

Ironkwe and Wokoma (2021) opine that a company's financial performance affects investor interest and influences the public's perception of it. Still, potential investors, shareholders, employees, governmental bodies, and the public are attracted to a firm who has shown a strong positive profitability trend and huge liquidity. Joseph and Chuemeka (2020) posit that potential investors are willing to invest with a company that have strong track records of profitability, pay their employees, pay taxes to the government, and carry out their corporate social responsibility where their operations takes place. The Nigeria oil and gas producing firms, oil and gas firms' service stations and consumer goods firms are facing various challenges in terms of sales payments, but technologies innovations has being help to overcome these difficulties.

Customers of premium motor spirit, gas and consumer goods firms complains that the amount of time they spend at the companies and service stations were primarily because of long queues and network failures, which are brought on by

inadequate connectivity between the main server and contactless payments (such as point of sales and internet transfer). Notwithstanding, financial technologies also brought challenges to consumer goods firms such as regulation, security, privacy, competitive pressure and technological risks. To meet this challenges, oil and gas firms, oil and gas firms' service stations and consumer goods firms need to actively pursue technological innovation, optimise their business model, and strengthen regulations and compliance.

The major difficulties customers face in using financial technologies are poor network, literacy, concerns on risk and unreliable machines. The oil and gas producing firms', oil and gas firms service stations are expected to improve service delivery technologically, by providing smart gas station solution such as automated fuel dispensing systems that use sensors and algorithms to reduce wastage and optimize premium motor spirit, diesel and gas delivery, which is the key features of a smart gas station solution. Premium motor spirit, diesel and gas inventory levels can be tracked in real-time, predictive maintenance can catch and fix problems before they get critical, and loyalty programs can be integrated to improve customer experiences.

A number of empirical studies have studied financial technology and financial performance and economic growth, but they focus on banking and insurance sectors, manufacturing sectors and Small and medium scale enterprises with measure such as return on asset and return on equity, studies of Hogan and Okereke 2023; Zhao et al., 2023; Guo and Zhang 2023; Okonkwo, and Ekwueme 2022; Boot et al., 2021; and also, Nwakoby et al., 2020. None of these studies has used measures like return on capital employed, earnings per share, dividend per share and the moderating effect of firm size, which this present study included. This shows that, the results are mixed, more or less country-specific and limited in scope. Against this background this study tend to fill the gap by ascertain the impact of financial technology on financial performance of listed oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

In line with the objective of this study, the following research hypotheses were formulated and tested.

H<sub>01</sub>: There is no significant impact of Point of Sale terminals revenue generated on Return on Assets of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

H<sub>02</sub>: There is no significant impact Point of Sale terminals revenue generated on Return on Equity of consumer goods firms and oil and gas producing firms', firms' service stations in Nigeria.

H<sub>03</sub>: There is no significant impact of Point of Sale terminals revenue generated on Return on Capital Employed of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

H<sub>04</sub>: There is no significant impact of Point of Sale terminals revenue generated on Earnings per share of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

H<sub>05</sub>: There is no significant impact of Point of Sale terminals revenue generated on Dividend per share of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

H<sub>06</sub>: There is no significant impact of the moderating effect of Firm Size on financial technology revenue generated of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria.

## Conceptual Clarifications

### Financial Technology

Financial technology advancements, according to many scholars, have the potential to significantly change financial services by making them safer, easier, and more affordable through financial technology companies. These scholars have been drawn in by the financial technology sectors rapid development and global expansion (Chen, 2019). Financial technology companies has track record of dominating the field in which they specialize and are dedicated to providing excellent customer service. Financial technologies has greatly expanded the use of digital technology in the areas of payment systems, insurance, financial planning, and lending. These financial technology companies services are now frequently use for money transfer between different banks whether internally or externally amongst individuals and businesses. Technological Innovations in many sectors, especially banking and consumable goods, have been driven by global technological advancement. Financial technology has become more and more well-known across the globe, particularly in Nigeria. The public now has easy, convenient, and safe access to financial services this came into being

through widespread acceptance in the consumer goods sector (Medyawati et al., 2021; Abdillah, 2020).

An individual or customers can make payments from anywhere in the world and send money without having to go to the bank. New businesses entering the market through financial technology are trying to upend traditional methods of doing things by utilizing state-of-the-art technological channels in areas such as asset management and money transfer (Truong, 2016). One of the notable characteristics of financial technology is its capacity to maintain market efficiency while reducing transaction costs. Kim et al (2020), sees financial technology as a platform that enable the fusion of technology and finance.

Financial technology transforms conventional payment systems and makes long-distance transactions easier. Financial technology is habitually seen as a cutting-edge financial platform or application that improves community access to secure useful financial services that promotes economic expansion. To put it simply, information technology combined with financial services promotes financial service industry (Lee & Kim, 2020). Financial technology denotes a broad category of technologically supported financial innovations that can lead to the development of new services, business models, goods, procedures, and even institutions inside the financial system (IAIS, 2017).

#### **Point of Sales (POS) Terminal**

An essential tool for cashless policies is the point of sale terminal, which allows operators to easily handle customer payments and then record them for transparent accounting purposes (Iskakov & Yilmaz 2020). The vehicle rider first extracts the bank identification number when customers swipe their debit or credit card into the POS transactions terminals. By providing a salesperson-friendly interface, a point-of-sale system (POS) facilitates the selling process and permits the creation and printing of receipts. POS terminals increase convenience, more service options, reduced cash related crimes, cheaper access to banking services, and also increases bank Penetration thereby creating more fund in the bank investment purposes in order to enhance banks performance.

#### **Theoretical Review**

The foundation of this study is based on the Theory of Technology Acceptance Model and the Theory of Diffusion of Innovations.

#### **Technology Acceptance Theory**

This theory was developed by Fred in the year 1989, is an information system theory which shows how a person's adoption of technology and innovation is affected by other things, like subjective norm and its attitude towards the behaviour. Subjective norm simply refers to the belief of what others will think of the behaviour. Attitudes are those beliefs an individual accumulates throughout his or her life time. Fred, defines technology acceptance theory as the degree to which an individual believes that using a specific system would enhance his or her job performance, and perceived ease of use. Fred also sees technology acceptance theory as the degree to which an individual believes that using an exact system would made him or her be free from effort (Marikyan & Papagiannidis, 2025; Poi, 2024).

#### **Diffusion of Innovations Theory**

The diffusion of innovation theory is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. This theory was developed by Gabriel in the year 1980, and it was popularized in the book of Professor, Everett Roger's "Diffusion of Innovations" who specialize in rural sociology in the year 1962. He explained diffusion as a process whereby an innovation is communicated through certain channels overtime amid members of a social system, this theory was employed by Idris and Dzugwahi (2025); Poi (2024); and Yao and Song (2021). This study is hinged on the theory of technology acceptance model and the theory of diffusion of innovations.

#### **Empirical Review**

A study conducted by Kolawole et al (2024) evaluates the causal association as well as short-term and long-term dynamic effects among digital financial service components on the performance of the quoted commercial banks. The findings show that agency banking shows a strong causal association on return on assets, automated teller machine banking has a weak influence on return on assets, while internet banking and mobile banking has significant impact on return on assets. A study by Poi (2024) assesses the connection amid financial technology proxies by internet banking and mobile payment innovation and business growth of small and medium-scale enterprises, the finding reveals that there is a positive and significant connection amid financial technology innovation and business growth. With the Established of findings, the study concludes that financial technology innovation is a business answer, a daunting management policy that small

and medium enterprises can use to increase the corporate growth.

Further, Adewuyi (2024) investigates the impact of financial technology on the economic development of developing countries, focusing on Nigeria nation, to understand its contributions and ascertain areas for improvement. The finding shows that the automated tellers machine, point of sales and mobile payments of financial technology services fluctuates, but there is a general upward trend in production and popularity peaking in the year 2020, likely due to the era of COVID-19 pandemic. Although, automated teller machines was the most popular among the variables, but post of sales and mobile payments transactions are the ones that have significant growth in the economic development of Nigeria from 2017 to 2019. The study conclude therefore, that financial technology has a partial impact on GDP per capita, financial technology has significant influence on consumer price index and the unemployment rate, showing its critical role in shaping Nigeria's economic landscape

A study carried out by Guo and Zhang (2023) examines how Chinese commercial banks financial technology affects the production of liquidity. The study found that banks with higher levels of financial technology development generate more liquidity through cost-efficiency, risk management and deposit inflow. For non-state-owned, unlisted banks, the study found lower level liquidity creation, the benefits of the bank financial technology were more noticeable. In line with previous literature, Ogbonna et al (2023) determines the effect of financial technology on profitability of financial industry in Sub-Saharan African economies. Secondary data were gathered from central bank statistical bulletin and World Bank development indicator of the selected nations. The finding shows that there is a strong and significant impact of financial technology on the profitability of the financial industry in the Sub-Saharan African economies.

Similarly, a study conducted by Enemu et al., (2025) evaluates the interplay among digital financial inclusion and environmental sustainability in Nigeria, looking at the role of industrialization, urbanization, and energy consumption. Also, the study ascertains whether digital financial inclusion promotes environmental degradation through renewable energy adoption or contributes to environmental degradation through increased energy consumption. The findings shows that the n-shaped environmental kuznets curve, where inclusive economic growth at first degrades the environment, improves at higher income levels, yet ricochets once more at very high incomes. The

industrialization decreases emissions excluding mobile money accounts per capita, indicating the environmental costs of digital financial inclusion infrastructure. Trade openness at first increases emissions, yet drops them in the long term. While foreign direct investment decreases emissions, renewable energy at first also decreases environmental degradation, yet increases environmental degradation in the long term. The error correction terms indicates quick convergence to stability.

A study conducted by Adewumi et al (2023) ascertains how financial technology affects Nigerian banks' performance, using Zenith Bank and United Bank for Africa as a stud. The finding reveals that, traditional and market-based performance metrics has positive impact on financial technology. Similarly, a study conducted by Zhao et al (2023) evaluates the impact of financial technology on bank risk-taking on deposit money banks in Nigeria. The study found a positive liaison among bank risk-taking and financial technology in Nigeria. Also, the study found that payment and settlement technology, capital-raising technology, and investment management technology has positive linked with bank risk-taking, while market facility technology has a negative linked with bank risk-taking.

A study by Omole et al (2023) assesses the effect of financial technology on Nigerian deposit money banks' financial performance for the period of five years (2018-2022). Financial technology was proxy by post of sale and financial performance was measured by return on assets. The result displays a positive and significant impact of point of sale with the return on asset of the selected banks in Nigeria.

A study carried out by Mbagwu and Obonofiemro (2023) investigates the correlation among technological disruption and deposit money banks financial performance in the pre and post covid-19 pandemic in Nigeria. The finding shows that automated teller machine, internet banking, point of sales and mobile tellers has positive and significant effect on return on assets of deposit money banks in Nigeria.

A study conducted by Bussoli et al (2023) investigates whether banks that engaged in a financial technology merger experience better financial performance. The result indicates that financial technology merger operation boosts international banking financial performance. A study carried out by Adiga et al (2022) evaluates the effect of financial technology on return on assets, return on equity, interest income and non-interest income of deposit money banks in Nigeria. The finding shows that financial technology

significantly affect the return on assets, return on equity, interest income and non-interest income of deposit money banks in Nigeria.

A study carried out by Idris and Dzugwahi (2025) ascertains the impact of financial technology on Nigeria's economic growth analyzing the impact of real gross domestic product on mobile money transactions, automated teller machine usage, and point-of-sale transactions. The finding shows a steady long-run impact of financial technology variable on economic growth. Conversely, mobile money transactions, automated teller machine usage, and point-of-sale transactions exhibit negative and positive long-term impact with real gross domestic product, their effects are statistically insignificant. The high R-squared value and F-statistic and probability values, avow the model's robustness in the short-run.

A study by Islam et al (2022) examines the impact of financial technology on financial service delivery of deposit money banks in Nigeria, the findings reveals that mobile banking, internet banking and point of sales banking has significant impact on the financial service delivery of deposit money banks in Nigeria. A study conducted by Akanbi et al., (2022) examines the impact of financial technology usage on the financial and non-financial performance of small the medium enterprises in Nigeria. The finding indicates a significant association among financial technology usage and small and medium enterprises customer satisfaction, customer retention, turnover, and profitability in Nigeria. The study concluded therefore, that financial technology has significant impact on the financial and Non-financial performance of small and medium enterprises in Nigeria.

Similarly, the study of Filipa (2022) examines how stock prices of publicly listed traditional banks responds to the statement of financial technology firms funding deals. The study finding reveals that financial technology firms do not displays significant abnormal performance for any of the event windows considered on traditional banks. The parametric test used in the study found a significant negative results, and the results were disallowed

#### Model Specifications

The study adopt and modify the model of Idamoyibo (2025) to suit the peculiarity of the study.

Mathematically, the model is expressed thus:

$$ROA = f(NLPOS)$$

$$ROE = f(NLPOS)$$

$$ROCE = f(NLPOS)$$

$$EPS = f(NLPOS)$$

$$DPS = f(NLPOS)$$

$$LFMS = f(NLPOS)$$

equ I

equ II

equ III

equ IV

equ V

equ VI

due to the non-normality of the data. The analysis was conducted on sub-sampling events into diverse kinds of financial technology groups and the finding reveals that the stock returns of traditional banks respond negatively to digital lending funding events, signifying a swap effect, and positive to the funding of digital payments firms, suggesting a balancing effect. The findings for digital capital raising firms propose that banks' stock returns firstly react negatively to these events but that the finding was inverted in the following days, signifying a total balancing effect.

A study conducted by Lionel and Samuel (2020) examines the effect of financial innovation on economic growth in Nigeria, the study employed qualitative data for the analysis. The finding reveals that there is a positive and significant effect of financial innovation on small and medium scale enterprises' productivity in Nigeria.

#### Methods

The study used of quantitative data that was generated from the annual financial statement reports and accounts of the firms, point of sales data were obtained from the e-payment statistics and the annual bulletin of the central bank of Nigeria from 2014-2024. The population comprises oil and gas producing firms, oil and firms who engage in service station operations and consumer goods firms listed on the floor of the Nigeria Exchange Group who are involves in e-payments for business transactions. A sample of five firms each was chosen from the oil and gas producing firm, oil and gas firms' service stations and the consumer goods firms making it ten sampled firms using judgmental sampling techniques. The firms includes Cadbury Nigeria Plc., Honeywell Flour, Larfage Nigeria Plc., May and Baker, Giuness Nigeria Plc., Conoil Plc., Oando Plc., Mrs Oil, Seplat Energy and Total Energies. The justification of using these firms was based on the reasons of using point of sales e-payment in their business transactions. The study employed a simple linear regression method to test the hypotheses and analyse the data.

Econometrically, the equation I to VI above can be restated as:

$$\begin{aligned}
ROA &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ VII} \\
ROE &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ VIII} \\
ROCE &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ IX} \\
EPS &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ X} \\
DPS &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ XI} \\
NLFMS &= \beta_0 + \beta_1 NLPOS + U_i && \text{equ XII}
\end{aligned}$$

Where: NLPOS (Natural Logarithm of Point of Sales), ROA (Return on Assets), ROE (Return on Equity), ROCE (Return on Capital Employed), EPS (Earning per Share), DPS (Dividend per Share), NLFMS (Natural Logarithm of Firm Size),  $\beta_0$  (Constant Term),  $\beta_1$  (Coefficient of the explanatory variable), and  $U_i$  (Stochastic Error Term).

### Method of Data Analysis

The study used econometrics models to accomplish the objectives of the study. Firstly,

the econometric model determines the Panel unit root test for the stationarity of the variables using Levin, Lin and Chin root test and secondly is the OLS tests.

### Panel Unit Root Tests

Confirming the order of integration of the data series appropriateness for a linear combination in the form of a model, the panel unit root test following the form stated as Levin, Lin and Chin.

**Table 1: Summary of Panel Unit Root Test**

| Study Variables | Statistics | Probability Value | Order of Integration | Remark       |
|-----------------|------------|-------------------|----------------------|--------------|
| NLPOS           | -1.67918   | 0.0466            | 1(0)                 | Stationarity |
| ROA             | 8.29100    | 0.0000            | 1(0)                 | Stationarity |
| ROE             | -22.9117   | 0.0000            | 1(0)                 | Stationarity |
| ROCE            | 2.76833    | 0.9972            | 1(1)                 | Stationarity |
| EPS             | 3.17365    | 0.9992            | 1(1)                 | Stationarity |
| DPS             | -34.7593   | 0.0000            | 1(0)                 | Stationarity |
| NLFMS           | 1.43534    | 0.9244            | 1(1)                 | Stationarity |

*Source: Author's Computation (E-View 9.0)*

The result table 1 above shows that, NLPOS, ROA, ROE, DPS are stationary at 5% level of significance since their respective p-values at their natural levels are less than 5% level of significance. While ROCE, EPS and NLFMS are stationary

at 10% level of significance since their respective p-values at their natural levels are 10% and 9% level of significance. It can be conclusively stated that the variables under study do not possess unit roots and are integrated at their 1<sup>st</sup> and 2<sup>nd</sup> differencing of 1(0) and 1(1)) as shown in table above.

**Table 2: Result of Model I: ROA = f(NLPOS)**

Dependent Variable: ROA

Method: Panel Least Squares

Date: 07/15/25 Time: 11:36

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| NLPOS              | 0.031007    | 0.023761              | 1.304964    | 0.1947   |
| C                  | -0.265296   | 0.477799              | -0.555245   | 0.5799   |
| R-squared          | 0.015523    | Mean dependent var    |             | 0.354980 |
| Adjusted R-squared | 0.006408    | S.D. dependent var    |             | 0.511478 |
| S.E. of regression | 0.509837    | Akaike info criterion |             | 1.508563 |
| Sum squared resid  | 28.07284    | Schwarz criterion     |             | 1.557663 |

|                   |           |                      |          |
|-------------------|-----------|----------------------|----------|
| Log likelihood    | -80.97096 | Hannan-Quinn criter. | 1.528478 |
| F-statistic       | 1.702932  | Durbin-Watson stat   | 0.813652 |
| Prob(F-statistic) | 0.194679  |                      |          |

**Source: Source: Author's Computation (E-View 9.0)**

In table above, the result displays the coefficient estimates value of POS on ROA model of the OLS analysis to show the contribution of POS in ROA. The result shows that POS has a significant positive impact on ROA with the probability value of 0.1947 and coefficient value of 0.031007. The coefficient of determination, R-squared ( $R^2$ ) value is 0.015523 and indicates that 1.6% of the changes in ROA are explained by the variation in financial technology. The F-statistic explains the overall significance of the performance of POS in the

model. The F-statistic value is 1.702932 with a probability value of 0.194679 greater than 5% level of significance. The coefficient of Durbin-Watson value is 0.813652 and indicating 81%. This shows that the model is free of autocorrelation. Based on the probability value of F-statistic, the study concludes that POS has no significant impact on ROA of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

**Table 3: Result of Model II: ROE =f(NLPOS)**

Dependent Variable: ROE

Method: Panel Least Squares

Date: 07/15/25 Time: 11:37

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| LPOS               | 0.149670    | 0.046272              | 3.234600    | 0.0016   |
| C                  | -2.351125   | 0.930474              | -2.526804   | 0.0130   |
| R-squared          | 0.088320    | Mean dependent var    |             | 0.642968 |
| Adjusted R-squared | 0.079879    | S.D. dependent var    |             | 1.035064 |
| S.E. of regression | 0.992864    | Akaike info criterion |             | 2.841569 |
| Sum squared resid  | 106.4642    | Schwarz criterion     |             | 2.890669 |
| Log likelihood     | -154.2863   | Hannan-Quinn criter.  |             | 2.861484 |
| F-statistic        | 10.46263    | Durbin-Watson stat    |             | 0.473409 |
| Prob(F-statistic)  | 0.001617    |                       |             |          |

**Source: Source: Author's Computation (E-View 9.0)**

Table 3 above, displays the result of the coefficient estimates of POS on ROE model of the OLS analysis to show the contribution of POS in ROE. The result shows that POS has a significant positive impact on ROE with the probability value of 0.0016 and coefficient value of 0.149670. The coefficient of determination, R-squared ( $R^2$ ) value is 0.088320 and indicates that 8.8% of the changes in ROE are explained by the variation by POS. The F-statistic explains the overall significance of the performance

of POS in the model. The F-statistic value is 10.46263 with a probability value of 0.001617 lesser than 5% level of significance. The coefficient of Durbin-Watson value is 0.473409 and indicating 47%. This shows that the model is free of autocorrelation. Based on the probability value of the F-statistic, the study concludes that POS has significant impact on ROE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.



**Table 4: Result of Model III: ROCE =f(NLPOS)**

Dependent Variable: ROCE

Method: Panel Least Squares

Date: 07/15/25 Time: 11:37

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| LPOS               | 0.230567    | 0.046108              | 5.000552    | 0.0000   |
| C                  | -3.872928   | 0.927189              | -4.177064   | 0.0001   |
| R-squared          | 0.188004    | Mean dependent var    |             | 0.739471 |
| Adjusted R-squared | 0.180485    | S.D. dependent var    |             | 1.092888 |
| S.E. of regression | 0.989359    | Akaike info criterion |             | 2.834496 |
| Sum squared resid  | 105.7139    | Schwarz criterion     |             | 2.883596 |
| Log likelihood     | -153.8973   | Hannan-Quinn criter.  |             | 2.854412 |
| F-statistic        | 25.00552    | Durbin-Watson stat    |             | 0.497210 |
| Prob(F-statistic)  | 0.000002    |                       |             |          |

**Source: Source: Author's Computation (E-View 9.0)**

In table 4, the result displays the coefficient estimates of POS on ROCE model of the OLS analysis to show the contribution of POS in ROCE. The result shows that POS has a significant positive impact on ROCE with the probability of 0.0000 and coefficient value of 0.230567. The coefficient of determination, R-squared ( $R^2$ ) value is 0.188004 and indicates that about 18% of the changes in ROCE are explained by the variation in POS. The F-statistic explains the overall significance of the

performance of POS in the model. The F-statistic value is 25.00552 with a probability value of 0.000002 lesser than 5% level of significance. The coefficient of Durbin-Watson value is 0.497210, indicating 50%. This shows that the model is free of autocorrelation. Based on the probability value of the F-statistic, the study concludes that POS has significant impact on ROCE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods sector in Nigeria.

**Table 5: Result of Model IV: EPS =f(NLPOS)**

Dependent Variable: EPS

Method: Panel Least Squares

Date: 07/15/25 Time: 11:38

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| LPOS               | 143.8361    | 33.87791              | 4.245719    | 0.0000   |
| C                  | -2432.296   | 681.2500              | -3.570343   | 0.0005   |
| R-squared          | 0.143035    | Mean dependent var    |             | 445.0919 |
| Adjusted R-squared | 0.135100    | S.D. dependent var    |             | 781.6447 |
| S.E. of regression | 726.9296    | Akaike info criterion |             | 16.03355 |
| Sum squared resid  | 57070072    | Schwarz criterion     |             | 16.08265 |
| Log likelihood     | -879.8453   | Hannan-Quinn criter.  |             | 16.05347 |
| F-statistic        | 18.02613    | Durbin-Watson stat    |             | 0.747527 |
| Prob(F-statistic)  | 0.000046    |                       |             |          |

**Source: Source: Author's Computation (E-View 9.0)**

Table 5 above, displays the result of the coefficient estimates of POS on EPS model of the OLS analysis to show the contribution of POS in EPS. The result shows that POS has a significant positive impact on EPS with the probability value of 0.0000 and coefficient value of 143.8361. The coefficient of determination, R-squared ( $R^2$ ) value is 0.143035, indicates that 14% of the changes in EPS are explained by the variation in POS. The F-statistic is

18.02613 with a probability value of 0.000046 lesser than 5% level of significance. The coefficient of Durbin-Watson value is 0.747527, indicating 75%. This shows that the model is free of autocorrelation. Based on the probability value of the F-statistic, the study concludes that POS has significant impact on EPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

**Table 6: Result of Model V:  $DPS = f(NLPOS)$**

Dependent Variable: DPS

Method: Panel Least Squares

Date: 07/15/25 Time: 11:38

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| LPOS               | 4.889241    | 5.081662              | 0.962134    | 0.3381   |
| C                  | 3.656437    | 102.1870              | 0.035782    | 0.9715   |
| R-squared          | 0.008498    | Mean dependent var    |             | 101.4639 |
| Adjusted R-squared | -0.000682   | S.D. dependent var    |             | 109.0017 |
| S.E. of regression | 109.0389    | Akaike info criterion |             | 12.23930 |
| Sum squared resid  | 1284064.    | Schwarz criterion     |             | 12.28840 |
| Log likelihood     | -671.1616   | Hannan-Quinn criter.  |             | 12.25922 |
| F-statistic        | 0.925702    | Durbin-Watson stat    |             | 0.209260 |
| Prob(F-statistic)  | 0.338131    |                       |             |          |

**Source: Source: Author's Computation (E-View 9.0)**

Table 6, displays the result of the coefficient estimates of POS on DPS model of the OLS analysis to show the contribution of POS in DPS. The result shows that POS has a significant positive impact on DPS with the probability value of 0.3381 and coefficient value of 4.889241. The coefficient of determination, R-squared ( $R^2$ ) value is 0.008498 and indicates that 0.84% of the changes in DPS are explained by the variation in POS. The F-statistic explains the overall significance of the performance of POS in the model. The F-statistic is 0.925702 with a probability value of 0.338131 greater than 5% level of significance. The coefficient of Durbin-Watson value is 0.209260 indicating 21%. This shows that the model is free of autocorrelation. Based on the probability value of the F-statistic, the study concludes that POS has no significant impact on DPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

**Table 7: Result of Model VI: NLFMS =f(NLPOS)**

Dependent Variable: NLFMS

Method: Panel Least Squares

Date: 07/15/25 Time: 11:39

Sample: 2014 2024

Periods included: 11

Cross-sections included: 10

Total panel (balanced) observations: 110

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| NLPOS              | 0.145518    | 0.025814              | 5.637277    | 0.0000   |
| C                  | 14.59593    | 0.519085              | 28.11857    | 0.0000   |
| R-squared          | 0.227351    | Mean dependent var    |             | 17.50697 |
| Adjusted R-squared | 0.220197    | S.D. dependent var    |             | 0.627237 |
| S.E. of regression | 0.553891    | Akaike info criterion |             | 1.674317 |
| Sum squared resid  | 33.13390    | Schwarz criterion     |             | 1.723417 |
| Log likelihood     | -90.08745   | Hannan-Quinn criter.  |             | 1.694232 |
| F-statistic        | 31.77889    | Durbin-Watson stat    |             | 0.241828 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

**Source: Author's Computation (E-View 9.0)**

In table 7, the result displays the coefficient estimates of POS on the moderating effect of FMS model of the OLS analysis to show the contribution of POS in FMS. The result shows that POS has a significant positive impact on FMS with the probability value of 0.0000 and coefficient value of 0.145518. The coefficient of determination, R-squared ( $R^2$ ) value is 0.227351 and indicates that about 22% of the changes in FMS are explained by the variation in POS. The F-statistic explains the overall significance of the performance of POS in the model. The F-statistic value is 31.77889 with a probability value of 0.000000 lesser than 5% level of significance. The coefficient of Durbin-Watson value is 0.241828 indicating 24%. This shows that the model is free of autocorrelation. Based on the probability value of the F-statistic, the study concludes that POS has no significant impact on the moderating effect of FMS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

### Tests of Hypotheses

The study formulated six hypotheses and tested using the Ordinary Least Square OLS Analysis accomplish the objective of the study.

H<sub>01</sub>: There is no significant impact of Point of Sale terminals revenue generated on Return on Assets of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria. The result of the analysis shows that POS has no significant impact on ROA of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

H<sub>02</sub>: There is no significant impact Point of Sale terminals revenue generated on Return on Equity of

consumer goods firms and oil and gas firms', firms' service stations in Nigeria. The result shows that POS has significant impact on ROE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

H<sub>03</sub>: There is no significant impact of Point of Sale terminals revenue generated on Return on Capital Employed of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria. The result shows that POS has significant impact on ROCE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods sector in Nigeria.

H<sub>04</sub>: There is no significant impact of Point of Sale terminals revenue generated on Earnings per share of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria. The result shows that POS has significant impact on EPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

H<sub>05</sub>: There is no significant impact of Point of Sale terminals revenue generated on Dividend per share of oil and gas producing firms', oil and gas firms' service stations and consumer goods firms and in Nigeria. The result shows that POS has no significant impact on DPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

H<sub>06</sub>: There is no significant impact of the moderating effect of Firm Size on financial technology revenue generated of oil and gas producing firms', oil and gas firms' service stations

and consumer goods firms in Nigeria. The result shows that POS has no significant impact on the moderating effect of FMS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

### Discussion of Findings

The study ascertain the impact of POS on the ROA, ROE, ROCE, EPS, DPS and the moderating effect of FMS of listed oil and gas producing firms', oil and gas firms' service stations and consumer goods firms in Nigeria. The findings shows that POS has no significant impact on ROA of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. The of this study disagrees with the findings of Omole et al., (2023) who assesses the effect of financial technology on Nigerian deposit money banks' financial performance for the period of five years (2018-2022), found a positive and significant impact of point of sale with the return on asset of the selected banks in Nigeria.

Further, the findings disagrees with the findings of Mbagwu and Obonofiemro (2023) who determines technological disruption and deposit money banks financial performance in the pre and post covid-19 pandemic in Nigeria, found that point of sales has positive and significant effect on return on assets of deposit money banks in Nigeria. Again, the findings disagrees with that of Bussoli et al (2023) who assesses the impact of financial technology merge operation on financial performance: evidence from banking international sample, found that point of sales has positive and significant effect on return on assets of deposit money banks in Nigeria. Also, the findings of this study disagrees with the findings of Adiga et al., (2022) who ascertains the effect of financial technology and the banking sector performance in Nigeria, found that financial technology significantly affect the return on assets of deposit money banks in Nigeria.

The finding of this study shows that POS has significant impact on ROE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. Further, the findings of this study agrees with the findings of Adiga et al., (2022) who ascertains the effect of financial technology and the banking sector performance in Nigeria, found that financial technology significantly affect the return on equity of deposit money banks in Nigeria. Also, the findings agrees with that of Filipa (2022) who evaluates the impact of financial technology firms on the performance of traditional banks, and found a significant impact of financial technology usage on small and medium enterprises profitability in Nigeria. The finding of this study shows that POS has significant impact on ROCE of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods sector in Nigeria. The findings agrees with findings of Ogbonna et al., (2023) who evaluates the impact of financial technology on

firm's profitability in Sub-Saharan African economies from 2005-2021, found a strong and significant impact of financial technology on the profitability of the financial industry in the Sub-Saharan African economies.

The finding of this study shows that POS has significant impact on EPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. The findings agrees with findings of Ogbonna et al., (2023) who evaluates the impact of financial technology on firm's profitability in Sub-Saharan African economies from 2005-2021, found a strong and significant impact of financial technology on the profitability of the financial industry in the Sub-Saharan African economies. Also, the findings agrees with that of Filipa (2022) who evaluates the impact of financial technology firms on the performance of traditional banks, and found a significant association among financial technology usage on small and medium enterprises profitability in Nigeria.

The findings of this study shows that POS has no significant impact on DPS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. The findings disagrees with findings of Ogbonna et al., (2023) who evaluates the impact of financial technology on firm's profitability in Sub-Saharan African economies from 2005-2021, found a strong and significant impact of financial technology on the profitability of the financial industry in the Sub-Saharan African economies. Again, the findings disagrees with that of Omole et al., (2023) who assesses the effect of financial technology on Nigerian deposit money banks' financial performance for the period of five years (2018-2022), found a positive and significant impact of point of sale with the return on asset of the selected banks in Nigeria.

The findings of this study shows that POS has no significant impact on the FMS of the listed oil and gas firms, oil and gas firms' service stations and the consumer goods firms in Nigeria.

### Conclusion

The study ascertain the impact of financial technology on financial performance of listed oil and gas producing firms, oil and gas firms' service stations and the consumer goods firms in Nigeria. The study used POS to proxy financial technology, while ROA, ROE, ROCE, EPS, DPS were used to measure financial performance and FMS was used to the moderate the effect of financial technology. Panel unit root test was used to test the stationarity and the integration order of the variables. The ordinary least square analysis was employed to analyze the impact of the independent variable on the dependent variables. The study reveals that POS has no significant impact on ROA and DPS. While, POS has significant impact on ROE, ROCE and EPS. However, the moderating effect of firm size has no significant impact on the financial technology. The

study concludes that, on the long run financial technology has significant impact on the financial performance of the listed oil and gas producing firms, oil and gas firms' service stations and the consumer goods firms in Nigeria, but the firms' needs to improve on their financial technology services to enhance their ROA, DPS and firm size.

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## From Margins to Mainstream: Women's Entrepreneurship As A Catalyst For Sustainable Economic Development in Delta State

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### Abstract

*This study examined the theme “From Margins to Mainstream: Women’s Entrepreneurship as a Catalyst for Sustainable Economic Development in Delta State”, with particular attention to the role of entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy. The study was guided by three research questions in line with three objectives, which informed the formulation of three hypotheses. The descriptive survey research design was adopted. The population of the study comprised 4,800 women entrepreneurs, from which a sample size of 370 was determined using Taro Yamane’s formula. A structured questionnaire served as the research instrument. The instrument was validated by experts and its internal consistency was confirmed with a Cronbach Alpha reliability coefficient of 0.83. Out of the 370 questionnaires administered, 348 were duly completed and returned, representing a 94.05% response rate, and were used for the analysis. The findings revealed that entrepreneurial training and skills development significantly influenced sustainable economic development in Delta State with a positive coefficient of 0.399 ( $p = 0.0302$ ), indicating that access to training and skill enhancement improved business outcomes and economic sustainability. Cultural and social norms were also found to exert a significant positive effect with a coefficient of 0.716 ( $p = 0.0410$ ), suggesting that supportive cultural values and family backing play a critical role in empowering women’s businesses to thrive. Furthermore, technology adoption and digital literacy demonstrated the strongest effect with a coefficient of 0.696 ( $p = 0.0120$ ), underscoring the importance of digital tools, mobile banking, and online platforms in enhancing competitiveness and expanding women’s economic participation. The overall model showed an R-squared of 0.418, with the independent variables collectively explaining 41.8% of the variance in sustainable economic development. The F-statistic of 82.386 with a probability of 0.000 confirmed the robustness of the model. The study recommends stronger policy support, targeted training programs, and increased digital literacy initiatives to move women’s enterprises from the margins to the mainstream of economic development.*

**Keywords:** *Women’s entrepreneurship, Sustainable economic development, Entrepreneurial training, Cultural and social norms, Technology adoption and Digital literacy.*

### Introduction

Women’s entrepreneurship has increasingly been recognized as a powerful driver of inclusive and sustainable economic development globally. In developing economies, women entrepreneurs are viewed not only as income generators but also as catalysts for poverty alleviation, employment creation, and social transformation (Alonso-González et al., 2021; Olaoye & Olaleye, 2022). According to the World Bank (2023), women constitute nearly half of the global labor force, yet they remain underrepresented in entrepreneurial activities due to systemic barriers such as limited access to finance, unequal cultural norms, and restricted opportunities for capacity building. In sub-Saharan Africa, where unemployment and poverty remain persistent, women-owned enterprises have demonstrated significant resilience in sectors such as agriculture,

trade, and services, thereby making them critical to achieving sustainable development goals (SDGs).

Entrepreneurial training and skills development play a pivotal role in shaping the success of women’s entrepreneurship. Studies have shown that women entrepreneurs with adequate business training, mentorship, and vocational skills are more likely to establish enterprises that survive beyond the start-up stage and contribute to local economic growth (Eze et al., 2020; Chinomona & Maziriri, 2021). In Nigeria, however, entrepreneurial education and skill acquisition programs targeting women remain limited, poorly funded, or inaccessible to rural populations. This has created a knowledge and competency gap, which restricts women from fully exploiting business opportunities in a competitive market. Consequently, empowering women through structured entrepreneurial training is essential for

building their managerial capabilities and enhancing their contributions to sustainable economic development.

Cultural and social norms have also been identified as influential factors shaping women's participation in entrepreneurship. Patriarchal structures, gender stereotypes, and traditional expectations often discourage women from engaging in business activities or confine them to less profitable ventures (Adebayo & Ogundipe, 2021; UNESCO, 2022). In Delta State, cultural practices that prioritize male inheritance rights and limit women's access to land and property have further marginalized women entrepreneurs. Nonetheless, recent shifts in societal attitudes, advocacy for gender equality, and policy interventions have begun to challenge these constraints, enabling more women to embrace entrepreneurship as a pathway to empowerment. The interplay between entrenched social norms and emerging opportunities therefore requires closer examination, as it determines the extent to which women can transition from marginal roles to mainstream economic actors.

Another critical dimension influencing women's entrepreneurship is technology adoption and digital literacy. The rapid expansion of digital platforms, e-commerce, and financial technology (fintech) has created unprecedented opportunities for women to overcome traditional market barriers (Boateng et al., 2020; Nwosu & Ezenwafor, 2023). For example, mobile money services and online marketplaces provide women with access to financial inclusion and global value chains. However, disparities in digital literacy, inadequate access to internet services, and the high cost of ICT infrastructure continue to hinder many women in Delta State from harnessing these opportunities fully. Bridging this digital divide is therefore central to enhancing women's entrepreneurial performance and ensuring their enterprises contribute meaningfully to sustainable economic growth.

The nexus between women's entrepreneurship and sustainable economic development is particularly relevant for Delta State, Nigeria. Despite the state's rich endowment in oil and natural resources, unemployment, poverty, and environmental degradation persist, necessitating alternative pathways for inclusive growth (Okoh & Okwu, 2021; UNDP, 2023). Women entrepreneurs can play a transformative role in addressing these challenges by fostering local job creation, reducing economic dependency, and promoting environmentally sustainable business practices. By leveraging training, challenging restrictive social norms, and adopting digital innovations, women in Delta State can shift from the margins of economic activity to mainstream contributors to development. Hence, understanding how these factors collectively influence sustainable economic outcomes is vital for policy and practice.

### Statement of the Problem

Despite growing recognition of women's entrepreneurship as a catalyst for inclusive development, women in Delta State continue to face multifaceted barriers that undermine their potential contributions. Entrepreneurial training opportunities remain inadequate, leaving many women without the managerial or technical competencies required for business success. Cultural and social norms rooted in patriarchal traditions continue to restrict women's access to resources and decision-making spaces, while digital exclusion limits their ability to exploit the benefits of technology in business. Consequently, women's enterprises often remain small-scale, underfunded, and confined to informal sectors, thereby reducing their impact on sustainable economic development. Although government and non-governmental organizations have introduced initiatives to support women entrepreneurs, the persistent gaps in training, cultural inclusivity, and digital adoption call into question the extent to which women's entrepreneurship has truly transitioned from the margins to the mainstream in driving sustainable economic development in Delta State.

### Research Objectives

To examine women's entrepreneurship as a catalyst for sustainable economic development in Delta State. Specifically, the study objectives are to:

- i) determine the effect of entrepreneurial training and skills development on sustainable economic development in Delta State.
- ii) evaluate the influence of cultural and social norms on women's entrepreneurship and its contribution to sustainable economic development in Delta State.
- iii) assess the impact of technology adoption and digital literacy on sustainable economic development in Delta State.

### Research Questions

The following research question were asked in line with the objectives:

- i) How does entrepreneurial training and skills development affect sustainable economic development in Delta State?
- ii) In what ways do cultural and social norms influence women's entrepreneurship and its contribution to sustainable economic development in Delta State?
- iii) What is the impact of technology adoption and digital literacy on sustainable economic development in Delta State?

### Research Hypotheses

Based on the research questions the following hypotheses were formulated in null form:

**H<sub>01</sub>:** Entrepreneurial training and skills development has no significant effect on sustainable economic development in Delta State.

**H<sub>02</sub>:** Cultural and social norms do not significantly influence women's entrepreneurship and its



contribution to sustainable economic development in Delta State.

**H03:** Technology adoption and digital literacy has no significant effect on sustainable economic development in Delta State.

### **Study significance**

This study is significant as it contributes to understanding how women's entrepreneurship can serve as a catalyst for sustainable economic development in Delta State by examining the roles of entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy. The findings will be valuable to policymakers in designing gender-sensitive policies that foster inclusive growth, to government and development agencies in structuring targeted interventions that empower women entrepreneurs, and to financial institutions in tailoring innovative support mechanisms for female-owned enterprises. Furthermore, the study will enrich academic literature by bridging gaps on the nexus between women's entrepreneurship and sustainable development in the Nigerian context, while also serving as a reference point for future researchers and advocacy groups committed to advancing gender equality and economic transformation.

### **Review of Related Literature**

In order to provide a clear theoretical grounding and establish the foundation for empirical investigation, it is important to conceptualize the key variables underpinning this study. Conceptualization allows for an in-depth understanding of how entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy interact to influence sustainable economic development. Each concept represents a critical dimension of women's entrepreneurship, and their interrelationships highlight both opportunities and challenges faced by female entrepreneurs in Delta State. By systematically clarifying these constructs, this review not only situates the study within existing scholarship but also identifies how these variables have been defined, applied, and measured in prior research. This structured approach ensures that the study builds on established knowledge while addressing contextual gaps relevant to women's entrepreneurship and sustainable development in Nigeria.

### **Women's Entrepreneurship**

Women's entrepreneurship in Delta State encompasses the diverse business ventures initiated and managed by women, ranging from informal trading to formal enterprises, with the potential to drive local development and reduce poverty. However, women entrepreneurs in the state continue to face several challenges that limit their effectiveness as catalysts for sustainable economic development. These challenges include restricted

access to finance and credit facilities (Alonso-González et al., 2021), inadequate entrepreneurial training and mentorship opportunities (Nwosu & Ezenwafor, 2023), cultural and social norms that reinforce gender stereotypes and limit property rights (Adebayo & Ogundipe, 2021), and a digital divide that hinders full participation in technology-driven markets (Nwosu & Ezenwafor, 2023). Consequently, many women-owned businesses remain small-scale, less competitive, and vulnerable to closure, necessitating an empirical study on how entrepreneurial training, cultural shifts, and digital empowerment can reposition women's entrepreneurship from the margins to the mainstream of Delta State's economic development (Okoh & Okwu, 2021).

### **Entrepreneurial Training and Skills Development**

Entrepreneurial training and skills development are essential components in equipping women entrepreneurs with the capacity to establish, manage, and grow sustainable businesses. Such training encompasses technical knowledge, managerial competencies, financial literacy, and problem-solving abilities that enhance business resilience and innovation (Olawale & Adebayo, 2021; Abiola & Lawal, 2022; Urhibo, B. O., & Orhero, A. E. (2023)). In developing contexts like Nigeria, access to entrepreneurial training has been linked with improved opportunity recognition, competitive advantage, and the ability to sustain enterprises in volatile environments (Ihua et al., 2020). Moreover, structured skills development programs offered through vocational centers, incubators, and universities enable women to overcome business start-up challenges, particularly in navigating formal markets and regulatory frameworks (Fapohunda, 2021).

Beyond technical competence, entrepreneurial training also builds confidence, leadership, and negotiation skills, which are crucial for women entrepreneurs who often operate in male-dominated spaces (Chinomona & Maziriri, 2021; Afolabi et al., 2023). Evidence shows that women with continuous access to mentorship and professional networks exhibit higher enterprise survival rates and greater contributions to community development (Onyeiwu & Nwankwo, 2022). Training further enhances adaptability to market trends, enabling women entrepreneurs to diversify income sources and reduce vulnerability to external shocks such as economic downturns or pandemics (Eneh, 2020). Thus, entrepreneurial training is not only a tool for enterprise growth but also a strategic mechanism for fostering inclusive and sustainable economic development.

### **Cultural and Social Norms**

Cultural and social norms significantly shape women's entrepreneurial participation and outcomes. In many African societies, patriarchal systems and traditional gender roles restrict women's access to

productive resources such as land, finance, and decision-making authority (Adebayo & Ogundipe, 2021; UNESCO, 2022). In Delta State, cultural expectations often confine women to domestic roles, thereby limiting their mobility, bargaining power, and ability to expand entrepreneurial activities beyond subsistence levels (Olowu, 2021). These restrictions create structural disadvantages, resulting in women's enterprises being smaller in scale, less profitable, and more vulnerable to closure compared to male-owned businesses (Alonso-González et al., 2021).

However, cultural and social norms are not static; evolving societal values, advocacy for gender equality, and exposure to global entrepreneurship models are gradually reshaping perceptions about women's roles in business (Okorie & Udeh, 2022; Ogu & Nwachukwu, 2023). Research indicates that communities that embrace more inclusive cultural practices witness higher levels of female participation in entrepreneurship and greater contributions to household income and local economic growth (Olaoye & Olaleye, 2022). Furthermore, supportive social networks, including women's cooperatives and associations, help female entrepreneurs navigate restrictive norms by providing solidarity, mentorship, and access to collective resources (Obi & Onwuka, 2020). Understanding the dual role of cultural and social norms—as both barriers and enablers—is therefore critical in assessing women's entrepreneurship and its link to sustainable economic development.

### **Technology Adoption and Digital Literacy**

Technology adoption and digital literacy have emerged as transformative forces in women's entrepreneurship, enabling access to new markets, financial inclusion, and global value chains. Digital tools such as mobile money platforms, e-commerce websites, and social media marketing provide women entrepreneurs with low-cost and flexible avenues to expand business operations and reach customers (Boateng et al., 2020; Nwosu & Ezenwafor, 2023). In Nigeria, digital adoption has been shown to reduce information asymmetries, increase efficiency, and enhance competitiveness among women-owned businesses, particularly in urban areas where internet penetration is higher (Adediran & Oyebanji, 2022). However, limited access to ICT infrastructure, high costs of internet services, and gendered digital divides still constrain many women entrepreneurs in rural communities (Okeke & Nnamani, 2021).

Digital literacy, in particular, has been identified as a critical determinant of whether women can fully exploit the benefits of technological innovations. Women entrepreneurs with higher levels of ICT proficiency are better positioned to adopt fintech solutions, utilize online training programs, and develop innovative business models (Idris & Musa, 2020; Ogu & Eze, 2022). Conversely, inadequate digital skills often leave women dependent on traditional business practices that limit growth and sustainability. Addressing these challenges requires deliberate policies and training programs targeted at bridging the digital divide for women in Delta State. By strengthening technology adoption and digital literacy, women's entrepreneurship can become a more effective catalyst for sustainable economic development.

### **Sustainable Economic Development**

Sustainable economic development refers to growth that meets present needs without compromising the ability of future generations to meet theirs, incorporating social equity, economic inclusivity, and environmental responsibility (UNDP, 2023; World Bank, 2023; Itiveh, & Omoye, 2023). In the context of Delta State, sustainable development is particularly urgent given the region's dependence on oil, which has led to environmental degradation, unemployment, and economic inequalities (Okoh & Okwu, 2021). Women's entrepreneurship provides an alternative pathway to economic diversification, as women-led enterprises often engage in sectors such as agriculture, services, and green innovations that promote community resilience and sustainability (Adewuyi & Olamide, 2022).

Moreover, research suggests that women entrepreneurs reinvest a significant portion of their income into families and communities, thereby fostering social development outcomes such as education, healthcare, and food security (Alvarez & Barney, 2020; Olaoye & Olaleye, 2022). When adequately supported through training, cultural inclusivity, and digital empowerment, women's entrepreneurship can contribute to job creation, poverty reduction, and more equitable income distribution in Delta State (UNESCO, 2022; Ogu & Nwachukwu, 2023). Thus, integrating women into the mainstream economy not only advances gender equality but also enhances the sustainability and inclusiveness of development in the state.

## Conceptual Framework

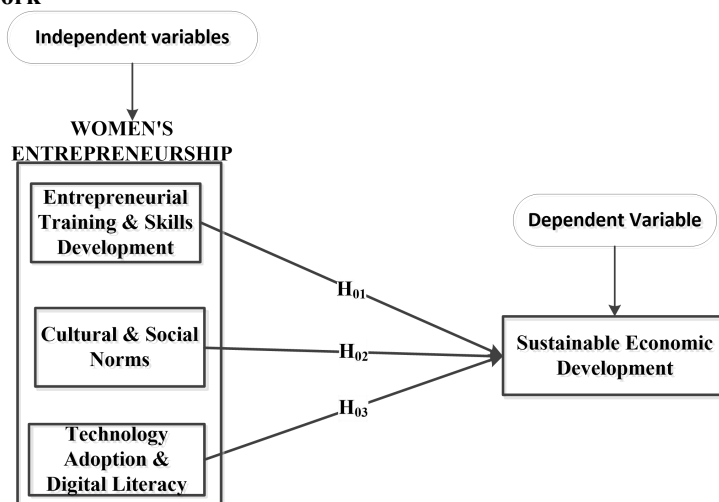


**Fig 1: Conceptual framework on women entrepreneurship and sustainable economic development (source: Researcher's construct, 2025)**

### Theoretical review

The study reviewed the following theory as it crucial to the study:

#### Sustainable Development Theory

The Sustainable Development Theory, rooted in the Brundtland Commission's definition of development that "meets the needs of the present without compromising the ability of future generations to meet their own needs," emphasizes a balanced integration of economic growth, social equity, and environmental sustainability. Scholars argue that sustainable development goes beyond mere economic expansion by incorporating inclusivity, resource efficiency, and resilience into developmental planning (Mensah, 2019; Purvis et al., 2019). In recent years, the theory has evolved to highlight the role of human capital and inclusive participation, stressing that marginalized groups, such as women, must be actively engaged in entrepreneurial activities for development to be truly sustainable (Sachs et al., 2022). This perspective underscores that empowering women entrepreneurs contributes not only to household welfare but also to long-term community prosperity, poverty reduction, and resilience in the face of global economic shocks (Kassie et al., 2022).

Anchoring this study on the Sustainable Development Theory is crucial because it provides a holistic framework for analyzing how entrepreneurial training, cultural and social reforms, and digital literacy among women can foster sustainable economic development in Delta State. Women's entrepreneurship, when strategically supported, aligns with the theory's call for inclusive growth by creating employment opportunities, promoting gender equality, and enhancing local innovation (Leal Filho et al., 2021). By focusing on women's empowerment, the study situates entrepreneurship as a transformative pathway to mainstream women into the productive economy, thereby reducing

inequalities and advancing the Sustainable Development Goals (SDGs), particularly Goals 5 (gender equality) and 8 (decent work and economic growth). Thus, the Sustainable Development Theory not only provides the philosophical foundation for the research but also justifies the investigation into how women entrepreneurs can serve as agents of sustainable development in Delta State.

### Empirical Review

Authors who's work directly or indirectly linked to the study were reviewed and are being presented as follows:

Eze and Nwankwo (2021) investigated the role of entrepreneurial training in enhancing women's business performance in South-East Nigeria. The study adopted a descriptive survey design with a sample size of 420 women entrepreneurs selected using stratified random sampling. Findings revealed that women who participated in structured entrepreneurial training programs exhibited higher levels of innovation, competitiveness, and business sustainability compared to those who did not. However, the study was limited to South-East Nigeria and did not consider the peculiarities of Delta State, especially in relation to digital literacy and cultural barriers. This gap informs the current study, which focuses specifically on women entrepreneurs in Delta State.

Similarly, Chege and Wangari (2023) examined entrepreneurial education and women's enterprise growth in Kenya using a mixed-method design with 300 respondents. The study found that women who received entrepreneurial and financial skills training were more resilient during economic downturns and had a 40% higher survival rate than untrained counterparts. Although comprehensive, the study overlooked the influence of cultural and social norms in shaping women's entrepreneurial engagement. Hence, the present study integrates training with cultural and digital literacy factors in explaining

women's role in sustainable development in Delta State.

Okolie et al. (2020) explored how cultural norms affect women's entrepreneurship in Southern Nigeria using a qualitative case study approach with 50 in-depth interviews. Findings revealed that restrictive inheritance rights, domestic expectations, and patriarchal control over resources limited women's ability to scale their businesses. While rich in context, the study lacked quantitative analysis, making it difficult to generalize findings across larger populations. This gap necessitates a more comprehensive survey-based study in Delta State that combines cultural barriers with entrepreneurial training and digital adoption.

From another perspective, Urhibo and Orhero (2023) examined rural women empowerment and development in Nigeria using a descriptive survey design with a sample size of 280 women across rural communities in Delta and Edo States. Their findings revealed that women's empowerment through skills training and access to credit facilities significantly enhanced household income, children's education, and community development. However, the study focused broadly on empowerment in rural areas without explicitly integrating technology adoption or cultural norms as factors influencing women's entrepreneurship. This gap further justifies the present study, which examines how entrepreneurial training, cultural factors, and digital literacy collectively shape women's entrepreneurship as a driver of sustainable economic development in Delta State.

Agbam (2024), in her study on women's contributions to small-scale business development in Abraka, Delta State, highlights their vital yet often overlooked role in local economic growth. Surveying 370 women in sectors like petty trading, food vending, and agriculture, the study uses a functionalist framework to show how they foster socio-economic stability. Despite challenges like limited capital and family burdens, these women demonstrate resilience through communal savings, informal networks, and family support. Their efforts drive job creation and community cohesion. However, the study's narrow scope signals a need for policy-focused research to better integrate women into sustainable economic development frameworks.

In a quantitative study, Abubakar and Bala (2023) surveyed 250 women entrepreneurs in Northern Nigeria using a cross-sectional design. Results indicated that in communities where cultural norms shifted to support female entrepreneurship, women established cooperative societies that boosted household income and community development. Despite this positive insight, the study was limited geographically to the North and did not assess how social norms interact with digital literacy. The present research addresses this by examining how cultural and social norms interact with technology adoption to influence women's entrepreneurship in Delta State.

Nwosu and Ezenwafor (2023) conducted a survey of 310 women entrepreneurs in South-South Nigeria to assess the role of digital literacy in business growth. Using regression analysis, they found a significant positive relationship between digital skills and women's ability to expand market reach and improve profitability. However, the study focused only on digital literacy, neglecting other determinants such as training and cultural barriers. This creates a gap that the present study seeks to bridge by adopting a holistic framework combining training, culture, and digital adoption.

Chege and Wangari (2023) analyzed technology adoption among 280 Kenyan women entrepreneurs using structural equation modeling (SEM). The study revealed that women who adopted mobile banking and social media marketing achieved 35% more business growth compared to those relying on traditional methods. Nonetheless, the study did not account for regional differences in infrastructure challenges such as unreliable internet, which is a major issue in Delta State. This gap justifies the need for a localized study on women's technology adoption within Delta State's unique socio-economic environment.

Leal Filho et al. (2021) examined women's entrepreneurship and sustainable development across 10 African countries using a comparative panel analysis of 1,200 enterprises. Results indicated that women-owned enterprises contributed significantly to poverty reduction and job creation, especially in rural communities. However, the study's broad regional focus overlooked state-specific contexts such as Delta State, where cultural and infrastructural barriers remain strong. The present study narrows this gap by focusing on how women entrepreneurs in Delta State can drive sustainable economic development.

Okoh and Okwu (2021) studied the role of female entrepreneurship in economic transformation in South-South Nigeria using a descriptive survey with 370 respondents. Findings showed that states with higher levels of women's entrepreneurial participation experienced faster community development, especially in education and healthcare investment. Nevertheless, the study did not explicitly examine how entrepreneurial training, cultural norms, and digital literacy intersect to shape women's contributions to sustainability. This gap underscores the rationale for the current study, which integrates these independent variables to assess women's entrepreneurship as a driver of sustainable development in Delta State.

### **Research Methodology**

The study adopted a descriptive survey research design, which was appropriate for examining the relationship between women's entrepreneurship and sustainable economic development in Delta State. This design was chosen because it enabled the collection of quantitative data from a large population, providing room for objective analysis

and generalization of findings. The design also allowed the researcher to investigate the influence of entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy on sustainable economic development using statistical techniques.

The population of the study consisted of registered women entrepreneurs operating in Delta State across various sectors such as trade, services, and small-scale manufacturing. According to the Delta State Ministry of Commerce and Industry, there were approximately 4,800 active women entrepreneurs as of 2023. This population was considered adequate because it represented a cross-section of women who were directly involved in entrepreneurship and potentially contributed to economic development in the state. The sample size for the study was determined using the Taro Yamane formula at a 5% margin of error, which produced a sample size of 370 respondents. A stratified random sampling technique was employed to ensure fair representation of women entrepreneurs across the three senatorial districts of Delta State. The use of this technique enhanced the representativeness of the sample by capturing the diversity of women engaged in entrepreneurship across urban, semi-urban, and rural areas.

Data for the study were collected primarily from primary sources. The researcher administered structured questionnaires to the selected respondents, with items designed in line with the study objectives and research questions. The questionnaire consisted of closed-ended questions measured on a 5-point

Likert scale, ranging from Strongly Agree (5) to Strongly Disagree (1). The main instrument used for the study was a structured questionnaire divided into two sections. Section A captured demographic information of respondents, while Section B focused on the independent and dependent variables of the study. Items in Section B were developed based on existing validated scales in entrepreneurship and development studies, which were adapted to suit the local context of Delta State. The instrument was subjected to both face and content validity by experts in entrepreneurship and development studies, who reviewed the items to ensure clarity, relevance, and alignment with the study objectives. Reliability of the instrument was tested using Cronbach's Alpha, and the overall reliability coefficient obtained was 0.83, indicating a high level of internal consistency and dependability of the instrument.

The data collected were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency distribution, mean, and standard deviation were used to summarize demographic variables and research questions. Inferential statistics including multiple regression analysis were employed to test the hypotheses and determine the extent to which entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy influenced sustainable economic development in Delta State. All analyses were conducted using the EViews Statistical Packages version 9).

The model of the study was specified as:

$$SED = \beta_0 + \beta_1 ETSD + \beta_2 CSN + \beta_3 TADL + \mu$$

Where:

**SED** = Sustainable Economic Development (Dependent Variable)

**ETSD** = Entrepreneurial Training and Skills Development

**CSN** = Cultural and Social Norms

**TADL** = Technology Adoption and Digital Literacy

$\beta_0$  = Constant term

$\beta_1 - \beta_3$  = Coefficients of the independent variables

$\mu$  = Error term

## Result and Discussion

This section presents the results from the analysis of the questionnaire and the formulated hypotheses and

are being presented in tables of frequency, percentage, correlation matrix, vif and multiple regressions as follows:

### Data presentation

**Table 4.1 Analysis of Questionnaire Distributed**

| Questionnaire     | Frequency | Percentage |
|-------------------|-----------|------------|
| Returned and used | 348       | 94.05%     |
| Invalid           | 15        | 4.05%      |
| Not Returned      | 7         | 1.89%      |
| Distributed       | 370       | 100        |

*Source: Researcher's Computation, 2025*

Table 4.1 shows the analysis of questionnaire distribution and retrieval. Out of the 370 questionnaires distributed, 348 were correctly completed and used for analysis, representing a high

response rate of 94.05%. This indicates strong participation and reliability of the data collected. Only 15 questionnaires, representing 4.05%, were found invalid due to incomplete or inconsistent

responses, while 7 questionnaires, representing 1.89%, were not returned at all. The high proportion of valid responses demonstrates that the data

gathered is robust and sufficient for meaningful statistical analysis, thereby strengthening the credibility and generalizability of the study's findings.

**Table 2: Mean responses rate to question statements**

| S/N | Question Statement                                                              | Mean        | Std         | Remark          |
|-----|---------------------------------------------------------------------------------|-------------|-------------|-----------------|
|     | <b>Sustainable Economic Development (SED)</b>                                   |             |             |                 |
| 1   | My business has helped me to create jobs for others.                            | 2.92        | 1.40        | Disagree        |
| 2   | My business has improved the wellbeing of my family.                            | 3.11        | 1.49        | Agree           |
| 3   | Women's businesses help to reduce poverty in my community.                      | 2.95        | 1.41        | Disagree        |
| 4   | Running a business has helped me earn steady income.                            | 2.93        | 1.44        | Disagree        |
| 5   | My business supports practices that are good for the community and environment. | 3.05        | 1.39        | Agree           |
|     | <b>Mean Aggregate</b>                                                           | <b>2.99</b> | <b>1.43</b> | <b>Disagree</b> |
|     | <b>Entrepreneurial Training and Skills Development (ETSD)</b>                   |             |             |                 |
| 1   | I have attended training that improved how I run my business.                   | 3.01        | 1.45        | Agree           |
| 2   | Training has helped me know how to manage risks in business.                    | 3.09        | 1.44        | Agree           |
| 3   | Skills I learned have made me more confident in my business.                    | 3.00        | 1.38        | Agree           |
| 4   | Training has taught me how to handle money and plan better.                     | 3.09        | 1.45        | Agree           |
| 5   | I have access to programs that help me improve my business skills.              | 2.99        | 1.43        | Disagree        |
|     | <b>Mean Aggregate</b>                                                           | <b>3.04</b> | <b>1.43</b> | <b>Agree</b>    |
|     | <b>Cultural and Social Norms (CSN)</b>                                          |             |             |                 |
| 1   | In my community, culture allows women to do business.                           | 3.00        | 1.43        | Agree           |
| 2   | My family supports me in running my business.                                   | 2.86        | 1.44        | Disagree        |
| 3   | Cultural beliefs sometimes stop women from doing business.                      | 3.13        | 1.36        | Agree           |
| 4   | Some people in society think women should not run businesses.                   | 3.01        | 1.44        | Agree           |
| 5   | When women are recognized in the community, their businesses grow.              | 3.12        | 1.38        | Agree           |
|     | <b>Mean Aggregate</b>                                                           | <b>3.02</b> | <b>1.41</b> | <b>Agree</b>    |
|     | <b>Technology Adoption and Digital Literacy (TADL)</b>                          |             |             |                 |
| 1   | I use phone apps (like WhatsApp or Facebook) to sell my products.               | 3.03        | 1.37        | Agree           |
| 2   | Mobile banking makes it easier for me to run my business.                       | 3.00        | 1.45        | Agree           |
| 3   | Using technology helps me compete with others in business.                      | 2.86        | 1.41        | Disagree        |
| 4   | I find it easy to learn and use new technology for my business.                 | 3.07        | 1.41        | Agree           |
| 5   | Not knowing how to use technology is a problem for women like me.               | 3.04        | 1.42        | Agree           |
|     | <b>Mean Aggregate</b>                                                           | <b>3.00</b> | <b>1.41</b> | <b>Agree</b>    |

*Source: Researcher's Computation, 2025*

The result from Table 4.2 indicates the mean responses and variability of opinions regarding Sustainable Economic Development. The aggregate mean score of 2.99 with a standard deviation of 1.43 shows that respondents generally disagreed that their businesses had made strong contributions to economic development. Specifically, the relatively low means of 2.92, 2.95, and 2.93 for job creation, poverty reduction, and steady income respectively, with standard deviations around 1.40, reflect weak consensus and limited economic impact in these areas. On the other hand, slightly higher means of 3.11 and 3.05 on family wellbeing and community-

friendly practices, coupled with standard deviations above 1.39, suggest that while there is agreement that women's businesses support households and social responsibility, the spread of responses indicates that the extent of this impact varies widely among participants.

For Entrepreneurial Training and Skills Development, the aggregate mean of 3.04 and a standard deviation of 1.43 indicate that respondents agreed that training has a positive effect on their business activities, though the level of agreement was moderate and responses were widely spread. Mean scores above 3.00 on areas such as risk management, financial

planning, and business confidence reflect the beneficial role of training, but the high standard deviations around 1.44 point to differences in the level of exposure and impact among women entrepreneurs. The lowest mean score of 2.99 on access to programs reveals that availability of consistent training opportunities remains inadequate, further supported by the relatively high variability across respondents.

Cultural and Social Norms recorded an aggregate mean of 3.02 and a standard deviation of 1.41, showing that respondents agreed that cultural and social structures play an important role in shaping women's entrepreneurship, but the variability suggests mixed experiences. The mean of 3.13 with a standard deviation of 1.36 on cultural beliefs limiting women, along with 3.12 on community recognition with a spread of 1.38, highlights that while recognition supports growth, entrenched cultural barriers remain significant. Family support, however, had a mean of 2.86 and a deviation of 1.44, showing disagreement and indicating that family structures are

less reliable in supporting women entrepreneurs, with responses differing widely.

Technology Adoption and Digital Literacy had an aggregate mean of 3.00 with a standard deviation of 1.41, reflecting general agreement that technology is useful but with moderate impact and wide response variability. For instance, the mean of 3.03 on the use of phone applications and 3.00 on mobile banking indicate positive use of basic digital tools, while the mean of 2.86 on competing with technology suggests that adoption is not yet translating into significant competitive advantage. Standard deviations around 1.37 to 1.45 imply that while many women are benefiting from technology, others still lag behind, particularly in advanced digital practices.

The means and standard deviations shows that while there is moderate agreement that women's entrepreneurship contributes to family welfare, social responsibility, training outcomes, cultural support, and digital adoption, the consistently high spread of responses across variables highlights uneven experiences and access, which limit the overall economic development impact in Delta State.

**Table 3: Summary of Correlation Matrix for the Variables**

| Variable | ETSD   | CSN    | TADL  | SED   |
|----------|--------|--------|-------|-------|
| ETSD     | 1.000  |        |       |       |
| CSN      | -0.054 | 1.000  |       |       |
| TADL     | -0.019 | -0.018 | 1.000 |       |
| SED      | 0.395  | 0.198  | 0.450 | 1.000 |

Source: EViews 9v output, 2025

The correlation matrix shows the relationship among the study variables. Entrepreneurial Training and Skills Development (ETSD) has a moderate positive correlation with Sustainable Economic Development (SED) at 0.395, suggesting that training and skills significantly enhance women's contributions to economic growth. Cultural and Social Norms (CSN) has a weak positive correlation with SED at 0.198, implying that supportive cultural factors play a role, though less strongly, in fostering women's entrepreneurial impact. Technology Adoption and Digital Literacy (TADL) has the strongest positive correlation with SED at 0.450, indicating that the use

of technology is a key driver of women's businesses contributing to economic development. Interestingly, ETSD shows very weak negative correlations with CSN (-0.054) and TADL (-0.019), while CSN and TADL are also negatively but insignificantly related (-0.018), suggesting that training, cultural factors, and technology adoption may not directly reinforce one another, yet each independently relates positively to sustainable development. This highlights that while all three independent variables influence economic development, technology adoption appears to be the most critical contributor.

**Table 4. Variance Inflation Factors**

Date: 09/06/25 Time: 21:54

Sample: 370

Included observations: 348

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|----------|----------------------|----------------|--------------|
| C        | 0.209199             | 82.90385       | NA           |
| ETSD     | 0.001561             | 6.571791       | 1.003320     |
| CSN      | 0.016611             | 60.24741       | 1.003291     |
| TADL     | 0.003841             | 14.69910       | 1.000700     |

Source: EViews 9v output, 2025

The Variance Inflation Factor (VIF) results in Table 4 indicate that multicollinearity is not a concern among the independent variables in the model. The centered VIF values for Entrepreneurial Training and Skills Development (1.003), Cultural and Social Norms (1.003), and Technology Adoption and Digital Literacy (1.001) are all very close to 1, which suggests minimal correlation between predictors and confirms that each variable contributes independently

to explaining Sustainable Economic Development. Although the uncentered VIF values are relatively high, particularly for CSN (60.25) and TADL (14.70), these are not relevant for assessing multicollinearity, as the centered VIF is the standard measure. Therefore, the results imply that the regression estimates are stable and reliable, with no inflation of standard errors due to collinearity among the explanatory variables.

### **Testing of Hypotheses**

The following hypotheses were tested using multiple regression the result is being presented in table 5 hereunder:

**H<sub>01</sub>:** Entrepreneurial training and skills development has no significant effect on sustainable economic development in Delta State.

**H<sub>02</sub>:** Cultural and social norms do not significantly influence women's entrepreneurship and its contribution to sustainable economic development in Delta State.

**H<sub>03</sub>:** Technology adoption and digital literacy has no significant effect on sustainable economic development in Delta State.



**Table 5: Summary of Multiple Regression for hypotheses 1 to 5**

Dependent Variable: SED

Method: Least Squares

Date: 09/06/25

Time: 21:49

Sample: 370

Included observations: 348

| Variable           | Coefficient | Std. Error            | t-Statistic | Prob.    |
|--------------------|-------------|-----------------------|-------------|----------|
| C                  | 2.434663    | 0.457382              | 5.323038    | 0.0000   |
| ETSD               | 0.399335    | 0.039513              | 10.10645    | 0.0302   |
| CSN                | 0.716104    | 0.128882              | 5.556264    | 0.0410   |
| TADL               | 0.696115    | 0.061973              | 11.23247    | 0.0120   |
| R-squared          | 0.418093    | Mean dependent var    |             | 3.000000 |
| Adjusted R-squared | 0.403018    | S.D. dependent var    |             | 1.223120 |
| S.E. of regression | 0.937091    | Akaike info criterion |             | 2.719354 |
| Sum squared resid  | 302.0797    | Schwarz criterion     |             | 2.763632 |
| Log likelihood     | -469.1676   | Hannan-Quinn criter.  |             | 2.736982 |
| F-statistic        | 82.38648    | Durbin-Watson stat    |             | 2.045382 |
| Prob(F-statistic)  | 0.000000    |                       |             |          |

*Source: EViews 9v output, 2025*

The regression results in Table 5 provide evidence on the effects of the independent variables on sustainable economic development (SED) in Delta State. Looking at the coefficients, ETSD has a positive and significant effect on SED ( $\beta = 0.399$ ,  $t = 10.11$ ,  $p = 0.0302$ ), suggesting that improvements in women's training and skills significantly enhance their contributions to economic development. CSN also has a positive and significant effect ( $\beta = 0.716$ ,  $t = 5.56$ ,  $p = 0.0410$ ), indicating that supportive cultural and social environments encourage women's entrepreneurial engagement in ways that foster sustainability. Similarly, TADL has the strongest positive effect ( $\beta = 0.696$ ,  $t = 11.23$ ,  $p = 0.0120$ ), confirming that digital literacy and technology adoption are critical drivers of women's entrepreneurial impact on economic development.

The R-squared value of 0.418 indicates that about 42% of the variation in SED is explained jointly by entrepreneurial training and skills development (ETSD), cultural and social norms (CSN), and technology adoption and digital literacy (TADL), while the adjusted R-squared of 0.403 confirms that the model fits well after adjusting for the number of predictors. The overall F-statistic of 82.39 with a probability value of 0.000 shows that the model is statistically significant, meaning that the independent variables collectively predict SED effectively.

These results lead to the rejection of the three null hypotheses, as each independent variable showed significant positive influence on SED. Importantly, the Durbin-Watson statistic of 2.05 suggests no serious

autocorrelation problem, supporting the reliability of the estimates. In summary, the findings demonstrate that strengthening entrepreneurial skills, reshaping cultural norms, and enhancing digital literacy are crucial pathways through which women's entrepreneurship can serve as a catalyst for sustainable economic development in Delta State.

### Discussion of Findings

The findings from the analysis are being discussed as follows:

#### Entrepreneurial Training and Skills Development and Sustainable Economic Development

The regression result revealed that entrepreneurial training and skills development (ETSD) had a positive and significant effect on sustainable economic development ( $\beta = 0.399$ ,  $p < 0.05$ ). This indicates that women who undergo training and acquire business skills are better positioned to grow enterprises that contribute to job creation, family welfare, and community development. This finding is consistent with the work of Ojong, Anuforo, and Akpan (2021), who observed that entrepreneurial training enhanced women's business resilience and innovation in Nigeria. Similarly, Akinwale and Akinbode (2020) confirmed that skill acquisition programs improved the survival rate of small and medium enterprises. However, other studies have cautioned that training alone does not guarantee business growth where there is limited access to finance and weak market linkages (Eze & Nnadi,

2022; Ali & Nwosu, 2021). From the Sustainable Development Theory perspective, this result emphasizes the importance of human capital development as a foundation for social and economic sustainability. By equipping women with relevant skills, training helps them to meet present economic needs while strengthening their long-term capacity to support sustainable community development.

### **Cultural and Social Norms and Sustainable Economic Development**

The regression analysis further revealed that cultural and social norms (CSN) had a significant positive effect on sustainable economic development ( $\beta = 0.716$ ,  $p < 0.05$ ). This shows that supportive social structures and enabling cultural practices increase women's entrepreneurial participation and allow them to contribute more meaningfully to development. This finding agrees with Urhobo and Orhero (2023), who demonstrated that supportive rural cultural structures enabled women to expand their businesses and improve community welfare. In a similar vein, Kanu and Ugwu (2021) reported that cultural recognition and family support were critical for female entrepreneurship success in Southeastern Nigeria. On the other hand, Nwachukwu (2020) and Agbim (2021) argued that cultural constraints, such as discriminatory inheritance practices and patriarchal attitudes, still pose significant barriers that limit the scale of women's entrepreneurial activities. Viewed through the lens of Sustainable Development Theory, this result underscores the role of social inclusion, one of the key pillars of sustainability. Societal acceptance and supportive cultural attitudes toward women entrepreneurs not only improve economic outcomes but also ensure equity and fairness in development, helping women to balance present needs with long-term growth opportunities.

### **Technology Adoption and Digital Literacy and Sustainable Economic Development**

The results also revealed that technology adoption and digital literacy (TADL) had the strongest positive effect on sustainable economic development ( $\beta = 0.696$ ,  $p < 0.05$ ). This shows that when women entrepreneurs use digital tools such as mobile banking, social media, and e-commerce platforms, they are able to expand market reach, improve efficiency, and generate greater community impact. This finding supports the work of Adesina and Ayo (2022), who reported that digital financial inclusion significantly improved women's entrepreneurial outcomes in Nigeria. Likewise, Nduka and Olayemi (2021) found that digital literacy increased women's competitiveness and participation in the formal economy. Conversely, Okafor (2020) and Musa (2021) found that infrastructural challenges, high internet costs, and the gendered digital divide limited

the extent to which technology could be leveraged by women entrepreneurs, especially in rural communities. In terms of Sustainable Development Theory, the positive effect of TADL suggests that technology strengthens the economic and social pillars of sustainability by improving productivity and inclusion. However, unless digital access is broadened equitably and infrastructural barriers are addressed, the full potential of women's entrepreneurship to contribute to long-term sustainable development will remain unrealized.

### **Conclusion**

The findings of this study provide strong evidence that entrepreneurial training and skills development, cultural and social norms, and technology adoption and digital literacy significantly influence sustainable economic development among women entrepreneurs in Delta State. The results demonstrate that training equips women with vital skills for effective business management, while cultural and social support enhances women's participation in entrepreneurship despite existing gender barriers. Similarly, technology adoption and digital literacy emerged as powerful drivers of competitiveness and business growth, enabling women entrepreneurs to access wider markets and financial services. Collectively, these results highlight that sustainable economic development can be accelerated when structural, cultural, and technological enablers are integrated into women's entrepreneurial activities, reinforcing the relevance of Sustainable Development Theory in linking individual empowerment with broader economic transformation.

### **Recommendations**

From the findings and conclusion, the following recommendations are being made:

- i) Government and development agencies should strengthen entrepreneurial training and skills development programs tailored to women, with a focus on practical financial literacy, risk management, and digital competencies, so that women entrepreneurs can enhance their confidence, competitiveness, and long-term business sustainability.
- ii) Community leaders, policymakers, and civil society organizations should actively challenge restrictive cultural and social norms by promoting gender-sensitive policies, awareness campaigns, and support networks that encourage family and societal acceptance of women's entrepreneurship as a driver of community-wide development.
- iii) Stakeholders in the private and public sectors should invest in affordable digital infrastructure and provide training opportunities that improve

women's digital literacy, enabling them to harness mobile banking, e-commerce, and online platforms to expand their markets, reduce transaction barriers, and contribute more effectively to sustainable economic development.

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## Fuel Subsidy Removal and Consumer Spending Patterns in Etsako-West LGA

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### Abstract

*This study examines the effect of fuel subsidy removal on consumer spending patterns in Etsako-west local government area of Edo state in perspective. The subsidiary objectives are to assess how factors such as fuel subsidy removal (FSR), consumer coping mechanisms (CCM), perceptions (CPR), adoption of alternative energy and transportation (AET), and inflation (INF) influence spending behaviour. A quantitative approach was used, with data collected using Likert-scale questionnaires administered across the region. Ordinal regression was employed for data analysis. Model fitting results showed that the full model significantly improved over the intercept-only model (Chi-square = 138.806,  $p < 0.001$ ), with Pseudo R-square values (Cox & Snell = 0.431; Nagelkerke = 0.448) indicating moderate predictive power. The deviance goodness-of-fit test was satisfactory ( $p = 1.000$ ), although the test of parallel lines was significant ( $p = 0.000$ ), suggesting a violation of the proportional odds assumption. Among the predictors, only AET ( $\beta = 2.272$ ,  $p = 0.000$ ) and INF ( $\beta = 1.209$ ,  $p = 0.000$ ) were significant, indicating that inflation and the shift to alternative energy sources are key drivers of changes in spending patterns. FSR, CCM, and CPR were not statistically significant. The study concludes that economic constraints, not awareness or perception, drive consumer adjustment. It recommends government intervention to curb inflation and invest in accessible alternative energy and transport infrastructure. Future studies should explore income level as a moderating factor and consider alternative models for more robust analysis.*

**Keywords:** *Fuel Subsidy, Fuel Subsidy Removal, Consumer Spending Patterns, Ordinal Regression, Etsako-west Local Government Area*

### Introduction

Fuel subsidies, though intended to make energy affordable, impose heavy fiscal and social costs (Ovaga & Okechukwu, 2022). Global subsidy spending rose to \$1 trillion in 2022, exceeding aid allocations (International Energy Agency, 2022), with critics urging redirection to development (Couharde & Mouhoud, 2020; Ozili & Ozen, 2021). In Nigeria, subsidies introduced in the 1970s persisted despite failed removals in 1986 and 2012; by 2022, they consumed ₦4 trillion (23% of the budget), leading to their withdrawal in June 2023. While some studies highlight environmental benefits (Adekunle & Oseni, 2021; Asare et al., 2020), others stress corruption and economic instability (Omotosho, 2020; Umeji & Eleanya, 2021). The 2023 removal, lacking cushioning measures, caused fuel price hikes, inflation, and reduced household spending (Smith, 2016, as cited in Nwachukwu, 2023). Fuel subsidy removal (FSR) in

Nigeria has fueled inflation, reduced savings, and weakened SMEs, prompting coping strategies like carpooling (Francis & Lucas, 2023), and adoption of alternative energy e.g electric vehicles, solar powered electricity instead of fuel or diesel generators, etc.

### Statement of the Problem

In Etsako-West Local government area, rising fuel costs strain households and businesses, cutting essential spending and deepening inequality. Despite its goal of fiscal stability, little research explores its local impact; this study examines how subsidy removal affects consumer spending patterns in the Etsako-west local government area.

### Research Objectives:

The main objective of this research is to: examine the effect of fuel subsidy removal (FSR) on consumer spending patterns (CSP) in Etsako-west Local Government Area in perspective.

### Specific objectives are to:

- i. determine the effect of consumer coping mechanisms (CCM) on consumer spending patterns (CSP) following fuel subsidy removal in Etsako-west Local Government Area.
- ii. assess the effect of consumer perceptions of fuel subsidy removal (CPR) on consumer spending patterns (CSP) in Etsako-west Local Government Area.
- iii. analyze how shifts to alternative energy sources and transportation (AET) affect consumer spending patterns (CSP) in Etsako-west Local Government Area.
- iv. evaluate the effect of inflation (INF) on consumer spending patterns (CSP) in response to fuel subsidy removal (FSR) in Etsako-west Local Government Area.

Based on the objectives provided, the researcher hereby posits the following hypotheses:

**H<sub>01</sub>:** Fuel subsidy removal has no significant effect on consumer spending patterns in Etsako-West Local government area in of Edo state in perspective.

**H<sub>02</sub>:** Consumer coping mechanisms (CCM) have no significant effect on consumer spending patterns (CSP) in Etsako-west Local Government Area.

**H<sub>03</sub>:** Consumer perceptions of fuel subsidy removal (CFR) do not significantly affect consumer spending patterns (CSP) in Etsako-west Local Government Area.

**H<sub>04</sub>:** Shifts to alternative energy sources and transportation (AET) have no significant effect on consumer spending patterns (CSP) in Etsako-west Local Government Area.

**H<sub>05</sub>:** Inflation (INF) has no significant effect on consumer spending patterns (CSP) in Etsako-west Local Government Area.

### Review of Related Literature

**Concept of Subsidy:** A subsidy is government financial support that reduces costs through direct payments, tax relief, or price controls to enhance welfare and affordability (Investopedia, 2015; Merriam-Webster, n.d.; Oxford Advanced Learner's Dictionary, n.d.). Subsidies may be direct, lowering prices immediately, or indirect, via regulations and investments (Alozie, 2009; Adebisi, 2011).

**Concept of Fuel Subsidy:** Fuel subsidy refers to selling petroleum products below production or importation costs, mainly Premium Motor Spirit (PMS) in Nigeria, as a market intervention to reduce public

burdens (Bakare, 2012; Gordon & Suzanne, 2023). These may take financial, labor, or consumption forms (Francis & Lucas, 2023).

### Concept of Fuel Subsidy Removal (FSR):

Fuel subsidy removal is the withdrawal of government interventions that lower fuel costs, often sparking debate over its socio-economic implications (Centre for Public Policy Alternatives, 2012).

### History of Fuel Subsidy Removal from 1973-2023

Since 1973, Nigeria has witnessed repeated subsidy removals and fuel price hikes under successive regimes, culminating in Tinubu's 2023 policy that raised prices to over ₦600 per litre (NNPC, 2024). The success of such reforms depends on phased implementation, transparency, and public trust, as poorly managed removals have fuelled protests, inequality, and corruption (CSEA, 2010; World Bank, 2010; Ikpeze et al., 2004). Nonetheless, potential benefits include fiscal savings for infrastructure and social services, as well as competition and investment in the petroleum sector (Oluwabukola, 2023; Civic Keypoint, 2023).

### Fuel Subsidy Removal (FSR) and Consumer Spending Patterns (CSP):

Subsidy removal has reshaped consumption, particularly among low-income earners. Rising fuel and energy costs have encouraged shifts toward bicycles, electric vehicles, solar power, and compressed natural gas (Statista, 2024; Nwohu et al., 2023; Mutsaka, 2023).

### Consumer Coping Mechanisms

Coping mechanisms include income diversification, cost-cutting, and carpooling, though these disproportionately burden poor households (Algorani & Gupta, 2022; Orluchukwu & ThankGod, 2024).

### Fuel Subsidy Removal (FSR) and its effect on Inflation:

The policy has fuelled sharp inflation, reducing purchasing power and consumption expenditure, while increasing transport and production costs (Al-Awlaqi et al., 2018; Mohammed et al., 2020; Houeland, 2020; Ozili & Obiora, 2023). Although demand for petrol has declined, reliance on global oil prices suggests continued high costs, pushing consumers toward renewable alternatives (Raji, 2018).

### Consumer Perceptions:

In areas like Etsako-West Local Government Area, consumers largely view subsidy removal as unfair and elite-driven, reflecting distrust in government and concerns over poor reinvestment of savings (Okereke et al., 2024). Households report significant erosion of purchasing power, forcing spending shifts toward

essentials (Salihu, 2023). Scepticisms persists regarding alternatives like CNG due to poor infrastructure (Mutsaka, 2023), while regional perspectives frame the

policy as deepening economic injustice in oil-producing communities (Meludu et al., 2024).

**Table 2: Average Monthly Consumption of PMS (Petroleum Methylated Spirit) before and after Subsidy Removal**

| Month       | Average Consumption  | % Change |
|-------------|----------------------|----------|
| Jan., 2023  | 62.31 Million Litres |          |
| Feb., 2023  | 66.44 Million Litres | ↑6.63%   |
| Mar., 2023  | 72.39 Million Litres | ↑8.96%   |
| April, 2023 | 69.62 Million Litres | ↓3.83%   |
| May, 2023   | 69.54 Million Litres | ↓0.11%   |
| June, 2023  | 49.84 Million Litres | ↓28.33%  |
| July, 2023  | 45.47 Million Litres | ↓8.77%   |

Source: NMDPRA (Nigerian Midstream and Downstream Petroleum Regulatory Authority)

Data

Based on the data above, PMS consumption increased steadily from January to March 2023 due to economic activities and anticipated price changes, rising from 62.31 to 72.39 million litres. Demand stabilized from April to May, with minimal fluctuations, indicating market balance. However, subsidy removal in June led to a sharp decline (↓28.33%), followed by a further drop in July (↓8.77%) as consumers adjusted by reducing fuel usage. This decline impacts transportation, logistics, and overall economic activity. Policy interventions, such as public transport subsidies, could help stabilize consumption. The shift in consumer behaviour suggests a long-term reduction in fuel use unless prices are moderated.

#### Concept of Consumer Spending Patterns (CSP):

CSP refers to household purchasing behaviours shaped by income, prices, inflation, credit, consumer confidence, technology, and socio-cultural factors (Mankiw, 2019; Kotler & Keller, 2016). As the largest component of aggregate demand (Krugman & Wells, 2018), CSP shifts with economic cycles and social trends. Classical theories like Keynes' Absolute Income Hypothesis (1936) and Friedman's Permanent Income Hypothesis (1957) explain consumption behaviour relative to income levels.

#### Factors Influencing Consumer Spending Patterns (CSP):

Income determines consumption capacity (Case et al., 2020), while inflation reduces purchasing power and prioritizes essentials (Blanchard, 2021). Consumer confidence influences saving vs. spending (Deaton, 1992). Credit access stimulates but may later restrain consumption (Mishkin, 2016). Technology fosters online and impulse spending (Laudon & Traver, 2021), and socio-cultural shifts drive trends like eco-friendly purchases (Solomon, 2018).

#### CSP and Fuel Subsidy Removal (FSR):

Subsidy removal raises costs of fuel, transport, and goods, driving inflation and forcing households to prioritize basics over discretionary spending (World Bank, 2023; NBS, 2024; IMF, 2023). In Nigeria, the 2023 removal reduced purchasing power, triggered poverty, and shifted behaviour toward survival-focused consumption (World Bank, 2023).

#### Theoretical Framework:

Consumer Behaviour Theory (CBT) explains how price changes lead consumers to prioritize essentials, cut non-essentials, and seek alternatives (Howard & Sheth, 1969; Kotler & Keller, 2016). Rational Choice Theory (RCT) emphasizes cost-benefit decisions to maximize utility (Becker, 1976; Elster, 1989). This study adopts CBT for its focus on consumer responses to price shifts.

#### Empirical Review:

Studies show subsidy removal alters energy and transport choices, with households shifting to cheaper alternatives (Obinna, 2020; Lin & Kuang, 2020; Harring et al., 2023). In Nigeria, rising fuel prices increased reliance on public transport and ride-sharing (Akpan & Uford, 2024), while inflation eroded savings and widened inequality (Ogboru & Akinyotu, 2024; Abd Obaida et al., 2020). Evidence supports the inclusion of Alternative Energy & Transportation Shifts (AET) and Inflation Impact (INF) as key determinants of CSP post-FSR.

#### Methodology

This study adopted a descriptive survey design to examine the effects of fuel subsidy removal on consumer spending patterns in Etsako-west LGA. The population was 294,000 (NPC, 2022), and a sample size of 246 was determined using Freund and Williams' formula (1967) with parameters:  $P = 0.8$ ,  $Q = 0.2$ ,  $Z =$

1.96, and  $e = 0.05$  (Agbadudu, 2004). A pilot test 100 questionnaires (test-retest method) confirmed  $P = 0.8$  and  $Q = 0.2$ . Respondents were selected via random sampling across towns and villages. Data were collected using a 5-point Likert questionnaire, and

analyzed with descriptive statistics (mean, SD) and ordinal regression, with hypotheses tested at  $p < 0.05$ . This approach ensured reliable assessment of subsidy removal's impact on consumer spending in the area.

**Table 4.0: Presentation and Analysis of Data**

| <b>Fuel Subsidy Removal (FSR)</b>                                   |                                                                                                      |     |     |    |    |    |       |      |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----|-----|----|----|----|-------|------|
| S/No                                                                | Questionnaire Item                                                                                   | SA  | A   | UD | DA | SD | STD   | M    |
| FSR1                                                                | The removal of fuel subsidies has led to a significant increase in my transportation costs.          | 246 | 0   | 0  | 0  | 0  | 105.1 | 49.2 |
| FSR2                                                                | The prices of essential goods and services have increased since the fuel subsidy was removed.        | 235 | 7   | 4  | 0  | 0  | 99.95 | 49.2 |
| FSR3                                                                | My household expenses have increased due to higher fuel prices.                                      | 230 | 8   | 0  | 8  | 0  | 99.87 | 49.2 |
| <b>Consumer Coping Mechanisms (CCM)</b>                             |                                                                                                      |     |     |    |    |    |       |      |
| CCM1                                                                | I have had to reduce my spending on non-essential items due to rising fuel costs                     | 228 | 11  | 4  | 3  | 0  | 94.7  | 49.2 |
| CCM2                                                                | I have switched to using more cost-effective transportation options                                  | 240 | 5   | 1  | 0  | 0  | 101.1 | 49.2 |
| CCM3                                                                | I have adjusted my monthly budget to cope with the increased cost of goods and services.             | 223 | 15  | 2  | 6  | 0  | 94.7  | 49.2 |
| <b>Consumer Perception of Fuel Subsidy Removal (CPR)</b>            |                                                                                                      |     |     |    |    |    |       |      |
| CPR1                                                                | I believe the removal of fuel subsidies was necessary for economic growth.                           | 107 | 68  | 0  | 51 | 20 | 37.34 | 49.2 |
| CPR2                                                                | I think the government made the right decision by removing the fuel subsidy.                         | 82  | 30  | 2  | 78 | 54 | 30.08 | 49.2 |
| CPR3                                                                | The fuel subsidy removal has had more negative effects than benefits for consumers.                  | 230 | 15  | 1  | 0  | 0  | 90.58 | 49.2 |
| <b>Shift to Alternative Energy Sources and Transportation (AET)</b> |                                                                                                      |     |     |    |    |    |       |      |
| AET1                                                                | Due to high fuel prices, I am considering switching from fuel-powered vehicles to electric vehicles. | 201 | 12  | 0  | 33 | 0  | 76.85 | 49.2 |
| AET2                                                                | I have already adopted or plan to adopt solar power to reduce my electricity costs.                  | 120 | 100 | 0  | 20 | 6  | 50.46 | 49.2 |
| AET3                                                                | The use of electric vehicles and solar power is a viable solution to the current fuel crisis.        | 180 | 66  | 0  | 0  | 0  | 70.22 | 49.2 |
| <b>Impact of Inflation on Consumer Spending (INF)</b>               |                                                                                                      |     |     |    |    |    |       |      |
| INF1                                                                | Inflation has significantly reduced my purchasing power                                              | 120 | 124 | 2  | 0  | 0  | 59.46 | 49.2 |
| INF2                                                                | The high inflation rate has made it difficult for me to afford essential goods and services.         | 130 | 93  | 0  | 14 | 9  | 57.4  | 49.2 |
| INF3                                                                | The rising cost of goods due to inflation has forced me to cut down on my savings and investments.   | 134 | 112 | 0  | 0  | 0  | 60.66 | 49.2 |
| <b>Consumer Spending Patterns (CSP)</b>                             |                                                                                                      |     |     |    |    |    |       |      |
| CSP1                                                                | Due to increased fuel costs, I have reduced my spending on essential goods and services.             | 190 | 50  | 0  | 6  | 0  | 72.85 | 49.2 |
| CSP2                                                                | My monthly savings have decreased since the fuel subsidy was removed.                                | 183 | 60  | 1  | 2  | 0  | 70.70 | 49.2 |
| CSP3                                                                | I struggle to afford basic necessities due to rising living costs.                                   | 145 | 101 | 0  | 0  | 0  | 61.82 | 49.2 |
| CSP4                                                                | My purchasing power has significantly reduced since fuel subsidy removal.                            | 130 | 111 | 0  | 5  | 0  | 58.55 | 49.2 |

*Source: Field survey, 2025*

### **Descriptive Analysis of FSR, CCM, AET, INF, and CSP**

**Fuel Subsidy Removal (FSR):** Findings show near-unanimous agreement that FSR raised transport costs, prices of essentials, and household expenses, with 100% confirming transport hikes and over 97%

acknowledging higher living costs. Mean responses (49.2) and SDs (99.87–105.1) confirm significant impact, highlighting need for policy support (World Bank, 2023). **Consumer Coping Mechanisms (CCM):** About 96% reduced non-essential spending, 99% shifted to cheaper transport, and 95% revised budgets,



indicating widespread behavioural adjustments to rising costs (NBS, 2024).

**Consumer Perception (CPR):** Public opinion remains divided—41% see FSR as necessary for growth, 29% disagree, and 53% oppose government’s decision. Yet 95% believe negative effects outweigh benefits, underscoring dissatisfaction and demand for mitigating policies (IMF, 2023).

**Alternative Energy & Transport (AET):** Many respondents consider solar power and electric vehicles as alternatives, signaling readiness for sustainable energy shifts, though affordability and infrastructure remain barriers (Harring et al., 2023).

**Inflation Impact (INF):** High inflation eroded purchasing power, curtailed access to essentials, and reduced savings/investments, worsening financial strain (Blanchard, 2021).

**Consumer Spending Patterns (CSP):** Rising fuel costs reduced savings, lowered purchasing power, and forced cutbacks even on essentials, reflecting declining financial stability in affected households (Akpan & Uford, 2024).

## Demographic Analysis of the Respondents

**Table 4.1: Gender Distribution Analysis**

| Gender | Frequency | %     | Valid % | Cumulative % |
|--------|-----------|-------|---------|--------------|
| Male   | 116       | 47.2  | 47.2    | 47.2         |
| Female | 130       | 52.8  | 52.8    | 100.0        |
| Total  | 246       | 100.0 | 100.0   |              |

*Source: Field survey, 2025*

The gender distribution analysis of respondents in Etsako-west local government area shows that 52.8% were female and 47.2% were male, indicating a slightly higher female participation. This suggests that women, who often manage household expenses, are more directly affected by rising costs due to fuel subsidy removal. Women may experience financial strain in budgeting for food, transportation, and healthcare, while men, especially in business and transport sectors,

may face income challenges due to increased operational costs. This highlights the need for gender-sensitive policies, such as transport subsidies for market women and financial support for male-dominated industries. Overall, both genders feel the impact, but women may bear a greater financial burden, necessitating targeted economic interventions to mitigate the effects of subsidy removal.

**Table 4.2: Monthly household income**

*Source: Field survey, 2025*

| Income level        | Frequency | %     | Valid % | Cumulative % |
|---------------------|-----------|-------|---------|--------------|
| Less than ₦50,000   | 141       | 57.3  | 57.3    | 57.3         |
| ₦50,000 - ₦100,000  | 34        | 13.8  | 13.8    | 71.1         |
| ₦101,000 - ₦200,000 | 22        | 8.9   | 8.9     | 80.1         |
| ₦201,000 - ₦500,000 | 27        | 11.0  | 11.0    | 91.1         |
| Above ₦500,000      | 22        | 8.9   | 8.9     | 100.0        |
| Total               | 246       | 100.0 | 100.0   |              |

The analysis of monthly household income in the study indicates that 57.3% of respondents earn less than ₦50,000 per month, showing that the majority of households in Etsako-west local government are in the low-income category. Another 13.8% earn between ₦50,000 and ₦100,000, bringing the total percentage of respondents earning below ₦100,000 to 71.1%. This suggests that a significant portion of the population struggles with financial constraints, especially in light of fuel subsidy removal and rising costs. Only 28.9% of respondents earn above ₦100,000, with 8.9% earning

over ₦500,000. This small percentage of higher-income households suggests that a minority can absorb the economic shocks caused by subsidy removal. Given that most households have low earnings, the impact of fuel subsidy removal is likely severe, leading to reduced purchasing power, increased cost of living, and possible changes in spending patterns. Government interventions such as wage adjustments, price control policies, and social assistance programs may be necessary to support low-income earners.

**Table 4.3: Means of Transportation**

| Means of Transportation  | Freq.      | %            | Valid %      | Cumulative % |
|--------------------------|------------|--------------|--------------|--------------|
| Private Vehicle          | 53         | 21.5         | 21.5         | 21.5         |
| Public Transportation    | 65         | 26.4         | 26.4         | 48.0         |
| Motorbike/Tricycle       | 66         | 26.8         | 26.8         | 74.8         |
| Walking/Cycling          | 62         | 25.2         | 25.2         | 100.0        |
| <b>Total Respondents</b> | <b>246</b> | <b>100.0</b> | <b>100.0</b> |              |

*Source: Field survey, 2025*

The analysis of means of transportation among respondents reveals diverse commuting patterns in Etsako-west local government area. The most commonly used mode of transportation is motorbikes/tricycles, with 66 respondents (26.8%) relying on them. This suggests that these informal transport options play a significant role in mobility, possibly due to affordability and accessibility, especially in areas with poor road infrastructure. Public transportation follows closely, accounting for 26.4% (65 respondents). This highlights the reliance on buses and taxis for daily commuting, which may be influenced by fuel prices and public transport

availability. Walking or cycling is another significant mode, with 62 respondents (25.2%), indicating that a substantial portion of the population either prefers non-motorized transport or has limited access to motorized alternatives. Private vehicle ownership is the least common, with 53 respondents (21.5%) using their own cars. This relatively low figure suggests that the high cost of fuel and vehicle maintenance might be discouraging private car use. The findings align with the economic constraints affecting consumer spending patterns, as rising transportation costs could force individuals to adopt more cost-effective means of travel.

**Table 4.4:**

| Tests of Normality              |           |     |       |              |     |       |
|---------------------------------|-----------|-----|-------|--------------|-----|-------|
| Kolmogorov-Smirnov <sup>a</sup> |           |     |       | Shapiro-Wilk |     |       |
|                                 | Statistic | Df  | Sig.  | Statistic    | Df  | Sig.  |
| CSP1                            | 0.378     | 246 | 0.000 | 0.624        | 246 | 0.000 |
| CSP2                            | 0.403     | 246 | 0.000 | 0.591        | 246 | 0.000 |
| CSP3                            | 0.399     | 246 | 0.000 | 0.581        | 246 | 0.000 |
| CSP4                            | 0.403     | 246 | 0.000 | 0.604        | 246 | 0.000 |

**Source: SPSS 25.0 Data Output**

#### **a. Lilliefors Significance Correction**

All the four CSP variables significantly deviate from normality. This is because all the p-values (Sig.) are less than 0.05, leading to rejection of the null hypothesis for both tests. Therefore, the data is not normally distributed for any of the variables. This

implies that a non-parametric test will be appropriate for the analysis. It is therefore expedient for the researcher to apply ordinal regression which is also called ordinal logistic regression or PLUM in SPSS since it does not require normality of the independent or dependent variables.

**Table 4.5: Test of Parallel Lines<sup>a</sup>**

| Model           | -2Log Likelihood     | Chi-Square          | Df | Sig.  |
|-----------------|----------------------|---------------------|----|-------|
| Null Hypothesis | 365.599              |                     |    |       |
| General         | 287.864 <sup>b</sup> | 77.735 <sup>c</sup> | 40 | 0.000 |

*a Link function: Logit.*

**Source: SPSS 25.0 Data Output**

The p-value is significant (0.000), the parallel lines assumption is violated. This means the effects of

predictors are not constant across categories of CSP.

**Table 4.6: Model Fitting Information**

| Model          | -2Log Likelihood | Chi-Square | Df | Sig.  |
|----------------|------------------|------------|----|-------|
| Intercept only | 504.405          |            |    |       |
| Final          | 365.599          | 138.806    | 5  | 0.000 |

Link function: Logit

Source: SPSS 25.0 Data Output

**Intercept Only -2 Log Likelihood = 504.405**, this is the **baseline model** with no independent variables. It represents how well we can predict the dependent variable using only the average tendency (intercept). A higher -2LL value means poor fit — this model does not explain much. Final Model -2 Log Likelihood = 365.599, this model includes your predictors (independent variables — possibly CSP1 to CSP4). The sharp drop in the -2Loglikelihood value from 504.405 to 365.599 shows that: Adding the predictors has significantly improved the model's explanatory power. Chi-Square = 138.806 with df = 5, Sig. = 0.000. This

tests whether the final model is significantly better than the null model. Since  $p = 0.000$ , this is highly significant. **Interpretation:** There is strong evidence that at least one of your predictors significantly influences the dependent variable. We can reject the null hypothesis that "the predictors have no effect. The ordinal regression model significantly fits the data better than a model with no predictors. This means the independent variables (e.g., CSP1–CSP4) do help explain changes in the dependent variable (Likert-scale based), and the model is statistically valid for interpretation.

**Table 4.7: Goodness-of-Fit**

|          | Chi-Square | Df  | Sig.  |
|----------|------------|-----|-------|
| Pearson  | 937.117    | 418 | 0.000 |
| Deviance | 305.182    | 418 | 1.000 |

Link function: Logit

Source: SPSS 25.0 Data Output

**Pearson Chi-Square:** Chi-Square = 937.117, df = 418, Sig. = 0.000. This result tests whether the observed responses match what the model predicts. Because  $p = 0.000$  (less than 0.05): It suggests a poor fit — that is, the model's predictions don't perfectly match the data.

**Deviance Chi-Square:** Chi-Square = 305.182, df = 418, Sig. = 1.000. This is a better indicator of model fit in

ordinal regression,  $p = 1.000$  (greater than 0.05), this means the model fits the data well — the predicted responses are consistent with what was actually observed. This is the result that should be trusted when there is a conflict. Although the Pearson test flags a problem, the Deviance test confirms that the model is a good fit for the data.

**Table 4.8: Pseudo R-Square**

|               |       |
|---------------|-------|
| Cox and Shell | 0.431 |
| Nagelkerke    | 0.448 |
| McFadden      | 0.171 |

Link function: Logit

Source: SPSS 25.0 Data Output

Cox and Snell  $R^2 = 0.431$  Suggests the model explains 43.1% of the variation in the dependent variable. Nagelkerke  $R^2 = 0.448$ , this adjusts Cox & Snell so that the maximum value can be 1.0. The model explains about 44.8% of the variation in

the dependent variable (CSP), which is moderately strong. McFadden  $R^2 = 0.171$  suggests acceptable model performance.

**Table 4.9: Parameter Estimate**

|                  |          | <b>Estimate</b> | <b>Standard Error</b> | <b>Wald</b> | <b>Df</b> | <b>Sig</b> |
|------------------|----------|-----------------|-----------------------|-------------|-----------|------------|
| <b>Threshold</b> | CSP=2.00 | 13.923          | 3.842                 | 13.131      | 1         | 0.000      |
|                  | CSP=2.75 | 14.430          | 3.844                 | 14.092      | 1         | 0.000      |
|                  | CSP=3,25 | 15.418          | 3.847                 | 16.066      | 1         | 0.000      |
|                  | CSP=3.50 | 16.201          | 3.850                 | 17.705      | 1         | 0.000      |
|                  | CSP=3.75 | 16.596          | 3.854                 | 18.546      | 1         | 0.000      |
|                  | CSP=4.00 | 18.551          | 3,891                 | 22.731      | 1         | 0.000      |
|                  | CSP=4,25 | 19.326          | 3,909                 | 24.442      | 1         | 0.000      |
|                  | CSP=4.50 | 19.573          | 3,914                 | 25.004      | 1         | 0.000      |
|                  | CSP=4.75 | 19.958          | 3.921                 | 25.903      | 1         | 0.000      |
|                  |          |                 |                       |             |           |            |
| <b>Location</b>  | FSR      | 0.613           | 0.583                 | 1.103       | 1         | 0.294      |
|                  | CCM      | -0.224          | 0.402                 | 0.309       | 1         | 0.578      |
|                  | CPR      | 0.258           | 0.905                 | 0.081       | 1         | 0.776      |
|                  | AET      | 2.272           | 0.423                 | 28.868      | 1         | 0.000      |
|                  | INF      | 1.209           | 0.257                 | 22.138      | 1         | 0.000      |

*Source: SPSS 25.0 Data Output*

Based on the table above, the key predictors shows that AET (statistically significant): Consumers shifting to alternative energy/transport strongly influences spending pattern. INF (statistically significant): Inflation has a powerful, direct influence on how consumers adjust their spending. Other variables (FSR, CCM, CPR) are statistically insignificant in this model context.

Fuel Subsidy Removal's Impact is Indirect, Not Direct. While fuel subsidy removal (FSR) is a critical economic policy change, the results indicate that its effect on consumer spending is not direct but rather manifests through other factors. The increase in fuel prices caused by subsidy removal has forced consumers to adapt in specific ways, primarily through changes in energy consumption and transportation choices (AET) and adjustments to inflation-induced price increases (INF). Shift to Alternative Energy and Transportation (AET) Captures Behavioural Adjustments. Rising fuel costs have compelled consumers to modify their spending

patterns by seeking alternatives such as public transportation, carpooling, or renewable energy sources for household and business use. This aligns with the study's objective of identifying how consumers adjust their spending priorities in response to policy-induced economic shocks. The removal of fuel subsidies has contributed to higher inflation, leading to an increase in the prices of goods, services, and overall cost of living. Since inflation reduces purchasing power, consumers are forced to reallocate spending, impacting their consumption habits across various sectors. The statistical significance of INF confirms that rising costs are a dominant factor shaping consumer spending decisions in the post-subsidy period.

### **Discussion of Findings**

The findings of this study provide empirical support for the arguments and conclusions drawn by prior researchers regarding the impact of fuel subsidy removal on consumer spending patterns.

FSR (Fuel Subsidy Removal), CCM (Consumer Coping Mechanisms), and CPR (Consumer Perception of Fuel Subsidy Removal) from the study, were not statistically significant in influencing consumer spending patterns (CSP). Only AET and INF are the strongest and most reliable predictors, improving the explanatory power and robustness. The significant p-values (0.000) for AET and INF confirm that these variables have a strong, and have systematic effect on Consumer spending patterns (CSP).

*Alternative Energy & Transportation Shift (AET) and Consumer Spending Patterns.* The study reveals a strong positive relationship between shifts to alternative energy sources and transportation (AET) and consumer spending patterns. This finding is consistent with the work of Harring et al. (2023), who highlighted that socio-economic factors influence attitudes towards subsidy removal during energy transitions. Similarly, Lin and Kuang (2020) demonstrated that energy subsidy removal in China led to increased energy costs, forcing low-income households to adjust consumption behaviours. The significant effect of AET in the revised model underscores how Nigerian households and businesses are altering their spending priorities by adopting alternative energy sources e.g. fuel powered generators to solar powered electricity, fuel powered vehicles to Compressed Natural Gas (CNG) powered vehicles, and modifying transportation habits in response to rising fuel prices.

#### *Impact of Inflation (INF) on Consumer Spending Patterns*

The study also establishes that inflation has a statistically significant impact on consumer spending patterns. This aligns with Ogboru and Akinyotu (2024), who found that rising fuel prices reduce household purchasing power, leading to lower savings, limited access to

essential services, and increased poverty, particularly among vulnerable groups. Similarly, Akpan and Uford (2024) confirmed that inflationary pressures stemming from fuel price increases elevate the costs of consumer goods and services, affecting overall spending behaviour. The strong relationship observed in this study between inflation and consumer spending suggests that as prices rise, consumers are forced to prioritize essential goods while cutting back on discretionary expenditures, which mirrors findings in previous research.

#### **Broader Economic and Social Implications**

The study's findings reinforce Obinna (2020), who demonstrated that fuel subsidy removal in Maiduguri negatively impacted household livelihoods, with family size, dependency ratios, and education levels influencing the extent of the impact. The current study corroborates these observations by showing that inflationary pressures and shifts in energy use significantly reshape household financial decisions. Furthermore, Abd Obaida et al. (2020) explored how subsidy removal affects tax compliance behaviour among SMEs, which aligns with the present study's suggestion that businesses are experiencing operational cost increases, leading to changes in their financial planning and expenditure patterns. The findings of this study are in line with existing literature, reinforcing the argument that fuel subsidy removal significantly alters consumer spending behaviour through inflationary pressures and shifts in energy and transportation usage. These results confirm that Nigerian households and businesses are adapting by prioritizing essential expenditures, seeking alternative energy sources, and making adjustments to transportation choices to mitigate rising costs.

## Conclusions and Recommendations

### Conclusions

This study examined the impact of fuel subsidy removal on consumer spending patterns in Etsako-west local government of Edo state, Nigeria. The findings revealed that AET and INF significantly influence consumer spending behaviour, confirming previous studies that highlighted the economic strain caused by fuel price fluctuations and inflationary pressures. The results indicate that rising fuel costs drive consumers to seek alternative energy sources and modify their transportation choices, which in turn affects overall expenditure patterns. Furthermore, inflation exacerbates the financial burden on consumers, leading to reduced discretionary spending and altered consumption behaviour.

The study thus aligns with existing literature, which underscores the adverse effects of subsidy removal on low-income households, small businesses, and economic stability. The revised model effectively captures the essential drivers of consumer spending shifts in response to subsidy removal, emphasizing the need for targeted economic policies that mitigate these adverse effects.

### Recommendations

Based on the study's findings, the following recommendations are hereby proposed:

1. *Government Policy Intervention:* Policymakers should implement cushioning mechanisms such as targeted subsidies for essential commodities, transportation support, and incentives for alternative energy adoption to reduce the economic burden on consumers.
2. *Investment in Alternative Energy Sources:* The government and private sector should invest in affordable and sustainable energy solutions, such as solar and compressed natural gas (CNG), to provide cost-effective alternatives to fuel-dependent transportation and household energy needs.

3. *Monetary and Fiscal Policy Adjustments:* Inflation control measures, such as stabilizing the exchange rate and reducing import duties on essential goods, should be prioritized to minimize inflationary pressures on consumer spending.

4. *Consumer Awareness and Adaptation Strategies:* Public awareness campaigns should be initiated to educate consumers on cost-saving measures, energy-efficient alternatives, and strategic financial planning in response to changing economic conditions.

5. *Support for Small and Medium Enterprises (SMEs):* Special financial aid programs, tax incentives, and low-interest credit facilities should be provided to SMEs to help them cope with rising operational costs due to subsidy removal.

6. *Further Research:* Additional studies should explore the long-term implications of subsidy removal on economic growth, household welfare, and business sustainability, considering regional variations and evolving policy landscapes.

These recommendations, if implemented, will help mitigate the adverse effects of fuel subsidy removal, promote economic stability, and support consumer resilience in Nigeria's dynamic economic environment.

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## Fuel Subsidy Removal and Cost of Food Production in Akoko-Edo Local Government Area of Edo State.

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### Abstract

*Following the policy change in 2023, this study looks at how the elimination of fuel subsidies affected the cost of food production in the Akoko-Edo Local Government Area in Edo State, Nigeria. Data were gathered via questionnaires utilizing a survey study methodology with a sample of 369 respondents chosen using Taro Yamane's formula. Descriptive statistics and Pearson's correlation coefficient were used for analysis. Removing subsidies is strongly positively correlated with higher food production costs, especially for inputs like seeds and fertilizers, and worse agricultural output ( $r = +0.78$  to  $+0.90$ ,  $p < 0.001$ ). The report emphasizes Akoko-Edo's susceptibility to food insecurity because of its dependence on small-scale agricultural production and inadequate infrastructure. To reduce expenses, specific financial assistance for farmers and investments in renewable energy are suggested. This study highlights the need for initiatives to improve food security in the face of rising fuel prices and offers localized insights to Edo State's agricultural strategy.*

**Key words:** Fuel Subsidy, Food Production, Food Security.

### Introduction

Essentially, fuel subsidies are governmental interventions that lower the price of fossil fuels for end-users, allowing them to purchase these resources at a rate that is below the market value (Ovaga & Okechukwu, 2022). It Helps mitigate the impact of volatile global oil prices on domestic economies, stabilizing energy costs, which can have wide-ranging effects on various sectors, including agriculture.

Globally the financial strain of subsidy sustenance is expected to be \$1trillion in 2022

which towers above projected global aid of \$204 billion same year exceeding government revenue of many developing countries and this underscores the sustainability of subsidies in long term (International Energy Agency 2022)

In Nigeria, the history of fuel subsidies dates back to the 1970s, following the oil price shock of 1973. Although partially removed in 1986 the most notable removal occurred in 2012 which led to widespread protests and social unrest forcing its reinstatement and by 2022 the fiscal burden had surged to ₦4 trillion representing

23% of the national budget. increasing to ₦6 trillion in the first quarter of 2023, reflecting a growing financial burden (National Bureau of Statistics, 2024).

There is a global focus on the removal of subsidy for reallocation of funds to other sectors (Couharde & Mouhoud, 2020; Ozili & Obiora 2023). In Nigeria, the inability of the government to sustain the high cost of subsidies has intensified debates about their removal. On one hand, some research suggests that eliminating fuel subsidies could lead to environmental benefits, such as reduced carbon emissions and fiscal relief (Omitogun et al., 2021; Adekunle & Oseni, 2021; Afriyie et al., 2020). On the other hand removing subsidies might lead to increased inflation and economic instability, as higher fuel prices could drive up costs across various sectors (Omotosho, 2020; McCulloch et al., 2021).

Given the close connection between energy prices and agricultural practices, the elimination of fuel subsidies may have a significant effect on food production. Fuel, for example, is necessary to run farm equipment, move cargo, and run storage facilities. Higher fuel prices have been shown to raise farmers' operating expenses which could lead to worsening food insecurity (Meyer & von Cramon-Taubadel, 2004).

Because of its mountainous surroundings and reliance on smallholder farming, Akoko-Edo Local Government Area is particularly susceptible to price increases in fuel for mechanized agriculture and transportation. As a result, the loss of fuel subsidies has a particular effect on the cost of food production in this area. This study closes this knowledge gap by examining how the loss of fuel subsidies affected the costs of food production in Akoko-Edo. It also offers localized insights to enhance food security and guide Edo State's agricultural policy.

#### **Statement of the Problem.**

With Akoko-Edo Local Government posited in a geographical location that supports agricultural production, the people living in this area possess agriculture as a major economic base of the society. In Akoko-Edo Local Government which is a local government whose inhabitants are majorly farmers with agriculture playing a major economic role in the local government area, the food supply system was efficient in the consistent production and supply of food, ensuring production and distribution of food products in the region leading to a competitive market which creates a good level of affordability and attaining food security in the region. Contrastingly, the introduction of the policy eliminating fuel subsidies in 2023 has had a profound effect on economic and social activities in Akoko-Edo Local Government Area of Edo State, Nigeria, as it is observable that there have been increase in the price of fuel which has a bearing on other aspects of the society in the region with food security just as the International Food Policy Research Institute (2024) recorded that the increment in cost of fuel has also led to a decline in agricultural productivity, as farmers are unable to afford the increased costs of fuel and other inputs . The People have suffered greatly as a result of the elimination of gasoline subsidies because of the vitality of gasoline to agriculture which facilitates food security amongst the population of the region. As such the research delved into how the elimination of fuel subsidies affected the production of food in the Akoko-Edo Local Government Area of Edo State, Nigeria in 2024 in a bid to proffering recommendations that would help salvage the situation in Akoko-Edo Local Government Area

#### **Empirical Review**

Umar and Umar (2013) studied the "Impact of Fuel Subsidy Removal on Agricultural Production among Smallholder Farmers in Niger State, Nigeria" They looked at how the removal

of gasoline subsidies by the Nigerian government will affect smallholder farmers, who are essential to the nation's agriculture industry. In order to choose 120 smallholder farmers from two local government areas (LGAs) recognized for their contributions to agriculture, the research uses a multi-stage sampling technique. Structured interviews, focus groups, and in-depth interviews were used as data collection techniques. The study focused on the socioeconomic traits of farmers, the effect of transportation costs on the availability of agricultural products, and the marketing implications of the removal of fuel subsidies. Descriptive statistics and logit regression methods were used in the analysis to evaluate the connection between agricultural productivity and transportation expenses.

The results show that young farmers, aged 20 to 29, make up the majority of responders (64.2%), suggesting a youth-dominated agro workforce. Increased transportation costs as a result of the elimination of fuel subsidies have a negative impact on the accessibility and sale of agricultural products. Due to these growing costs, farmers reported major difficulties reaching markets, which hindered their capacity to sell goods profitably and decreased their income. The report also emphasizes the socioeconomic ramifications of eliminating subsidies, pointing out that even though numerous farmers have families and have modest households, the adverse consequences of the policy may limit their ability to expand and become more productive. There are calls for immediate intervention since the government is not doing enough to alleviate these detrimental effects.

The report makes a number of suggestions to help smallholder farmers overcome their difficulties. In order to lessen the hardships brought on by the elimination of subsidies, it highlights the necessity of reviewing subsidy policies and putting in place well-structured palliatives. In order to improve agricultural

products' access to markets, the research also supports infrastructure improvements and transportation cost subsidies. To make sure that help reaches individuals in need, a variety of parties must be included in the distribution process. In the end, the study emphasizes how crucial it is to carry out in-depth research on the ramifications of policies before to their implementation in order to prevent unjustly harming the populace, especially in the agricultural industry, which is crucial for Nigeria's supply of food and economic stability. Akinyemi et al. (2017) investigated the performance of Nigeria's agriculture sector and the modeling of the elimination of fuel subsidies utilizing the dynamic computational general equilibrium technique. They came to the conclusion that the agricultural sector in Nigeria would be affected by the elimination of fuel subsidies in a number of ways. However, the agricultural sector would fare better in a scenario where the subsidies are removed completely, as most of the major macroeconomic variables—capital, imports, exports, and output—will increase. Then, despite the fact that there will be temporary price hikes, it is suggested that doing away with the fuel subsidy altogether will enhance the productivity and performance of the agricultural industry. The agricultural sector's performance and outputs are therefore advised to be strengthened by a one-time elimination of fuel subsidies, even if this will cause short-term price increases due to the costly nature of production, inputs, and transportation. When money is set aside for technological and infrastructure advancement, the industry would eventually profit, it would increase Nigeria's growth and food security.

Udoh et al (2023) focuses on the impact of fuel subsidy removal on the living standards of rural communities in the oil-producing Niger-Delta region, particularly in Akwa Ibom State, Nigeria. The research emphasizes the negative impacts of eliminating subsidies on these villages, whose

residents mainly rely on petroleum goods due to inconsistent electricity, using ideas of community growth and empowerment. The results demonstrate that increases in fuel prices have dramatically increased living expenses, especially for vulnerable rural people already confronting destitution and inadequate infrastructure. The elimination of fuel subsidies has increased the cost of necessities like food, transport, and energy, making the region's economic problems worse. As costs rise, communities that depend heavily on small-scale industries and fisheries have suffered a severe reduction in economic activity. The study points out that even while fuel subsidies were riddled with inefficiencies and corruption, communities suffer more when they are eliminated without sufficient safety nets or substitutes for employment. The report recommends that the government allocate the savings from the elimination of subsidies in a transparent manner to infrastructure, healthcare, and education, among other vital areas. Targeted initiatives are also advised in order to lessen the strain on the most disadvantaged groups. In order to prevent economic disparities from getting worse, the research highlights the necessity of policies that strike a balance between fiscal reforms and social protections.

Raifu and Afolabi (2024) emphasized the inflationary consequences of premium motor spirit price (PMS) and projected how much PMS Price will contribute to inflation in Nigeria. Demonstrating that while, there is a small variation in the inflationary impact in both urban and rural regions, premium motor spirit price primarily controls the path of inflation in Nigeria. The current gasoline subsidy has a long-lasting inflationary effect, which emphasizes the necessity to implement methods to lessen Nigeria's rising inflationary pressures. The Nigerian government ought to specifically redeploy the money saved from the elimination of subsidies toward modernizing the nation's

refineries. Before renovating the other refineries, the nation should first make sure that the one with the lowest cost is completely operational. Moreover, specific financial transfers to...Before renovating the other refineries, the nation should first make ensure that the refinery with the lowest cost is completely operational. In order to offset inflationary pressures and lessen the immediate impact of an increase in oil prices on living expenses, targeted financial transfers should be made to areas that are particularly vulnerable, especially those in rural communities. Adeoye (2024) looks into how Nigerian food prices are affected by the elimination of gasoline subsidies. The study investigates the relationship between gasoline and food prices using econometric analysis. The study's primary conclusions are: Food costs rise significantly as a result of the elimination of fuel subsidies; this increase is greater for staple commodities such rice, beans, and maize. The elimination of gasoline subsidies has a greater effect on food prices in cities than in rural areas. According to the study, a ten percent rise in fuel costs causes food prices to rise by 2.5%. Food security could decline as a result of the elimination of fuel subsidies, especially for low-income households. According to the study's findings, the elimination of fuel subsidies significantly affects food costs across the nation and may cause food insecurity, especially for disadvantaged groups. The author advises authorities to take steps to lessen the possible impact of eliminating fuel subsidies on food costs and to ensure food security. In summary, the research offers significant understanding of the correlation between gasoline and food costs in Nigeria and emphasizes the necessity for policymakers to take into account the possible consequences of eliminating fuel subsidies on food security.

### **Theoretical Review**

This paper adopts the Price Transmission Theory (PTT) which is a crucial concept in

understanding how changes in input prices affect output prices and ultimately food supply. The theory is built on the concept of price transmission, which refers to the process by which changes in prices are transmitted from one market to another. Price Transmission Theory has been extensively studied and developed by various economists and researchers, and its applications are diverse, ranging from agricultural markets to international trade. One of the profound contributors to Price Transmission Theory is Alfred Marshall, who introduced the concept of price transmission in his book "Principles of Economics" (1920). Marshall explained how changes in input prices, such as labor and capital, affect output prices and ultimately influence the supply of goods. He argued that price transmission is a crucial mechanism that enables markets to adjust to changes in supply and demand.

Another significant contributor to Price Transmission Theory is John Maynard Keynes, who developed the idea of price transmission in his book "The General Theory of Employment, Interest and Money" (1936). Keynes emphasized the importance of price transmission in understanding how changes in aggregate demand affect output and employment. He argued that price transmission is a key mechanism that enables markets to adjust to changes in aggregate demand. Paul Samuelson, in his book "Economics: An Introductory Analysis" (1952), further developed the theory of price transmission. Samuelson explained how price transmission works in different markets, including agricultural markets, and how it affects food supply. He argued that price transmission is a crucial mechanism that enables markets to adjust to changes in supply and demand. In recent years, Price Transmission Theory has been applied to various areas, including agricultural markets, international trade, and food security.

The application of Price Transmission Theory to the removal of fuel subsidies in Nigeria is crucial in understanding the potential effect on food supply and food security. Nigeria is a significant producer and consumer of food, and policies that result in changes in input prices, such as fuel prices, can significantly affect food prices and ultimately food security. The removal of fuel subsidy in Nigeria as a government policy action, will likely lead to increased transportation costs and attendant cost in price of food product affecting food security and supply. Price Transmission Theory examines how government policy resulting in changes of input prices such as fuel affect output prices food prices and ultimately food supply. The theory is built on the concept of price transmission, which refers to the process by which changes in prices are transmitted from one market to another.

### Methodology

this paper adopts the survey research design to investigate the impact of fuel subsidy removal on food production. a design noted for its cost-effectiveness and simplicity (Obaze & Onosu, 2009). The target population is 371,942 residents of Akoko-Edo Local Government Area, as reported by the Edo State Atlas (2022), which includes business men and women, farmers, students, professionals, and other occupational groups which are all affected by food production and supply chain

To ensure manageability a sample size of approximately 400 was determined using the Taro Yamane's Formula with 5% margin of error to ensure statistical representativeness (Yamane 1967) The Formula is given as:

$$n = \frac{N}{1 + N(e^2)}$$

With n beign the sample size, N being the population size (371942) and e, the margin of error (0.05) which resulted to

$$n = \frac{371,942}{1 + 371,942(0.05^2)} \approx 400$$

Simple random sampling was used to select respondents, ensuring that every individual had an equal chance of being included and enhancing generalizability within the study area (Obaze & Onosu, 2009). Table 1 shows that a wide range of perspectives on the expenses of food production were represented in the sample, including those of farmers (28.45%), transporters (8.40%), businesses (20.59%), and students (19.78%).

Data was collected using a standardized questionnaire designed to assess how the cost of food production would change if fuel subsidies were removed. The questionnaire was divided into two sections: The biodata, such as gender, length of residency, and occupation, a 5-point Likert scale (Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, Strongly Disagree = 1) was used to gauge opinions regarding cost increases in food production, production inputs (such as seeds and fertilizers), production methods, and energy sources. The questionnaire was previously tested with 20 respondents who were not incorporated in the sample to ensure maximum clarity and reliability. Good internal consistency is shown by its Cronbach's alpha of 0.82.

Data collection was conducted in-person by research assistants, ensuring high-quality data and notable response rates. A total of 369 valid answers representing 92.25% of the total questionnaires distributed, were looked at. Descriptive statistics (frequencies and percentages) were used to produce the biodata and Likert scale responses, as indicated in Tables 1 and 2. By using Pearson's correlation coefficient to analyze the relationships between the removal of fuel subsidies and variables such as food production costs, production inputs, and levels of food production, the hypothesis  $H_0$ : The removal of fuel subsidies has no significant effect on food production in Akoko-Edo L.G.A.) was tested. The analysis was conducted using SPSS version 23, and the significance threshold was set at  $p < 0.05$ .

#### Data Collection And Analysis

For the purpose of this study, data was collected to study the Nexus between the removal of fuel subsidy and food production and also test the hypothesis as stated below in gaining clarity on the subject matter:

$H_0$  the removal of fuel subsidy has no significant effect on food production in Akoko-Edo L.G.A.

$H_1$  the removal of fuel subsidy has significant effect on food production in Akoko-Edo L.G.A

**Table1: Bio Data Presentation.**

|                                        | ITEM   | FREQUENCY | PERCENTAGE |
|----------------------------------------|--------|-----------|------------|
| Gender of Respondents                  | Male   | 204       | 55.28%     |
|                                        | Female | 165       | 44.71%     |
|                                        | Total  | 369       | 100%       |
| How Long Have You Resided in Akoko-Edo | 2years | 0         | 0%         |
|                                        | 3years | 5         | 1.35%      |

|                           |                  |     |        |
|---------------------------|------------------|-----|--------|
|                           | 4years           | 20  | 5.42%  |
|                           | 5years and above | 344 | 93.22% |
|                           | Total            | 369 | 100%   |
| Occupation of Respondents | traders          | 76  | 20.59  |
|                           | Contractor       | 26  | 7.04   |
|                           | Engineer         | 6   | 1.62   |
|                           | Farmer           | 105 | 28.45  |
|                           | Self employed    | 42  | 11.38  |
|                           | Student          | 73  | 19.78  |
|                           | Teacher          | 6   | 1.62   |
|                           | Transporter      | 31  | 8.40   |
|                           | Unemployed       | 4   | 1.08   |
|                           | Total            | 369 | 100%   |

Source: field survey by researcher (2024).

The table presents bio data from respondents, revealing that 55.28% were male and 44.71% were female. The respondents' length of residency and occupation were also recorded. 0% lived in the area for 2 years, while 1.35% lived for 3 years, 20 for 4 years, and 93.22% lived for over 5 years. This indicates that respondents lived beyond the research period, providing valid information.

Occupations were also analyzed. 29.59% of respondents were into business, 7.04% were contractors, 1.62% were engineers, 28.45 were

farmers, 11.38% were self-employed, 19.78% were students, 1.62% were teachers, 8.40% were transporters, and 1.08% were unemployed. These responses reflect the entire society, broadening the perspectives covered by the responses. High-level responses were found from farmers, transporters, and business people who are stakeholders in the food production and supply chain. Overall, the data provides a comprehensive view of the respondents' experiences and perspectives.

## Table2: Cost of Food Production in Akoko-Edo

Respondents' Responses on the Impact of Fuel Subsidy Removal on the Cost of Food Production in Akoko-Edo.

| S/N | Items                                                                          | SA (%)     | A (%)       | UD (%)     | D (%) | SD (%) |
|-----|--------------------------------------------------------------------------------|------------|-------------|------------|-------|--------|
| 1   | Removal of fuel subsidy has increased the cost of food production in Akoko-Edo | 37(10.2%)  | 244(66.12%) | 88(23.84%) | 0(0%) | 0(0%)  |
| 2   | The removal of fuel subsidy has led to the increase in cost                    | 81(21.95%) | 219(59.34%) | 69(18.69)  | 0(0%) | 0(0%)  |



|   |                                                                                                                                                               |             |             |           |           |       |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-----------|-----------|-------|
|   | of food production inputs such as seeds, fertilizers, pesticides etc in Akoko-Edo.                                                                            |             |             |           |           |       |
| 3 | There has been changes in food production methods in Akoko-Edo, as result of the increased cost associated with production due to the removal of fuel subsidy | 102(27.64%) | 258(69.91%) | 9(2.43%)  | 0(0%)     | 0(0%) |
| 4 | Do you agree that Fuel subsidy removal has negatively affected the energy sources required for food production in Akoko-Edo                                   | 84(22.76%)  | 249(67.47%) | 26(7.04%) | 10(0.27%) | 0(0%) |

Source: field survey by researcher (2024)

The study reveals that the removal of fuel subsidies has significantly increased the cost of food production. The majority of respondents, 10.02 percent, strongly agree that the removal of fuel subsidies has increased the cost of inputs such as seeds and fertilizers. The remaining respondents, 23.84 percent, are undecided on the issue.

The removal of fuel subsidies has also led to an increase in the cost of production inputs. 81 respondents, 21.95 percent, agree that the removal of fuel subsidies has led to an increase in production inputs. 59.34 percent of respondents agree that the removal of fuel

subsidies has led to an increase in production inputs.

The removal of fuel subsidies has also resulted in a reduction in food production. 69.91 percent of respondents agree that there has been a reduction in food production due to increased costs after the subsidy removal. 2.43% of respondents are undecided on the issue.

Fourthly, 84 respondents, 22.76 percent, strongly agree that the removal of fuel subsidies has affected the ability of residents to produce food. 67.4 percent of respondents agree that the removal of fuel subsidies has affected food production.

Summarily, the majority of respondents agree that the removal of fuel subsidy has increased the cost of food production by leading to increased cost of inputs such as seeds and fertilizers. A significant number of respondents also reported that food production in the area has decreased due to increased costs.

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### Hypothesis Testing

Null Hypothesis ( $H_0$ ): the removal of fuel subsidy has no significant effect on food production in Akoko-Edo L.G.A.

Alternative Hypothesis ( $H_1$ ): the removal of fuel subsidy has significant effect on food production in Akoko-Edo L.G.A

To test this hypothesis, we performed a correlation analysis on the responses related to the cost of food production and the perceived effect on food production in Akoko-Edo L.G.A

**Table2: Correlation Analysis**

| Variables                                         | Correlation Coefficient (r) | p-value |
|---------------------------------------------------|-----------------------------|---------|
| Subsidy removal and cost of food production       | +0.87                       | <0.001  |
| Subsidy removal and increase in production inputs | +0.81                       | <0.001  |
| Reduction in food production due to cost          | +0.90                       | <0.001  |
| Ability to produce food                           | +0.78                       | <0.001  |

Source: field survey by researcher (2024)

Interpretation: The correlation coefficients indicate a strong positive relationship between fuel subsidy removal and the cost of food production, as well as the overall effect on food production in Akoko-Edo. All examined correlations were statistically significant with a p-value <0.001 which enables us to reject the null hypothesis. Thus the results affirmed that fuel subsidy removal significantly increases food production cost and negatively impacts food production levels in Akoko-Edo.

### Discussion of Findings

Subsequently at this point the study discusses the findings from the data that has been analyzed and hypotheses tested and this is as follows:

The removal of the fuel subsidy has led to a substantial increase in the cost of food production in Akoko-Edo, which means that there is increased costs of production, inputs (such as seeds and fertilizers), and fuel have negatively affected food production levels in the region. And this is consistent with the position of various other studies such as Oyinlola & Yusuf (2015) which stated that the removal of fuel subsidies has led to a significant increase in the cost of fuel, which has in turn increased the cost of production for farmers. Decreased irrigation: Fuel subsidies elimination has made it difficult for farmers to power irrigation systems, leading to reduced crop yields also in same vein FAO, (2020) stated that The increased cost of fuel has made it difficult for farmers to use mechanized farming techniques, leading to reduced productivity and Adebayo & Ojo (2020) made it known that Fuel subsidies elimination has led to higher transportation costs, making it more expensive for farmers to

transport their produce to markets also The increased cost of fuel has made it difficult for farmers to transport fertilizers to their farms, leading to reduced fertilizer use

### Summary, Conclusion.

This study provides a novel analysis of how food production in the predominantly rural Akoko-Edo Local Government Area of Edo State is affected by the removal of fuel subsidies. In contrast to more general studies that focus on national or regional consequences (e.g., Udoh et al., 2023, on Akwa Ibom; Akinyemi et al., 2017, on Nigeria), this study highlights Akoko-Edo's specific problems, such as its dependency on smallholder farmers (28.45% of respondents) and its lack of infrastructure for mechanized farming. Strong correlations ( $r = +0.78$  to  $+0.90$ ,  $p < 0.001$ ) between greater production costs and the elimination of subsidies demonstrate how Akoko-Edo's mountainous terrain raises fuel and transportation costs, limiting the market access of staple commodities like cassava and yam.

These findings contribute to Edo State's policy debate and mitigate the impact of subsidy removal by emphasizing the necessity for targeted interventions, such as fuel subsidies for farmers or investments in rural roads. Unlike oil-producing regions like Akwa Ibom, where petroleum availability may buffer subsidy effects, Akoko-Edo's non-oil-producing status enhances economic vulnerabilities (Udoh et al., 2023). Thus, this study informs Edo State's agricultural plan, which supports regional systems for support to sustain farmers' livelihoods and food security in Akoko-Edo.

conclusively, The study clearly demonstrate that the removal of fuel subsidies has had a significant negative effect on food production in Akoko-Edo Local Government Area. The findings align with the broader literature, and theoretical explanations which suggests that the removal of fuel subsidy leads to fuel price increase typically lead to higher cost of agricultural mechanization and other input costs. the results from the correlation analysis reveal that; Food production has been severely impacted by the increased cost of inputs such as seeds, fertilizers, and fuel for farm equipment which is as a result of the removal of fuel subsidy and This aligns with previous studies that show how increased fuel prices lead to reduced agricultural productivity (IFPRI, 2024).

### Recommendation

Haven Observed the impact of fuel subsidy removal on food production it is recommended that Smallholder farmers in Akoko-Edo should be provided with financial and technical support to help them cope with the increased cost of production. Government both at the state and local level, and non-governmental organizations can provide subsidies, grants, or low-interest loans to farmers to purchase essential inputs and equipment.

Also In the long term, the government should explore sustainable energy alternatives such as renewable energy solutions to reduce the country's dependence on fuel. This will help stabilize fuel prices and reduce the volatility of production costs.

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## GIG Economy: A Paradigm Shift in Micro-Entrepreneurship, Implications for Growth of Small & Medium Scale Enterprises in Delta State, Nigeria

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### Abstract

*This study examines the impact of gig economy on business growth of micro, small and medium-scale enterprises in Delta State, Nigeria. Gig economy, with specific focus on workforce composition (WC), talent sourcing and management (TSM), digital platforms (DP), and task and project design (TPD), and their impact on business growth (BG) among micro, small and medium-scale enterprises in Delta State, Nigeria. Using quantitative research methods, responses from the respondents were collected with the aid of five (5) likert scale questionnaire. A total of three hundred and sixty-three (363) questionnaires were administered to owners and managers of micro, small and medium enterprises in Delta State, Nigeria. However, two hundred and ninety-nine (299) were retrieved and properly filled while 64 (17.63%) were not properly filled. The useable questionnaire represents 82.37 percent of the total questionnaire administered, which shows that two hundred and ninety-nine (299) respondents is sufficient for the study. The research questions were analyzed with the aid of descriptive statistics and correlation matrix. The hypothesized relationships between variables of the study were validated using the multiple regression statistical tools with the aid of SPSS version 23. Findings revealed that workforce composition (WC), talent sourcing and management (TSM), digital platforms (DP), and task and project design (TPD) all significantly influence business growth (BG), with TPD having the most substantial effect, contributing a 38.4% increase in BG for every 1% improvement. WC, although positively correlated, exhibits a relatively lower impact compared to other variables, contributing 2.4% to Business Growth (BG). TSM and DP show substantial positive effects, with increases of 25.8% and 4.2% respectively for each percentage improvement. In conclusion, the gig economy offers immense potential for driving the growth of micro, small and medium enterprises in Delta State, Nigeria. The study recommends that enterprises should adopt inclusive recruitment and training practices to build a diverse and capable workforce. Businesses should prioritize strategies for sourcing, retaining, and developing skilled talent to enhance organizational efficiency and competitiveness. This study contributes to the understanding of gig economy dynamics in the Nigerian micro, small and medium enterprises' sector.*

### Introduction

The gig economy, characterized by short-term, flexible, and on-demand work engagements facilitated primarily through digital platforms, has emerged as a transformative force in the global labor market. This paradigm shift is underpinned by the interplay of workforce composition, talent sourcing and management, digital platforms, and task and project design, all of which have implications for business growth, particularly for small and medium-scale enterprises (SMEs) and other forms of micro

enterprises. In the context of Delta State, Nigeria, the adoption and integration of gig economy frameworks present unique opportunities and challenges, necessitating an in-depth exploration of the nexus between these factors.

Workforce composition in the gig economy is distinguished by its heterogeneity, encompassing freelancers, independent contractors, and part-time workers who contribute to various industries. This evolving composition is reshaping traditional employment patterns, with implications for micro

enterprises and SMEs, which often lack the resources to maintain extensive full-time staff. The flexibility offered by gig workers allows SMEs to scale operations efficiently, aligning labor costs with demand fluctuations. Studies have indicated that SMEs leveraging gig workers can enhance operational efficiency and adapt quickly to market dynamics (Kalleberg & Dunn, 2020; Wood et al., 2021). However, the absence of regulatory frameworks in many regions, including Nigeria, poses challenges related to worker rights and benefits, creating a precarious balance between cost-efficiency and ethical labor practices (Stewart & Stanford, 2021).

Talent sourcing and management have undergone significant transformation in the gig economy. Digital platforms serve as intermediaries, connecting SMEs with a global pool of skilled professionals. These platforms, such as Upwork and Fiverr, provide SMEs in Delta State with access to specialized skills that may be scarce locally, fostering innovation and competitiveness. Research highlights that effective talent management strategies, including clear communication, fair compensation, and performance monitoring, are critical to maximizing the potential of gig workers (Lepanjuuri et al., 2021). Despite these advantages, SMEs often face challenges in maintaining quality and consistency in service delivery, particularly when engaging remote gig workers from diverse cultural and professional backgrounds (Murray et al., 2022). Ensuring alignment between organizational goals and the capabilities of gig workers remains a priority for sustainable growth.

Digital platforms are the cornerstone of the gig economy, facilitating seamless interactions between employers and gig workers. These platforms leverage advanced algorithms and data analytics to match skills with tasks, optimize project timelines, and enhance transparency. In Delta State, where internet penetration and digital literacy are progressively improving, the adoption of such platforms is gaining momentum. Studies underscore the role of digital platforms in democratizing access to opportunities for SMEs, enabling them to compete in broader markets (Kenney & Zysman, 2020; Codagnone et al., 2022). However, the reliance on digital platforms also introduces vulnerabilities, including cybersecurity risks, platform dependency, and algorithmic biases that may affect fairness in worker selection and compensation (Aloisi & De Stefano, 2021). Addressing these issues is essential to ensure equitable and sustainable integration of digital platforms in the local gig economy.

Task and project design is a critical determinant of success in the gig economy. SMEs must strategically define and structure tasks to maximize productivity and efficiency while accommodating the diverse expertise of gig workers. Effective project design involves clear

objectives, realistic timelines, and measurable deliverables, fostering a collaborative environment even in remote work settings. Research suggests that well-structured tasks contribute to higher job satisfaction among gig workers and improve outcomes for businesses (Petriglieri et al., 2022). For SMEs in Delta State, understanding the nuances of task design in the gig economy can enhance their ability to harness the potential of a diverse and distributed workforce. Nevertheless, cultural and contextual factors, such as language barriers and differing work ethics, may influence the effectiveness of task execution, necessitating tailored approaches to project management (Osoba et al., 2021).

The relationship between the gig economy and business growth is multifaceted, with SMEs in Delta State uniquely positioned to benefit from this emerging paradigm. By leveraging the gig economy, these enterprises can access cost-effective labor, expand their service offerings, and respond agilely to market demands. Empirical studies have demonstrated that SMEs engaging with the gig economy often experience improved financial performance and increased innovation capacity (Katz & Krueger, 2021; Schömann et al., 2022). However, the full potential of the gig economy can only be realized with supportive policies and infrastructure, including reliable internet connectivity, affordable digital tools, and frameworks for fair labor practices. In Delta State, addressing these gaps is crucial to fostering an enabling environment for Micro- Enterprises and MEs to thrive in the gig economy.

Moreover, the gig economy's impact on SMEs extends beyond operational efficiency to include broader socioeconomic implications. For instance, the inclusion of marginalized groups, such as women and youth, in gig work can contribute to poverty alleviation and economic empowerment (Heeks et al., 2021). In Delta State, where unemployment and underemployment rates remain significant, the gig economy offers a viable pathway to job creation and skills development. However, the informal nature of gig work often excludes workers from social protection schemes, such as health insurance and retirement benefits, exacerbating vulnerabilities for the most disadvantaged groups (De Stefano et al., 2021). Policymakers and stakeholders must prioritize the integration of social safety nets to ensure that the benefits of the gig economy are equitably distributed.

Technological advancements are instrumental in shaping the trajectory of the gig economy. The proliferation of artificial intelligence, machine learning, and blockchain technology is redefining how tasks are assigned, monitored, and compensated. For SMEs in Delta State, embracing these technologies can enhance operational efficiency and competitiveness. Studies

highlight that blockchain-based smart contracts, for example, can automate payment processes and ensure transparency in transactions, reducing disputes and fostering trust between gig workers and employers (Sundararajan, 2020; Agrawal et al., 2022). However, the high costs associated with adopting advanced technologies and the limited availability of technical expertise in the region pose significant barriers to their widespread implementation. Bridging these gaps through capacity-building initiatives and strategic partnerships is essential for SMEs to fully leverage the potential of emerging technologies.

Cultural attitudes and societal norms also play a critical role in shaping the adoption and effectiveness of the gig economy in Delta State. Traditional perceptions of work and employment, which often prioritize stability and long-term engagement, may conflict with the flexibility and transience inherent in gig work. Studies have shown that cultural acceptance of gig work is a significant predictor of its success, influencing worker motivation and employer trust (Friedman, 2021; Anwar & Graham, 2022). In Delta State, fostering a cultural shift towards embracing gig work requires concerted efforts from educational institutions, industry stakeholders, and policymakers. Initiatives such as awareness campaigns, training programs, and success stories can help demystify the gig economy and promote its benefits to a broader audience.

The regulatory landscape is another critical factor influencing the growth of the gig economy in Delta State. While the absence of stringent labor laws governing gig work provides flexibility for SMEs, it also raises concerns about worker exploitation and job security. Comparative studies from other regions highlight the importance of balanced regulations that protect worker rights without stifling innovation and entrepreneurial activity (Huws et al., 2021; Vallas & Schor, 2020). For Delta State, developing a regulatory framework that addresses these dual objectives is imperative to creating a sustainable gig economy ecosystem. Collaborative policymaking involving government agencies, industry leaders, and worker representatives can ensure that regulations are both inclusive and contextually relevant.

Thus, the gig economy represents a dynamic and multifaceted phenomenon with significant implications for SMEs in Delta State, Nigeria. By examining the interplay of workforce composition, talent sourcing and management, digital platforms, and task and project design, this study provides a comprehensive understanding of how these factors can influence business growth. While the gig economy offers unprecedented opportunities for SMEs and micro enterprises to enhance their competitiveness and innovation capacity, addressing challenges related to regulation, technology adoption, and cultural

acceptance is critical to realizing its full potential. Through targeted interventions and collaborative efforts, Delta State can harness the transformative power of the gig economy to drive sustainable economic development and improve livelihoods.

### **Defining the Problem**

The gig economy has increasingly become a focal point of global labor market transformations, offering unprecedented flexibility and access to specialized talent through digital platforms. However, despite its rapid adoption, significant gaps persist in understanding its implications for micro, small and medium-scale enterprises, particularly in regions like Delta State, Nigeria. Existing literature largely emphasizes the gig economy's potential for cost reduction and efficiency (Kalleberg & Dunn, 2020; Wood et al., 2021), yet the nuanced challenges SMEs face in effectively integrating gig work remain underexplored. For instance, issues such as inconsistent regulatory frameworks, limited access to digital infrastructure, and cultural barriers unique to local contexts have received scant attention (Stewart & Stanford, 2021; Osoba et al., 2021).

Furthermore, while studies have examined the role of digital platforms in talent sourcing and task management (Codagnone et al., 2022; Murray et al., 2022), there is limited empirical evidence on how SMEs in developing regions leverage these platforms to foster innovation and growth. The impact of workforce composition and project design on SME performance, particularly in relation to sustainability and scalability, also remains inadequately addressed in the literature (Petriglieri et al., 2022; Schömann et al., 2022). Additionally, the broader socioeconomic implications of the gig economy, such as its role in addressing unemployment and fostering inclusivity, are yet to be fully understood in the context of Delta State. This study seeks to bridge these gaps by examining the interplay of workforce composition, talent sourcing and management, digital platforms, and task and project design within the gig economy, with a focus on their collective impact on SME growth in Delta State, Nigeria. By addressing these variables, the study aims to provide actionable insights for policymakers, industry stakeholders, and SMEs to harness the potential of the gig economy while mitigating its challenges.

### **Literature Review**

#### **Conceptual Review**

##### **Gig Economy**

The gig economy refers to a labor market characterized by short-term contracts or freelance work as opposed to permanent jobs. It is facilitated primarily by digital platforms that connect workers with tasks or clients on-



demand. According to Aloisi and De Stefano (2021), the gig economy has become a significant component of global labor markets, offering flexibility to employers and workers alike. However, its rise has also introduced challenges, such as job insecurity and a lack of traditional employment benefits (Wood et al., 2021). In developing economies like Nigeria, the gig economy is increasingly recognized as a solution to unemployment and underemployment, although its impact on long-term economic stability remains debatable (Osoba et al., 2021).

### **Workforce Composition (WC)**

Workforce composition refers to the demographic, educational, and skill-based attributes of employees within an organization. In the context of the gig economy, workforce composition is dynamic and diverse, often involving individuals from various cultural and professional backgrounds (Heeks et al., 2021). SMEs leveraging the gig economy must adapt to this diversity to maximize productivity and foster innovation. Kalleberg and Dunn (2020) argue that effective workforce management within the gig economy requires balancing flexibility with inclusivity, ensuring that workers from varied backgrounds can contribute meaningfully to organizational goals.

### **Talent Sourcing and Management (TSM)**

Talent sourcing and management involve identifying, recruiting, and retaining individuals with the skills needed to fulfill organizational objectives. In the gig economy, this process is often mediated by digital platforms, which enable access to a global pool of freelancers and contractors. Codagnone et al. (2022) highlight that effective talent sourcing in the gig economy requires robust digital tools and clear communication channels. However, managing gig workers presents unique challenges, including ensuring engagement and maintaining quality standards without the traditional structures of full-time employment (Petriglieri et al., 2022).

### **Digital Platforms (DP)**

Digital platforms are the backbone of the gig economy, providing the infrastructure for connecting workers with clients and facilitating task execution. Platforms such as Upwork, Fiverr, and Uber have transformed how businesses operate by enabling cost-efficient access to specialized talent (Murray et al., 2022). These platforms also empower SMEs by reducing transaction costs and expanding market reach. However, their effectiveness is contingent on reliable internet access and user-friendly interfaces, which can be a limitation in developing regions like Delta State (Schömann et al., 2022).

### **Task and Project Design (TPD)**

Task and project design in the gig economy involves structuring work to optimize efficiency, innovation, and worker satisfaction. Effective task design ensures clarity, achievable timelines, and fair compensation, which are critical in retaining gig workers and maintaining productivity (Friedman, 2021). Stewart and Stanford (2021) emphasize that poorly designed tasks can lead to dissatisfaction and high turnover rates among gig workers, undermining organizational performance. SMEs must therefore invest in developing well-defined and flexible project structures that cater to both organizational needs and worker preferences.

### **Business Growth (BG)**

Business growth encompasses the expansion of an organization's operations, market share, and profitability. For SMEs, growth often hinges on the ability to innovate, adapt to market changes, and optimize resource utilization. Kenney and Zysman (2020) argue that the gig economy offers SMEs a unique opportunity to scale operations by accessing specialized talent on-demand. However, sustainable growth requires addressing challenges such as regulatory compliance, worker retention, and the integration of digital tools (Vallas & Schor, 2020).

### **Gig Economy and Business Growth**

The interplay between the gig economy and business growth is multifaceted, offering both opportunities and challenges for SMEs. Digital platforms enable SMEs to reduce costs, increase efficiency, and expand their customer base, thereby fostering growth (Huws et al., 2021). However, the reliance on gig workers also introduces risks, such as inconsistent quality and limited worker loyalty (Wood et al., 2021). In the context of Delta State, Nigeria, leveraging the gig economy for business growth requires addressing systemic issues such as digital literacy, infrastructure gaps, and cultural barriers (Osoba et al., 2021). Schömann et al. (2022) emphasize that while the gig economy can drive innovation and scalability, its benefits are maximized when coupled with strategic workforce management and robust task design frameworks.

### **Theoretical Review**

Theoretical frameworks provide essential perspectives for understanding complex phenomena. In examining the interplay between the gig economy and business growth, particularly in small and medium-scale enterprises (SMEs) in Delta State, Nigeria, two

theories—Resource-Based View (RBV) and Transaction Cost Economics (TCE)—stand out as pivotal. These theories help elucidate how organizational resources and cost structures can be optimized to harness the potential of gig work effectively.

**The Resource-Based View (RBV)** emerged in the 1980s through the works of scholars like Wernerfelt (1984) and Barney (1991). RBV posits that an organization's competitive advantage lies in its ability to acquire and utilize resources that are valuable, rare, inimitable, and non-substitutable (VRIN). This theory emphasizes internal capabilities and resources—such as human capital, technology, and organizational processes—as the foundation of sustainable business growth. In the context of the gig economy, RBV is relevant as it highlights how SMEs can strategically leverage the unique skills and talents of gig workers to drive innovation, productivity, and scalability. Workforce composition (WC), talent sourcing and management (TSM), and digital platforms (DP) align with RBV principles, as they enable SMEs to access specialized knowledge and skills, often unattainable within traditional employment structures.

**The Transaction Cost Economics (TCE)** theory, introduced by Coase (1937) and developed further by Williamson (1975), focuses on the costs associated with economic transactions. It examines the trade-offs between using market mechanisms and hierarchical organizational structures to execute tasks. TCE suggests that firms aim to minimize transaction costs, which include search and information costs, bargaining costs, and enforcement costs. In the gig economy, digital platforms (DP) play a critical role in reducing these costs by providing streamlined interfaces for matching gig workers with employers, enabling efficient task and project design (TPD). For SMEs, understanding these cost dynamics is essential to optimizing resource allocation and ensuring profitability.

Both theories offer unique lenses for analyzing how the gig economy impacts business growth. RBV emphasizes the strategic use of internal and external resources, aligning closely with workforce composition and talent management. For instance, SMEs in Delta State can capitalize on the diverse skill sets available in the gig economy to enhance their competitive edge. On the other hand, TCE provides a framework for understanding how digital platforms and effective task design reduce transaction costs, enabling SMEs to scale operations while maintaining efficiency. The theories are complementary in highlighting how SMEs can leverage gig economy dynamics for sustainable growth.

The gig economy has reshaped traditional labor practices globally, offering SMEs in developing regions like Delta State a unique opportunity to address challenges such as limited access to skilled labor and high operational costs. However, this integration also presents challenges, including managing a fragmented workforce and ensuring task alignment with organizational goals. By applying RBV and TCE, this study provides a nuanced understanding of how workforce composition, talent sourcing and management, digital platforms, and task and project design collectively influence SME growth. The findings will not only bridge theoretical gaps but also offer practical solutions for SMEs seeking to thrive in the dynamic gig economy landscape.

### **Empirical Review**

Ifeanyi, Onwuka and Emaviwe (2024) explored the impact of customer service management on the survival of MSMEs in Asaba, Delta State, Nigeria. The researchers employed a descriptive survey research design, collecting data through structured questionnaires from MSMEs in Asaba. The data analysis was conducted using correlation analysis and OLS regression with SPSS version 25. The findings revealed that customer service significantly affects the survival of MSMEs. The study concluded that customer-related factors were crucial for MSME success and recommended investing in customer satisfaction programs, improving customer support systems, and developing strong retention strategies.

Oniku, Akpata and Abiodun (2024) examined the influence of the gig economy on millennial lifestyles and purchasing behavior in Lagos, Nigeria. An empirical approach was used to collect data from millennials in Lagos. The data analysis was based on empirical analysis techniques. The study found that the gig economy had a substantial influence on the lifestyles and purchasing behavior of millennials, particularly in urban areas. The study concluded that businesses should tailor their marketing strategies to accommodate the shifting behaviors of millennials in the context of the gig economy.

Ifeanyi, Nwaosu and Ezeanokwasa (2024) studied the effect of digital knowledge on market positioning of MSMEs in Asaba, Delta State, Nigeria. A descriptive survey research design was adopted, with data collected using structured questionnaires from MSMEs in the region. The data analysis employed arithmetic mean, correlation analysis, and OLS regression with SPSS version 25. The study revealed that e-commerce adoption and digital literacy had a positive impact on market positioning, while digital skill training had a positive insignificant effect in the short term. It recommended prioritizing e-commerce and digital literacy while managing cybersecurity efforts.

effectively and aligning digital skill training with long-term objectives.

Ajiboye, (2023) explored the role of digital platforms in transforming workforce composition and task management in Nigerian SMEs. The study used a mixed-methods approach, combining both qualitative and quantitative research designs. Data were sourced from SMEs in Lagos and Delta States through surveys and interviews. The data were analyzed using thematic analysis and descriptive statistics. The findings indicated that digital platforms facilitated better workforce flexibility, leading to enhanced business efficiency and growth. The study concluded that the integration of digital tools could significantly improve task management in Nigerian SMEs and recommended increased investment in digital infrastructure.

Eze and Nwachukwu (2023) investigated the role of workforce composition in the gig economy and its effects on SME growth in Delta State, Nigeria. The researchers used a cross-sectional survey design, with data collected from 250 SME owners through structured questionnaires. The data analysis employed chi-square tests and regression analysis. The findings revealed that diverse workforce composition positively influenced the productivity and innovation capacity of SMEs. The study concluded that SMEs should prioritize workforce diversity as a strategy for fostering innovation and business growth in the gig economy, recommending policies to promote inclusivity and diversity in workforce composition.

Odita (2023) aimed to examine social media marketing strategies adopted by SMEs for business survival in Delta State, Nigeria. A descriptive survey research design was used, and data were gathered through a self-structured questionnaire from 398 registered SMEs in Delta State. Descriptive and inferential statistics, including frequency count, simple percentage, mean, standard deviation, and Pearson Product Moment Correlation, were used for data analysis. The study found significant relationships between cause marketing strategy and customer loyalty, relationship marketing and customer patronage, and scarcity marketing and sales volume. It recommended that SMEs enhance their marketing strategies to raise the standard of their businesses.

Akinmoladun and Olayinka (2022) studied talent sourcing and management strategies in SMEs within the Nigerian gig economy. The research employed a survey design, with data collected through questionnaires from SMEs in Abuja and Delta State. The data analysis used correlation and regression analysis. The findings highlighted that strategic talent sourcing and management practices are crucial for the scalability and growth of SMEs in the gig economy. The study concluded that effective talent management practices contribute to the long-term sustainability of

businesses and recommended the adoption of more structured talent development programs within SMEs.

Enwukwe (2021) investigated the employment status of Nigerian workers in the gig economy, focusing on Uber drivers as a case study. A qualitative analysis approach was employed, with data collected from Uber drivers across Nigeria. The analysis centered on qualitative data interpretation. The study identified challenges related to the lack of rights and proper employment status for gig workers, particularly in the ride-hailing industry. The conclusion proposed the introduction of a new employment category called "independent employees" to better address the status and rights of gig workers in Nigeria.

Okeke and Nwankwo (2021) focused on task and project design in Nigerian SMEs operating in the gig economy. They adopted a case study methodology, with data gathered from SMEs operating on digital platforms across Delta State. The data were analyzed using content analysis and thematic coding. The study found that task and project design, when optimized, played a significant role in enhancing business growth. The study concluded that SMEs should focus on task efficiency, flexibility, and scalability to succeed in the gig economy and recommended that SMEs invest in training programs for better project management skills. Clement (2020) assessed the impact of SMEs on economic growth in Nigeria. An empirical analysis was conducted using data sourced from government publications and reports. The data analysis involved statistical methods for understanding the relationship between SMEs and economic growth. The findings showed that SMEs significantly contributed to Nigeria's economic growth through employment generation, poverty alleviation, and income generation. The study concluded that SMEs play a vital role in national development and recommended establishing microfinance banks to enhance access to credit for SMEs.

## Research Gaps

### Limited Examination of All Gig Economy Variables:

While multiple studies examined individual components such as customer service (Ifeanyi et al., 2024) and social media marketing strategies (Odita, 2023), few studies integrated all gig economy components, including workforce composition (WC), talent sourcing and management (TSM), digital platforms (DP), and task and project design (TPD) in one comprehensive framework. This gap limits the understanding of how these factors interact to influence business growth.

### Variables Gaps

### Integration of Digital Platforms with Other

**Variables:** While studies like Ajiboye (2023) and

Ifeanyi et al. (2024) emphasize the importance of digital platforms for SMEs, they fail to fully integrate digital platforms with other variables such as workforce composition (WC), task design (TPD), and talent management (TSM). Research is needed to explore how the combined use of digital platforms and other gig economy components can drive business growth more effectively.

### Methodological Gaps

**Lack of Multivariate Analysis:** While studies such as those by Ajiboye (2023) and Oditia (2023) used correlation and regression analysis, they did not fully explore the interactions between multiple variables. A multivariate approach that considers the simultaneous effects of workforce composition, talent management, digital platforms, and task design could provide a

### Sample Size Determination

The researcher constrains the research to a number of SMEs drawn from the research population and this is determined using the Taro Yamani formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where N = Population size

n = Sample size

e = level of significance (0.05)

$$\begin{aligned} & \frac{3976}{1 + 3976(0.0025)} \\ &= \frac{3976}{1 + 9.94} \\ &= \frac{3976}{10.94} \\ &= 363 \end{aligned}$$

The researchers in this study employed a simple random sampling strategy because it allows them to draw conclusions about a bigger population from a smaller subset of that population. A simple random sample method was used to select 363 SMEs from the whole population.

### Research Instruments

In this study, a standardised questionnaire with predetermined answers is used. There are two parts to the survey: part A, which asks about the respondent's profile, and part B, which uses a closed-ended question format. In order to keep respondents focused on the

deeper understanding of the factors influencing SME business growth.

### Research Method

A descriptive survey research design is chosen in relation to the research topic and study objectives. In contrast to longitudinal studies, which track participants throughout time, survey studies only track them at a single point in time. Given that these requirements align with the current investigation, a descriptive survey was selected as the method of data collection.

The population of this study consists of the total number of SMEs registered in Delta State which is given as 3,976 as at February, 2023, according to SMEDAN.

study objectives, this helps to guide them to answer within the available choices. This is accomplished by having respondents rate the degree to which they perceived each statement using a 5-point Likert scale that is provided to them.

### Validation and Reliability of Research Instruments

This study's content validity assessment included having 10 management experts fill out the questionnaire and meeting with my dissertation advisor, who provided feedback on how well the indicators captured the study's concept. The feedback they provide is utilized to enhance the questionnaire.

This study's reliability is ensured by pre-testing the questionnaire on a subset of the population; this will allow for adjustments to different parts of the questionnaire. The study uses Cronbach's alpha, whose value ranges from zero to one, to assess the dependability of the data (1). The degree to which a group of test items can be seen as measuring a single latent variable is indicated by Cronbach's alpha ( $\alpha$ ). Reliability of scales improves as this coefficient rises. At the very least, a value of 0.6 is excellent, and 0.7 is perfectly fine. For the purpose of this research, a result higher than 0.7 will be considered acceptable, SME owners and managers in Nigeria's Delta State filled out the survey. A high response rate was achieved by administering the questionnaire in person. Carrying out the reliability test follows the validity test. The table below displays the results of the reliability test:

**Table 3.1: Reliability Statistics**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|----------------------------------------------|------------|
| .887             | .888                                         | 5          |

Source: Author's computation 2024.

The table clearly shows that the five variables are dependable, with a Cronbach Alpha value of 0.887, which is greater than 0.7. The questionnaire used to measure the variable in this study is a good instrument because all of the items are trustworthy.

#### Data Analysis Technique and Model Specification

Descriptive statistics such as frequencies and percentages were used in answering the research question and the correlation analysis was used to determine the nature of relationship between the independent and dependent variables. The hypotheses was tested using the multiple regressions with the aid of SPSS version 23, to find the relationship between business growth (BG) and the independent variable gig economy. The sub variables are; workforce

composition (WC), talent sourcing and management (TSM), digital platforms (DP) and, task and project design (TPD). The multiple regression equation was as follows;

$$BG = f(WC, TSM, DP, TPD)$$

$$BG = \beta_0 + \beta_1 WC + \beta_2 TSM + \beta_3 DP + \beta_4 TPD + \epsilon$$

Where; BG = Business Growth; WC = Workforce Composition; TSM = Talent Sourcing and Management; DP = Digital Platforms; TPD = Task and Project Design

$\beta_0$  = Intercept of regression line ;  $\beta_1$ -  $\beta_4$  = Partial regression coefficient of the Independent Variables;  $\epsilon$  = error term or stochastic term.

#### Results and Discussion

A total of three hundred and sixty-three (363) questionnaires were administered to owners and manager of SMEs in Delta State, Nigeria, however, two hundred and ninety-nine (299) were retrieved and properly filled while 64 (17.63%) were not properly filled. This two hundred and ninety-nine (299) respondents represent 82.37 percent of the total questionnaire administered, which shows that two hundred and ninety-nine (299) respondents is sufficient for the study. This response was excellent and representative of the population and conforms to Cooper & Schindler (2014) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and above is excellent.

#### Description of Variables

This section seeks to analyze the research question one by one and analyze the responses of the respondents and bring out the effect of the study for proper analysis. These were done with the aid of descriptive statistics. The descriptive statistics which comprises of the minimum, maximum, mean and standard deviation was employed proper and thorough description of the independent variables [WC, TSM, DP and TPD] and dependent variable (BG) for this study.

**Table 4.1: Descriptive Statistics**

|                    | N   | Minimum | Maximum | Mean  | Std. Deviation |
|--------------------|-----|---------|---------|-------|----------------|
| WC                 | 299 | 8       | 20      | 16.55 | 2.492          |
| TSM                | 299 | 4       | 20      | 16.06 | 2.739          |
| DP                 | 299 | 10      | 20      | 17.08 | 2.204          |
| TPD                | 299 | 10      | 20      | 16.18 | 2.391          |
| BG                 | 299 | 8       | 20      | 15.80 | 2.766          |
| Valid N (listwise) | 299 |         |         |       |                |

Source: SPSS Version 23 Output, 2024.

The descriptive statistics for workforce composition (WC) for Small and Medium Scales Enterprises in Delta State indicate a mean of 16.55, a standard deviation of 2.492 with the difference in the maximum and minimum values which stood at 12. This implies that the WC of Small and Medium Scales Enterprises in Delta State varies tremendously since the mean value is greater than the standard deviation, which also reflected in the variation of the business growth (BG) in Nigeria. Similarly, talent sourcing and management (TSM) has minimum value of 4 and maximum value of 20 leading to the mean and standard deviation of 16.06 and 2.739 respectively. This implies that the TSM for Small and Medium Scales Enterprises in Delta State varies tremendously since the mean value is greater than the standard deviation. Also, digital platforms (DP) has minimum value of 10 and maximum value of 20 leading to the mean and standard deviation of 17.08 and 2.204 respectively. This implies that DP for Small and Medium Scales Enterprises in Delta State varies tremendously since the mean value is greater than the standard deviation. More also, task and project design (TPD) has minimum value of 10 and maximum value of 20 leading to the mean and standard deviation of

16.18 and 2.391 respectively. This implies that the TPD offer by the Small and Medium Scales Enterprises in, Delta State varies tremendously since the mean value is greater than the standard deviation, which also reflected in the variation of the BG in Nigeria. Finally, BG indicates a mean of 16.90, a standard deviation of 2.000 with the maximum and minimum values of 8 and 20. The high discrepancy between the maximum and minimum value shows that BG is majorly influence by the measures of gig economy.

## Analysis of Data

### Correlation Results

The section presents the correlation result of the explanatory variables and the explained variable. The correlation matrix is used to examine the linear association between the independent and dependent variables and also between the independent variables. The study therefore adopted person correlation coefficient to assess the level of association between the variables concerned. The table below shows the correlation between the dependent variable which is BG and independent variables identified to be WC, TSM, DP and TPD (measures of gig economy).

**Table 4.2: Correlation Output**

|                        | BG    | WC    | TSM   | DP    | TPD   |
|------------------------|-------|-------|-------|-------|-------|
| Pearson Correlation BG | 1.000 |       |       |       |       |
| WC                     | .407  | 1.000 |       |       |       |
| TSM                    | .497  | .404  | 1.000 |       |       |
| DP                     | .402  | .345  | .327  | 1.000 |       |
| TPD                    | .581  | .386  | .403  | .418  | 1.000 |

Source: SPSS Version 23 Output, 2024.

In Table 4.2, WC has a correlation coefficient of ( $r=0.407>0.05$ ), which reveals that WC has strong positive correlation with BG, this implies that WC which has strong positive effects on BG in Delta State, Nigeria. Also, TSM has a coefficient of ( $r=0.497>0.05$ ), which reveals that TSM has strong positive correlation with BG, this implies that when TSM is properly design and taken, it would have positive effects on BG in Delta State, Nigeria. More also, DP has a coefficient of ( $r=$

$0.402>0.05$ ), which reveals that DP has strong positive correlation with BG, this implies that a well DP for SME's, would have positive effects on BG in Delta State, Nigeria. Finally, TPD has a coefficient of ( $r=0.581>0.05$ ), which reveals TPD has very strong positive correlation with BG; this implies that TPD goes a long way in influencing BG in Delta State, Nigeria.

**Table 3: Multiple regression analysis me Gig Economy on Business Growth Coefficients<sup>a</sup>**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|--------------|-----------------------------|------------|---------------------------|-------|------|
|              | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant) | .091                        | .021       |                           | 4.333 | .000 |
| WC           | .026                        | .009       | .024                      | 2.289 | .007 |
| TSM          | .260                        | .090       | .258                      | 2.889 | .005 |
| DP           | .048                        | .010       | .042                      | 4.800 | .000 |
| TPD          | .444                        | .106       | .384                      | 4.189 | .000 |

a. Dependent Variable: BG

Source: SPSS Version 23 Output, 2024.

In Table 4.3 above, the regression coefficient of workforce composition (WC) is 0.024 with a t-value of 2.289 and associated p-value (sig. value) is 0.007. This suggests that WC has positive effect on BG. This implies that, the effect is significant given the fact that the p-value of 0.007 is equal to 0.05 (5%) level significance. The coefficient of WC is 0.024, which implies that WC has a positive trend with business growth (BG). One percent (1%) movement in WC would lead to 2.4% increase in BG. WC has a significant influence BG in Delta State, Nigeria. Workforce diversity, flexibility, and inclusivity play vital roles in fostering innovation and efficiency, which contribute to SME growth. From the perspective of the Resource-Based View (RBV), WC serves as a strategic resource that provides SMEs with unique competitive advantages. A diverse and well-composed workforce brings varied skill sets, perspectives, and experiences, enabling SMEs to respond effectively to market demands and innovate. Similarly, Transaction Cost Economics (TCE) theory emphasizes that an optimized workforce reduces transaction costs associated with recruiting, training, and managing workers, thereby enhancing productivity and business growth. Empirical studies such as Eze and Nwachukwu (2023) corroborate these findings, emphasizing that a well-composed workforce contributes to higher innovation capacity and productivity in SMEs. Consequently, improving WC through targeted recruitment and retention strategies can significantly enhance business performance in Delta State.

Also, the coefficient of talent sourcing and management (TSM) is 0.005 with a t-value of 0.258 and associated p-value (sig. value) is 2.889. This suggests that TSM has positive effect on business growth (BG). This implies that, the effect is significant given the fact that the p-value of 0.005 is lesser than that 0.05 (5%) level significance. The coefficient of TSM is 0.258, which implies that TSM has a positive trend with BG. One percent (1%) movement in TSM would lead to 25.8% increases in BG in Delta State, Nigeria. TSM has a significant influence BG in Delta State, Nigeria. This underscores the importance of effective TSM strategies in enhancing workforce productivity and organizational efficiency. Under the RBV, talent is viewed as a strategic asset that provides long-term competitive advantages. Skilled employees are difficult to imitate and contribute to innovation and operational excellence. Meanwhile, Transaction Cost Economics (TCE) theory posits that strategic talent management minimizes the transaction costs associated with hiring, training, and retaining high-performing workers, thus fostering growth. Empirical evidence, such as Akinmoladun and Olayinka's (2022) study, highlights that talent sourcing and retention are pivotal for sustaining competitive advantages in SMEs

operating within the gig economy. Ensuring proper management of talents not only improves efficiency but also attracts high-value clients, contributing to overall business growth.

More also, the coefficient of digital platforms (DP) is 0.042 with a t-value of 4.800 and associated p-value (sig. value) is 0.000. This suggests that DP has positive effect on business growth (BG). This implies that, the effect is significant given the fact that the p-value of 0.000 is lesser than that 0.05 (5%) level significance. The coefficient of DP is 0.042, which implies that DP has a positive effect on BG. One percent (1%) movement in DP would lead to 4.2% increase in business growth (BG). DP has a significant influence BG in Delta State, Nigeria. This result reflects the critical role of digital tools in enhancing communication, task management, and market access for SMEs. The RBV framework suggests that digital platforms are valuable, rare, and non-substitutable resources that enhance organizational capabilities and competitive positioning. In contrast, Transaction Cost Economics (TCE) theory highlights the role of digital platforms in reducing transaction costs by improving coordination, communication, and monitoring in business processes. Ajiboye (2023) provides empirical support, demonstrating that digital platforms improve task management and workforce flexibility in Nigerian SMEs, thereby boosting productivity and growth. These findings suggest that investing in digital platforms is not just a necessity but a strategic imperative for SMEs in Delta State.

Finally, the coefficient of task and project design (TPD) is 0.384 with a t-value of 4.189 and associated p-value (sig. value) is 0.000. This suggests that TPD has positive effect on business growth (BG). This implies that, the effect is significant given the fact that the p-value of 0.000 is lesser than that 0.05 (5%) level significance. The coefficient of TPD is 0.384, which implies that TPD has a positive trend with BG. One percent (1%) movement in TPD would lead to 38.4% increase in BG. TPD has a significant influence BG in Delta State, Nigeria. This finding highlights the critical role of well-structured tasks and projects in driving efficiency, innovation, and productivity in SMEs. Through the lens of the resource-based value (RBV) theory, optimized task and project designs constitute unique organizational capabilities that enhance operational efficiency and innovation. From the Transaction Cost Economics (TCE) perspective, effective task and project designs minimize transaction costs by improving coordination and resource allocation. Okeke and Nwankwo (2021) support these findings, emphasizing that SMEs with optimized task and project management systems experience improved productivity and business outcomes. These results underscore the importance of adopting agile project

management techniques to achieve better results in the gig economy.

**Table 4.4: Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1     | .967 <sup>a</sup> | .935     | .921              | 2.104                      | 1.279         |

a. Predictors: (Constant), WC, TSM, DP, TPD

b. Dependent Variable: BG

Source: SPSS Version 23 Output, 2024.

Also, The table 4.4 which is model summary table shows the correlation co-efficient (R) of the regression is 0.967(97%) which indicates a very strong positive relationship between the dependent variable business growth [BG] and the independent variables workforce composition (WC), talent sourcing and management (TSM), digital platforms (DP) and, task and project design (TPD)

. The co-efficient of determination ( $R^2$ ) is 94% (0.935) showing that 94% of the variation in dependent variable (BG) has been explained by the independent

variables [WC, TSM, DP and TPD]. While 6% remain unexplained in the model. With an  $R^2$  value of 94% showed that the strong positive relationship is further confirmed. The adjusted  $R^2$  measures the goodness or fit of the model. This shows the goodness of fit of the model and also explains the dependent variable in relation to the independent variables in 92ways. The 8% left is known as the error term and other variables outside the model. From the above, there is conclusive evidence of serial or autocorrelation since the Durbin Watson calculated value of 1.279 is less than “2”.

**Table 4.5: ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | Df | Mean Square | F      | Sig.              |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1     | Regression | 330.086        | 4  | 82.521      | 18.635 | .000 <sup>b</sup> |
|       | Residual   | 411.833        | 93 | 4.428       |        |                   |
|       | Total      | 741.918        | 97 |             |        |                   |

a. Dependent Variable: BG

b. Predictors: (Constant), WC, TSM, DP, TPD

Source: SPSS Version 23 Output, 2024.

Lastly, the Anova in table 4.4.3 above, shows the overall significance of the significance of the model, has F(0.18.635) with p-value is estimated at 0.000. This

indicates that all the independent variables [WC, TSM, DP and TPD] jointly influence the dependent variable (BG) in Delta State, Nigeria.

## Summary, Conclusion and Recommendations

### Summary of Findings

i. Workforce composition (WC) significantly impacts business growth, with a 1% improvement resulting in a 2.4% increase in growth. Workforce composition is a critical determinant of business growth in SMEs. By leveraging the diverse skills and abilities of their workforce, SMEs in Delta State can achieve sustained competitive advantages and growth.

ii. Talent sourcing and management (TSM) have a substantial positive effect on business growth, contributing a 25.8% increase for every 1% improvement. Effective talent sourcing and management are integral to SME growth. By implementing innovative TSM practices, businesses can build a robust workforce that drives efficiency, innovation, and profitability.

iii. Digital platforms (DP) are essential for SME growth, driving a 4.2% increase in growth for every 1% improvement in their use. Digital platforms are transformative tools that drive SME growth by enhancing efficiency, communication, and market access. SMEs in Delta State must prioritize the adoption and effective utilization of digital technologies to achieve sustainable growth.

iv. Task and project design (TPD) are the most impactful factors, with a 1% improvement leading to a 38.4% increase in business growth. Task and project design are pivotal to SME growth. By adopting innovative and efficient task management practices, SMEs in Delta State can achieve significant improvements in productivity, profitability, and market positioning.



## Conclusion

The findings of this study underscore the transformative impact of gig economy variables—workforce composition (WC), talent sourcing and management (TSM), digital platforms (DP), and task and project design (TPD)—on the growth of small and medium-scale enterprises (SMEs) in Delta State, Nigeria. Each variable significantly contributes to business growth, with TPD exhibiting the most substantial effect, followed by TSM, DP, and WC. These results highlight the evolving dynamics of SME operations in the gig economy, emphasizing innovation, flexibility, and resource optimization as critical drivers of success. The application of the Resource-Based View (RBV) theory highlights the strategic importance of unique resources, such as a well-composed workforce and innovative task designs, in achieving sustained competitive advantage. This perspective reinforces the need for SMEs to view their workforce and operational strategies as core assets that drive growth. Transaction Cost Economics (TCE) complements this understanding by emphasizing the cost-efficiency benefits of adopting digital platforms and streamlined task designs. Together, these theoretical frameworks provide a comprehensive lens for understanding the interplay between gig economy variables and business growth. The study's findings have several practical implications. First, workforce composition plays a pivotal role in SME performance, albeit with a relatively modest impact compared to other variables. SMEs should prioritize workforce diversity and inclusivity, leveraging varied skills and experiences to foster innovation. Second, talent sourcing and management emerge as significant determinants of growth, underscoring the need for strategic recruitment, retention, and development practices. Third, the adoption of digital platforms is shown to enhance operational efficiency and market access, making it imperative for SMEs to invest in technology-driven solutions. Finally, task and project design stand out as the most influential factor, highlighting the importance of agility and efficiency in business operations. In conclusion, the gig economy offers immense potential for driving SME growth in Delta State, Nigeria. By strategically leveraging workforce composition, talent management, digital platforms, and task design, SMEs can enhance their competitiveness and achieve sustainable growth in an increasingly dynamic business environment.

## Recommendations

- i. SMEs should adopt inclusive recruitment and training practices to build a diverse and capable workforce.
- ii. Businesses should prioritize strategies for sourcing, retaining, and developing skilled talent to enhance organizational efficiency and competitiveness.
- iii. SMEs must embrace digital tools and platforms to improve communication, task management, and market access.
- iv. Implement agile project management techniques to enhance efficiency and productivity in business operations.

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## Good Governance strategies for sustainable development in Nigeria: A comparative study

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### Abstract

*The study departs from the pattern of previous studies which sorely focused on the common characteristics of good governance. To this end the purpose of the study is to take a novel insight into the provisions of chapter two of the 1999 constitution of Nigeria vis-a-vis other models of good governance by drawing the similarities and dissimilarities. The study further emphasized the drawbacks to the implementation of the constitutional provisions for good governance, democratic institutions. The study found that good governance for sustainable development is well intended in the grund norm. However, certain provisions limit the enforcement of the rights of the citizens to take legal actions against acts of bad governance. This study frowned at the ouster provisions, and encourages developing society not to tolerate such hindrances whether well intended. It is therefore strongly advised that the law- being an instrument for social engineering, good governance and sustainable development must be taken seriously by the Nigerian governments. The study equally suggest that since the objectives of good governance are streamlined into annual budgets, demands "spirit and letter" implementation. The study further recommended that, challenges such as corruption and electoral malpractices which affect the implementation of the tenets of good governance should be eradicated from the system. It is only credible persons who are elected and appointed through credible and transparent electoral process can implement any model of good governance for sustainable development. Furthermore , the weak institutions have to be strengthened through training and retraining, aggressive orientation and reorientation.*

Keywords: Constitutional provisions, Governance, Good governance, Nigeria , Sustainable development, Strategies.

### Introduction

Globally, good governance and sustainable development are at the front burner of international and national discourses. Such interplay between good governance and national development is key to policy discourse (Salifu *et al.*, 2025). It is pertinent to know that good governance birth sustainable development, and where there are no structures and strategies for good governance in a country , the citizens will be experiencing the scorch of bad governance - poverty and malnutrition, bribery and corruption, loss of investments and high rate of unemployment oppression and degradation, environment pollution, political

instability and civil unrest, protests and strikes, breakdown of law, criminality and insecurity, pervasion of justice, and many other vices.

Sustainable development is one of the paradigms designed to address the problem of underdevelopment in third world countries. It inculcates the views of economic growth, reduction of poverty, social development, equity and sustainability (Cheema, 2007 ; Abubakar and Sanusi, 2018). Good governance is associated with "efficiency, accountability, transparency, due process, rule of law, participation, justice and control of corruption (Noor, 2008). In addition, pluralism, solidarity, partnership and

provision of efficient service are instruments that ensure and institutionalize good governance (Abubakar and Sanusi, 2018). However, good governance has been a mirage in Nigeria due to multidimensional challenges inhibiting its institutionalization - human

development challenge, lack of connection between educational institutions and modern economy, leadership challenge, bad governance and corruption (Soyemi, Hammed and Yusuff, n.d), exemplifies as fig. 1 below:

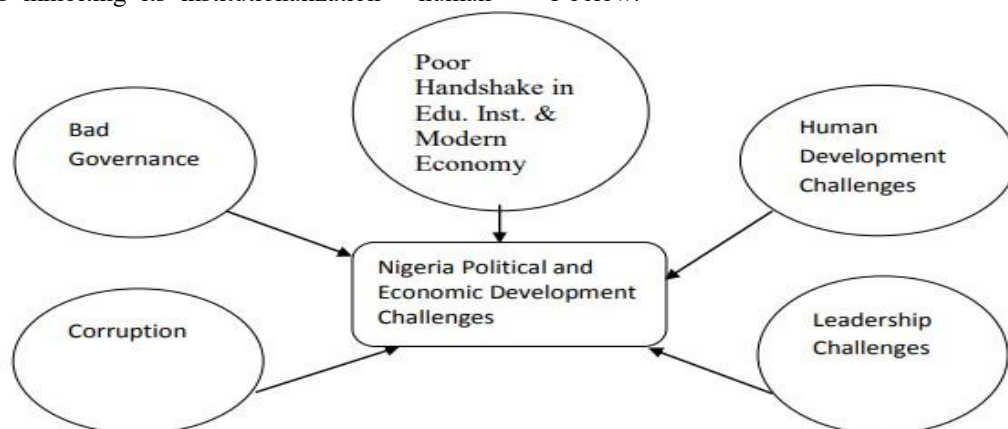


Fig .1: Challenges to Good governance and sustainable economic development

Source: Soyemi, *et al.*, n.d).

It has been observed that good governance has been solidly entrenched in the developed world. For instance, in USA- California, its robust structures for good governance yielded consistent economic growth. Her tech- economy is valued over \$3.9 trillion in 2023 (Smith and Harris, 2023). In Lindberg (2022), welfare system in Sweden ranks among the best in the world. Also, in Asia, Singapore’s model for good governance transformed her economy from developing state in the 1969s to an economy with per Capita GDP of \$72.794 in 2023(Lee, 2022). The transformation of South Korea through technology and industrial development is an indication of policy-driven innovation (Park and Choi, 2021).

Contrastingly, in Africa, there are very poor reports on good governance, national and sustainable development. Rwanda may have changed this narrative by achieving an economic growth rate of over 7% yearly from 2019 to 2023 basically on strengthened anti-corruption crusade and measures and provided investment friendly policies (Nkurunziza, 2022). With respect to Nigeria, it has been all about challenges or excuses (Salifu *et al.*, 2025). The country is faced with persistent governance deficit which hinders growth and sustainable development. Nigeria was ranked as 154th out of 180 countries in 2023 by the Transparency International Corruption Perception Index (Transparency International, 2023). The results from

failure of governance are economic stagnation and poverty standing at 63% in 2023 (NBS, 2023).

Indeed, political and economic governance in Nigeria are plagued with many challenges. Insecurity is one the prevalent critical challenge to governance. It is on record that the Boko Haram insurgents, and separatist agitations have displaced over 3.2 million people in 2024 (UNHCR, 2024). Other challenges are infrastructure deficit, poor road networks, power (electricity) failure, etc. The slow pace of administration of justice by the court system has been identified as a problem (Adigun, 2022).

There are literature on good governance and other connected concepts. Abubakar and Sanusi (2018) examined good governance and local government administration in Nigeria with emphasis on sustainable development and Soyemi *et al.*, (n.d) investigated good governance and sustainable economic development with reference to information technology as a platform. Salifu *et al.*, (2025) emphasized the challenges and prospects of good governance and Anthony (2024) focused on good governance and sustainable democracy, challenges and solutions. The impact of government institutions on good governance was done by Nwafor (2023), and Bukar, Hindatu and Umar (2025) analyzed the connection between good governance, sustainable development, peace, and security in Nigeria. Abdulganiyi, Gbate, and Kaita

(2019) worked on good leadership and good governance in Nigeria.

The review of previous studies revealed that the nexus between chapter two of the 1999 Constitution of the Federal Republic of Nigeria and other Models for good governance and sustainable development has remained uninvestigated. This is the knowledge gap that the study has tried to cover.

## **Governance and Good Governance**

### ***Meaning of Governance***

There are several perspectives to defining governance however with a resolve to achieving a predetermined goal. Etymologically, governance is defined as “a system of administration and rule, practices and processes by which an organization, society or institution is organized, directed and controlled” (Chinnah, 2025). Lukman (2022) defines governance “as the process of governing societies where no single actor holds absolute dominance. Chartered Governance Institute (2022) describes governance as “the framework by which organizations are directed and controlled, encompassing decision-making authority, accountability and ethical conduct”. Also, Siyal and Hobbs (2023) defines “governance as the formation of policies and continuous monitoring to implement them properly by the governing body, highlighting the decision-making process and execution”. Governance has been defined as “the manner in which vested authority uses its powers to achieve institutional objectives including design, implementation, and stakeholders engagement, emphasizing accountability, transparency and predictability” (International Social Security, 2022).

The version of Institute of Directors (2023) is that “governance is characterized by structures and processes that ensure accountability, transparency, responsiveness, rule of law, stability, equity, inclusiveness, empowerment and broad-based participation, reflecting norms, values, and rules of public affairs management. Authors like Skinn (2023) sees governance as “the way rules, norms, and actions structured, and sustained, regulated and held accountable, likening it to the enforcement of law within an organization” and Ribeiro *et al.*, (2023) define governance from the aspect of artificial intelligence (AI) as “the practice of establishing frameworks, policies, and procedures to ensure a responsible, ethical, and safe development and deployment of artificial intelligence systems to promote transparency and accountability”. Edih (2020) considers governance as a function of leadership with

respect to community development. He juxtapositioned the concept of governance, good governance, and communal participation. The author further drew the meaning of Governance from the Oxford Dictionary, which states that “governance is managing resources of a country and the process of governing a nation”. Ogali (2014) cited the definition of governance as defined by the Commission of Global Governance (1995) as “the sum of the many ways individuals and institutions, public and private manage their common affairs”. In contrast, Hanatu (2014) posits that governance is the major problem in Africa. This calls for a thorough understanding of the ideology of governance by the so-called “Leaders’ in the continent of Africa.

It is observed that the series of definitions proffered by scholars are geared towards achieving predetermined objectives - short-term, medium-term, and/or long-term. Some considered governance as the function of a state while others see it from organizational or corporate ideology. The whole essence of governance is to achieve a collective, organizational or state objectives and goals. However, corrupt and wicked leaders disregard the purpose of governance to their shame. To their shame because there is “karma” if not now, it's not too long.

### ***What is Good Governance?***

Edih (2023) opines that good governance is the desire of all nations especially in the 21st century. This is evident as shown in the social media, recently it was NEPALI's revolution led by the youths, Bunkina Faso's radical transformation by Ibrahim Troare, EndSars protest championed by courageous youths at Lekki Toll, Lagos, Nigeria and so forth. These are examples of clamours for good governance in Africa. According to Peters *et al.*, (2022), good governance is seen from several dimensions, such as, one, as the rule of law and fair enforcement of inclusive and collaborative governance structures, two, as the control of corruption to prevent resource wastage, eradicate bribery and corruption (the twin devils), and efficient services and three, ensuring legal integrity and independence. The study of Khosrowyerdi (2022) which compared 117 countries arrived at the indices of good governance to include; democracy in real term, economic management, and public administration. These socioeconomic and sociopolitical indices are sound predictors of a transparent and accountable government. In the words of Lasky(2024), “good governance is an effective framework for how states, organizations, or businesses are governed in line with ethical representations.

The adjective “good” is deliberately attached to ‘governance’ to enrich its meaning and essence in the 1990s (Mohammed and Petri, 2016). Good governance is the “exercise of economic, political, and administrative authority to manage affairs of a country at all levels - the mechanisms, processes and institutions for articulating the interest of the state and satisfying the popular wish of the people (Edih, 2020 ; Ogali, 2014). Salih (2003) notes that good governance is all about economic liberation policies and reforms as well as reducing the influence of government in regulating the economy -deregulation programmes are essentials of good governance. In a similar postulation, Waziri(2009 as cited in Edih , 2020) states that good governance is standing on three pillars, namely; economic, political and administrative. Good governance has been surmised as the ultimate dimension of governance, meaning there diverse levels of governance (Edih, 2020). The contrast of good governance is bad governance and literature is painted with features of bad governance in Africa (Edih, 2022, p. 60 ; Hanatu, 2014). Good governance encourages inclusion by removing avoidable dichotomy while bad governance establishes gaps between the leaders and the led. Chapter two of the 1999 Constitution of Nigeria as amended is a template for good governance (Edih, 2022). Good governance is an exercise of biblical statement paraphrased as ” ... and God saw that it was good...” positing that every intended action should yield and end with good results.

### **Strategies for Institutionalizing Good Governance and Sustainable Development**

Strategies for institutionalization of good governance and sustainable development are the elements, tenets, characteristics of good governance. Literature (Chinnah, 2025; Edih, 2022, 2020) highlighted some of them which are harmonized as follows;

1. **Existence of the Rule of Law :** The rule of law is the foundation of government whether democratic or military. Some may contest the existence of the rule law in a military regime (however, decrees and edicts are the laws in military era). Yes, some , not all, may be draconian hence you may experience continuous overthrow when consciences and consciences are deaden. The constitution must be upheld by the government in a constitutional democracy. Rule of law promote equality, fairness and justice according to Professor A.V. Dicey - a British jurist and philosopher. There is striking connection between or among constitutional

democracy, good governance and sustainable development. The law is regarded as supreme, government and the people are accountable to law, the judicial arm is independent and impartial, individual’s rights are protected, openness in government (Freedom of Information Act), absence of corruption and constitutional separation of powers and other measures that engender good governance.

2. **Citizens’ inclusion and participation:** good governance accommodates the participation of the majority, if not all the citizens in a country. Through credible democratic and electoral processes collective participation is encouraged either directly or through proxy (representation). Babangida (2010) acknowledges the participation of people in making policy and building consensus as pillars of good governance and sustainable development.
3. **Transparency, Accountability and Responsiveness:** In a constitutional democracy, the government is elected on the basis of credible and transparent electoral process. He is therefore accountable to the people by demonstrating transparency and responsiveness. The three co-equal arms of government are separated, though not a water-tight separation of power advocated by the french scholar, Montesquieu in his book entitled ”the Spirit of the Law” in 1748. However, they perform some distinct functions while checking on one another to curtail excesses or abuses. Moderate separation of powers and checks and balances promote transparency, accountability and responsiveness and other ethical conduct in governance. The results of the application of democratic governance is sustainable development. Abubakar and Sanusi (2018) argue that the foremost driver of good governance is accountability. We may differ at juncture because law should have been seen as the basic foundation for good governance and sustainable development. However, Mohammad (2003) classified accountability into; financial, political, administrative, social and ethical accountability.
4. **Vision and Governance structures and Service Delivery :** The import of good governance is to distribute the dividends of a democratic arrangement to the majority of the population. It amounts to efficient service

delivery. This can only be achieved by governance structures coded in a template called the vision of our founding fathers. It is stated as; “... *to live in unity and harmony as one indivisible and indissoluble sovereign nation under God dedicated to the promotion of inter-African solidarity, world peace, international cooperation and understanding...*” being the vision of the Nigerian State (see Preamble LL18, Constitution of the Federal Republic of Nigeria, 1999 as amended).

5. **Consensus Orientation :** Good governance promotes representation at different levels of government or governance. The purpose of election and appointment of officials are to ensure sufficient representation at the points , fora, and hierarchies of making decisions in the interest of the people. Consensus is usually sought in the making and approving and passing as well as assenting to the law by the governor or president, whichever level of government is been considered. Budgets which represents projects to be done is processed through several stages before assenting it into law, and every law is an instrument for social, political and economic engineering and integration and good of the majority- the postulation of Roscoe Pound.

## **Development and Sustainable Development**

### ***Definitions of Development***

We intend to consider cross-section of perspectives to defining the socioeconomic and sociopolitical and sociocultural concept known as “development “. In the words of Chatterjee (2024) the concept “development is a contested phenomenon that has not been accurately defined by scholars rather it is better to fine an indigenous version of development. Chinnah (2025) states that development is centered on improving the lives of people, and measured with clear indices of assessment. Goldin (2023) defines development as “ the process of promoting the quality of human lives and capabilities by raising the level of living, self-esteem, and freedom “. Development in Levine and Michele (2023) is seen as “a multi-dimensional process that creates economic, technological, social and institutional changes and push for increased wealth for the nation and well-being of the people”

### ***Now, how do you see sustainable development?***

Sustainable development is intertwined with governance or good governance. In fact, sustainable development is at the front burner when discussing issues on good governance (Chinnah, 2025). Chinnah emphasized that governance without sustainability of development leads to myriad of challenges - endemic poverty, unabated unemployment, excruciating hunger and malnutrition, systemic institutionalization of corruption, weak institutions, pervasive civil unrest, unimaginable rate of criminality and so on. From this perspective it's inferable that good governance inculcates pillars of sustainable development. According to her, sustainable development has been a serious topic for policy formulators at both national, and international stages, at organizational level, especially with developing countries and NGOs. Swiss Federal Council (2024) describes development as the provision of the basic needs of the people and ensuring good quality life at all times. According to the United Nations (2023), Sustainable development is explained to mean how we must live today if we desire a better life tomorrow.

We can deduce that sustainable development is a progression that is evolving from the current state to a future better state. It touches the lives of people by improving their standard of living. It is that form of improvement that all round transformation of the human life - political, technological social, cultural as well as economic growth. That is why one can argue that development is broad while economic growth is singular and part of the development processes. Leonard (2000) provides a detailed and comprehensive definition or explanations of development and economic growth. The question is how do government sustain growth and development? We added growth because economic growth leads to development.

### **Theories on Good Governance and Sustainable Development**

The study is hinged on two theories: good governance theory and collective stewardship theory of sustainable development.

#### ***Good governance theory***

In line with Chinnah (2025), good governance theory is use to buttress issues on government and administration of the state. It is well entrenched in the field of political science, public administration and governance, policy and development studies and related areas. Good governance theory typifies a comprehensive framework or template that guides and directs policies and programmes of government. The



theory explains the principles, characteristics, institutions, structures, strategies and practices that propel and promote services delivery in effective and efficient manner. It provides institutions and structures that accommodate popular participation, responses, accountable and transparent decision-making process, due diligence and judicious spending of financial resources. In fact, good governance theory ensures that the laws are upheld and the court system are working to enhance justice. It upholds ethical and democratic principles by instituting constitutional democracy. These structures and institutions, strategies and practices are to promote sustainable development for the improvement of citizens' lives. Therefore, the end result of good governance is sustainability of the human life.

#### ***Collective stewardship theory of sustainable development***

Collective stewardship theory of development states that everyone is a steward of all the resources on the earth or planet. Thus, It is expected that everyone will act in such a way to promote the good of everyone in the best interest of the earth or planet (Ozili, 2024). It is believed by some scholars that the resources of the earth or planet belong to everyone (Rosen, 2000; Dietz *et al.*, 2013). Other school of thought is of the view that the resources of the earth should be collectively protected, managed, and preserved for the benefit of all persons (Robinson, 2006; McAfee, 2019).

According to Ozili (2024), collective stewardship theory of sustainable development has some merits. First, all human beings are caretakers of the resources deposit on the earth or planet and they will strive to protect and manage them and second, the theory upholds ethical standards. So, it is believed that people will not be selfish because of their inbuilt moral and ethical behaviour expected of them. This is the area of weakness in the assumptions conceived by the collective stewardship theory of sustainable development. It has been observed that people especially in a plural, secular country like Nigeria, are bound to demonstrate different interests, preferences, and priorities. This is what is prevalent in a democratic arrangement where people on ideal ground vote for the candidates of his or her choice. There is freedom of association, and freedom of speech, freedom of information and the rest as guaranteed by the 1999 constitution of the Federal Republic of Nigeria as amended. The assumption some persons might be selfish is manifesting through the corrupt politicians in government. It is obvious that bad governance initiates obnoxious reforms against popular wish.

These theories will guide us in x-raying the tenets of good governance vis-a-vis the constitutional template for good governance enshrined in chapter two, and also, sought out the elements of bad governance in order to achieve sustainable development in the long run.

## Examples of Frameworks for Good Governance and Sustainable Development

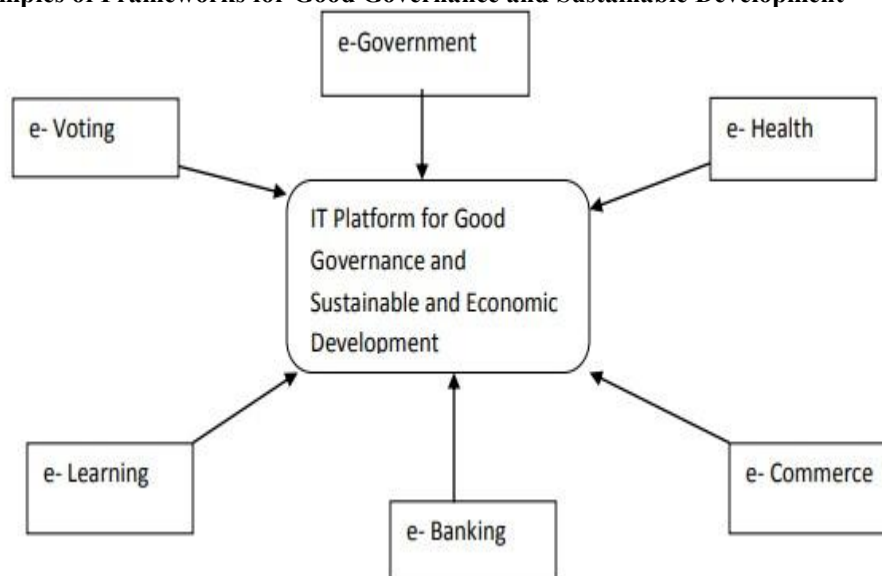


Figure 2a: good governance model using IT as a pillar. Soyemi et al.,(n.d)

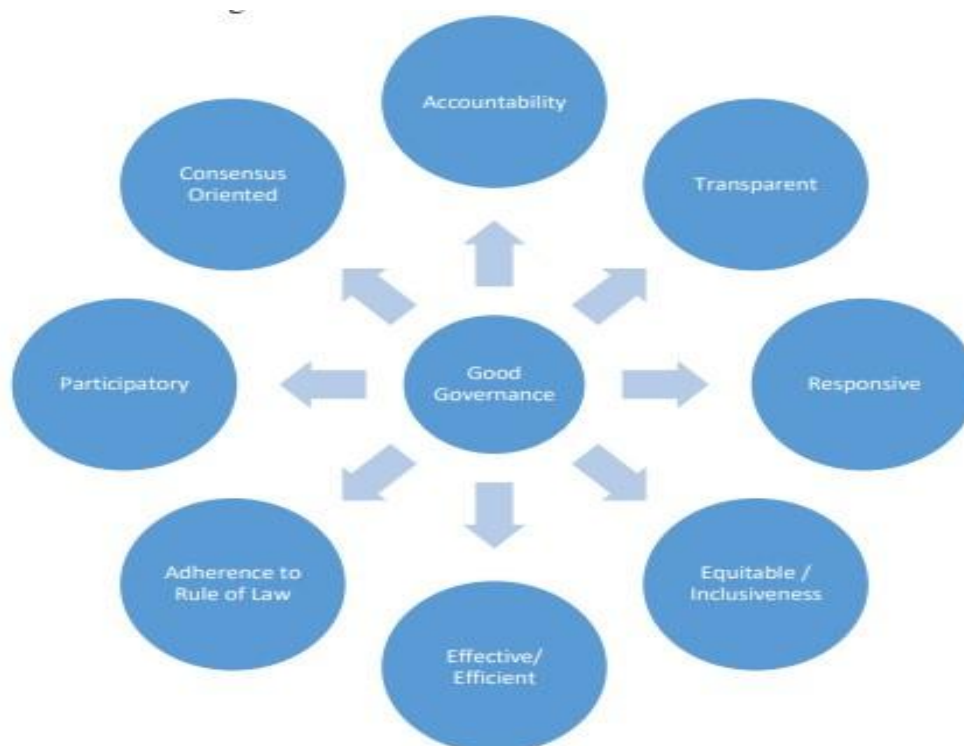


Fig 2b: Framework for Good governance connecting the various strategies. Nwafor, 2023

### Constitutional Provisions and Model For Good Governance in Nigeria

The 1999 constitution of the Federal Republic of Nigeria as amended, specifically in Chapter two provided a template or model for the purposes of good governance for sustainable development in Nigeria. The chapter is boldly entitled as “ **Fundamental Objectives and Directives Principles of State policy**”. This chapter consist of 12 sections, commencing from 13 to 24. We

will endeavour to state these provisions in seriatim as follows;

#### Section 13

*“It shall be the duty and responsibility of all organs of government, and of all authorities and persons exercising legislative, executive or judicial powers to conform to, observe and apply the provisions of this chapter of the constitution”.*

#### Section 14

1. The federal republic of Nigeria shall be a state based on the principle of democracy and social justice
2. It is hereby accordingly declared that
  - a) Sovereignty belongs to the people of Nigeria from whom the government through this constitution derives all its powers and authority
  - b) The security and welfare of the people shall be the primary purpose of government
  - c) The participation by the people in their government shall be ensured in accordance with the provisions of this constitution.

#### Section 15

1. The “motto” of the Federal Republic of Nigeria shall be unity, peace and progress.
2. Accordingly, national integration shall be actively encouraged whilst discrimination on the grounds of place of origin, sex, status, ethnic, or linguistic association or ties shall be prohibited....
3. The state shall abolish all corrupt practices and abuse of powers

#### Section 16

1. The state shall within the context of the ideals and objectives for which provisions are made in this constitution
  - a) Harness the resources of the nation and promote national prosperity, an efficient, a dynamic and self-reliant economy
  - b) Control the national economy in such a manner as to secure the maximum welfare, freedom and happiness of every citizen on the basis of social justice, equality and opportunity
- 2a. The promotion of a planned and balanced economic development....
- 2d. That suitable and adequate shelter, suitable and adequate food, reasonable national minimum living wage, old age care and pensions and unemployment, sick benefits and welfare of the disabled are provided for all citizens...

#### Section 17

1. The state social order is founded on ideals of freedom, equality and justice
2. In furtherance of the social orders ;
  - a) Every citizen shall have equality of rights, obligations and opportunities before the law
  - b) The sanctity of the human person shall be recognized and human

dignity shall be maintained and enhanced...

- c) The independence, impartiality and integrity of courts of law and easy accessibility thereto shall be secured and maintained.

#### Section 18

1. Government shall direct its policy towards ensuring that there are equal and adequate educational opportunities at all levels
2. Government shall strive to promote science and technology
3. Government shall strive to eradicate illiteracy and to this end government shall as and when practicable provide
  - a). Free, compulsory and universal primary education
  - b). Free secondary education
  - c). Free University education, and
  - d). Free adult literacy program

#### Section 19

The foreign policy objectives shall be

- a) Promotion and protection of national interest
- b) Promotion of African integration and support for African unity...
- d) Respect for International Law and treaty, obligations...
- e) promotion of a just world economic order

#### Section 20

*“The state shall protect and improve the environment and safeguard the water, air and land, forest, and wildlife”*

#### Section 21

*“The state shall*

- a) *Protect, preserve and promote the Nigerian cultures which enhance human dignity and are consistent with the fundamental objectives as provided in this chapter*
- b) *Encourage development of technological and scientific studies which enhances cultural values “*

#### Section 22

*“The Press, Radio, Television and other agencies of the mass media shall at all times be free to uphold the fundamental objectives contained in this chapter and uphold the responsibility and accountability of the government to the people”.*

#### Section 23

*“The national ethics shall be Discipline, Integrity, Dignity of Labour, Social justice, Religious tolerance, Self-reliance and Patriotism “ , and*

## Section 24

“It shall be duty every citizen to;

- a) Abide by this constitution, respect its ideals and its institutions, the national flag, the national anthem, the national pledge and legitimate authorities
- b) Help to enhance the powers, prestige and good name of Nigeria, defend Nigeria and render such national services as may be required...
- c) Declare his income honestly to appropriate and lawful agencies and pay his tax promptly.

### ***Limitations To the Enforcement of Constitutional Model for Good governance***

It has been identified that the two ouster clauses in the 1999 constitution of the Federal Republic of Nigeria as amended hinder the enforcement of the fundamental objectives and derivative principles of state policy (Edih, 2022). The two ouster clauses are sections 6(6) and 308. Accordingly, they are provisions that guarantee the non-justiciability of chapter two in a competent law court.

### **Section 6(6)**

“provides that the judicial powers vested in accordance with the foregoing provisions of this section shall not except as otherwise provided by this constitution extend to any issue or question as to whether any act of omission by any authority or person or as to whether any law or any judicial decision is in conformity with the fundamental objectives and directive principles of state policy set out in chapter two of this constitution.

### **Section 308**

“provides as follows

1. Not withstanding anything to the contrary in this constitution, but subject to subsection 2 of this section
2. a) no civil or criminal proceedings shall be instituted or continued against a person during his period of office
3. b) a person to whom this section applies shall not arrested or imprisoned or imprisoned during that period either on pursuance of the processes of any court or otherwise and
4. c) no process of any court requiring or compelling the appearance of a person to when this section applies shall be applied for or issued.

### **Challenges of Good Governance and Sustainable Development in Nigeria**

Good governance is a mirage in Nigeria. It's likened to the statement “the more you look the less you see”. The actions of governance, whether during civilian government or military regime, in

reality do not conform to the template for good governance as adumbrated in literature and chapter two of the 1999 constitution. There are multiple challenges frustrating the envisioned good governance framework squarely enshrined as Chapter two of the 1999 Constitution of Nigeria as amended.

1. **Weak Institutions :** Institutions of are structures or agencies, ministries, parastatals, or organizations that deliver services to the people. Government set up institutions like the Judiciary, the legislature, the military, police, EFCC, ICPC, INEC, CBN, Educational bodies, NYSC, to mention but a few to execute its plans and programmes for the nation. These institutions are manned by both the public and civil servants. They are empowered to enforce the rules and regulations impartially. The problem of these institutions is weakness because of unabating corruption, and inefficiency. When an organization lacks the capacity, legitimacy and resources to deliver public services it is regarded as weak Institution (Cambridge University Press, 2022). According to Mthwakazi (2022), a weak institution is characterized by inability to enforce the rules, abuse of discretionary grace, and abrupt changes in the rules and regulations to suit personal gain.
2. **Flawed Electoral Processes :** The common statement in Nigeria during period of electoral transition is “go to court”. The basis of a credible and transparent election is credible and transparent electoral process. A corrupt system must necessarily produce corrupt results. It affirms the latin maxim, “*Nemo dat non qua habet*” translated as you cannot give what you don't have. Therefore, a flawed electoral process is a disaster to good governance and sustainable development.
3. **Military incursion into politics for too long a time :** The political odyssey of Nigeria is not complete without talking about the incursion of the military into politics. In fact, we can say that the shortlived administration of Tafawa Balewa/Nnamdi Azikiwe, 1960-64 ; Yar'adua/Jonathan, 2007-2011; Jonathan/Sambo, 2011-2015; and Tinubu/Shettima, 2023-2025 were the civilian governments that ruled Nigeria for about 15 years which the military junta ruled for about 40 years. The invasion by the military is a breach to constitutional democracy. The Nigerian polity is suffering from the woes of

military regime because the constitution is suspended and the country is ruled by the Supreme Military Council through decrees and edicts.

4. **Endemic and systemic bribery and corruption :** Bribery and corruption are unnecessary evil. They are the twin devils that wrecked and weakened the sound institutions handed over to us by the former colonial master. The Judiciary which ought to be the hope of the common is no longer common. Election cases/petitions are won by the highest bidder. Their judgements cannot be predicted any longer because the order or sequence of precedence is never followed. The supreme court had overruled itself on several occasions. Conflicting judgements everywhere and it is worst with courts of coordinate jurisdiction issuing contrasting injunctions. The compromise of INEC is another terror during the conduct of elections in the country. Their officials are not neutral as expected but do their master's bidding and results are declared before completion of the voting process. It is a misnomer and great disservice to the Nigerian State.
5. **Failure of the Judiciary :** Good governance is established through an independent and impartial judiciary. Its absence contrast the principles of good governance and sustainable development.
6. **Compromise of the legislature :** The legislature makes and amend laws, performs oversight functions and weeps the executive if need be by impeachment. The legislature also approves the suspension of an elected state government where the conditions warranting it are obvious. Governor Sim Fubara of River State was suspended for six months and reinstated after its expiration on 18 September, 2025 for the breakdown of governance, law and order in the state. Where the legislature fails to carry out its constitutional functions and translates to a "rubber-stamp" chamber, good governance and sustainable development will only be seen on paper - budget and the constitution.
7. **Excesses of Executive Powers and rascality :** Scholars are canvassing for constitutional restructuring so as to wittle down the overbearing powers of the Executive Arm of the government. The President of Nigeria and the Governors of the 36 states are too powerful to safeguard the independence and impartiality of the Judiciary. In practice, the three arms of

governments are not co-equal but mere theoretical and academic ideology. There is that tendency to abuse the office at the expense of good governance and sustainable development.

8. **Poverty and Hunger in the Land :** Poverty and hunger have been weaponized by those in government to subjugate the vast population in the country. They are easily manipulated with crumbs by officials in power. Especially at election time, vote buying becomes the norm and the people no longer look at credible candidates but the "green envelope" that can only sustain a person for a day.
9. **Ethnic rivalry and religious inclinations:** Disunity due to entrenched ethnic rivalries and diverse religious inclinations are the major bane of good governance in Nigeria. The five major ethnic nationalities - Ijaw, Fulani, Hausa, Yoruba, and Ibo, are always at loggerhead base on political differences, religious beliefs and practices. The minority groups are crying wolf- marginalization and undevelopment.
10. **Illiteracy :** The population of Nigeria is summed to be about 120million people and over 70% is illiterate. Good governance is hardly practiced in a society that is majorly illiterate.

### Conclusion and Recommendations

The study provided a novel insight into good governance and sustainable development by comparing chapter two of the 1999 constitution of the Federal Republic of Nigeria and other models or frameworks for good governance. It is posited that chapter two of the 1999 constitution is a model for good governance and that there are no dissimilarities except for inclusion of the good governance framework into the constitution of Nigeria. The study reaffirm that law is an instrument for social engineering, political restructuring and administration of justice in the society. Drawing the analogy between good governance and sustainable development, it is obvious that both ideologies can be achieved by tenaciously enforcing the tested theories, models and tenets of good governance in a modern state. Also, the study revealed that based on the impediments, institutionalization of good governance and sustainable development in Nigeria are mountainous and that the usual political jamboree and rhetorics during campaigns for change of government are mere political charades.

Thus, the study recommends the following as strategies for good governance and sustainable development ;

1. **The Law should be held supreme:** The institutions that enforce the laws, rules and regulations, policy and programmes of the government should be strengthened to uphold the law. The constitution is supreme and no government, and its officials are above the law. Chapter two of the 1999 constitution and the annual budget are part of the law(constitution) should be respected and implemented to the “spirit and letter”.
2. **Independence of the Judiciary is not negotiable :** The role of the Judiciary is to adjudicate on disputes between the federal government and state government, government and institutions and private persons, institutions and private persons, private person versus private person. Independence and impartiality of the Judiciary will guarantee the exercise of these sacred roles played to enhance social rejuvenation, peace and order in the society. In that respect, the independence and impartiality of the Judiciary is not negotiable.
3. **Credible and transparent election :**The foundation for credible and responsible government is a credible and transparent electoral process. Government should ensure that Independent Electoral Commission is truly independent and impartial and neutral in the discharge of her mandate. The provisions of the Electoral Act and the Constitution must be procedurally followed. This will restore the trust and reliance on the process and reduce election petitions after declaration of results. INEC personnel should undergo regular training and orientation on free and fair elections and anyone found culpable should be sanctioned according to the law.
4. **Responsible Electoral Umpires :** The institutions are the personnel that manned the process and executive policies and programmes, not the physical structures. There electoral umpires should play safe by being neutral before, during and after the elections. Any measure that will ensure their neutrality and regain public trust should be put in place.
5. **Neutrality of Law Enforcement Agencies :** The Army, Navy, Air force and Police should be manifestly neutral before, during and after election. Ordinarily, the military should not be part of elections because elections are not war time. The police should be trained and drafted and assisted by local vigilante where there is shortage of manpower.
6. **Credible candidates :** Political parties INEC , the government should ensure that candidates running for both elective or to be appointed must have clean records. Every necessary step should be taken to check and ascertain the credibility of the candidates featured by the parties.
7. **Demolition of the Ouster provisions’ mountain in the constitution :** The two ouster provisions in the constitution should be expunged to allow citizens whose rights are infringed by the government for failing to uphold chapter two of the constitution can seek for redress. The type of sanction to be meted on the culpable government officials should not be that of conviction but a moderated one like giving an award to the victim in this circumstances. This will make the government to be accountable and more responsible to good governance
8. **Strengthened Institutions :** Institutions are the frameworks for delivery of public services and executing projects to the people. A strong and virile institutions are pillars for good governance and sustainable development. This could be achieved by training and retraining, aggressive orientation and reorientation, and a better living wage and allowances as remuneration to motivate workers.
9. **Mass Education :** Education is a tool for governance. Policies and programmes are easily communicated in an enlightened society because literacy is the bedrock for sustainable development in advanced countries.
10. **Punishment of Persons involved in Electoral malpractices :** Punishment of criminal elements is part of the law. Every offence committed has corresponding punishment in the law that created the offence. Apart from electoral malpractices, those who perpetrate insecurity in the country should be dealt with according to law.
11. **Implementation of Budget :** Implementation of budgets will create job opportunities for the teeming unemployed population of youths in country. Constitutionally, security and welfare of the people is the primary function of government.

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## Good Governance and Strategies for Sustainable Development in Nigeria: Emphasis on Lagos and Delta States

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### Abstract

*Governance shortcomings—like corruption, fragile institutions, minimal citizen participation, and poor policy execution—persist in hindering sustainable development in Nigeria. This research explores methods to enhance governance in Lagos and Delta States following COVID-19, emphasizing accountability, transparency, citizen engagement, institutional capacity, and collaborative governance. A descriptive survey utilizing mixed methods was carried out, engaging 300 participants and 20–30 key informants, through structured questionnaires, interviews, and document analysis. Quantitative analysis utilized descriptive and inferential statistics, whereas qualitative data was subjected to thematic content analysis. Results show strong perceptions of accountability ( $M = 4.20$ ) and sustainable development results ( $M = 4.00$ ), while revealing moderate degrees of transparency ( $M = 3.80$ ) and citizen involvement ( $M = 3.90$ ). The findings indicate that governance elements profoundly influence sustainable development results and emphasize contextual difficulties in executing reforms. The research suggests utilizing AI-powered citizen engagement platforms, blockchain transparency systems, and state-level councils for monitoring sustainable development to improve governance efficiency. By combining empirical findings with actionable strategies, this study offers a framework for context-aware governance reforms that can promote sustainable development in Nigeria.*

**Keywords:** Governance, Sustainable Development, Accountability, Transparency, Citizen Participation, Lagos State, Delta State.

### Introduction

Effective governance — characterized by transparency, accountability, adherence to the law, participation, and responsiveness — is essential for attaining sustainable development. In Nigeria, ongoing governance issues (corruption, ineffective institutions, inadequate policy execution, and minimal citizen participation) have hindered advancements in essential areas like health, education, environment, and infrastructure. Recent research conducted by Nigerian academics indicates that these shortcomings diminish institutional performance, erode public confidence, and restrict citizens' capacity to hold officials accountable, ultimately hindering sustainable development initiatives. Issues in environmental and urban governance—ineffective regulation enforcement, inadequate urban planning, and limited community engagement—have exacerbated pollution, deforestation, and the depletion of public resources in numerous cities and resource-abundant areas. Delta State's struggles with resource management issues and Lagos's swift urban growth both demonstrate how governance failures lead to environmental hazards and missed development prospects.

The COVID-19 pandemic revealed and intensified these weaknesses in governance. Nigeria's inconsistent pandemic response (poor coordination, deficiencies in health infrastructure, and unequal distribution of resources) underscored the critical necessity for governance reforms that enhance resilience, accountability, and service delivery both during crises and in regular circumstances. Numerous recent Nigerian studies on the post-COVID period advocate for enhancing state capacity and improving public administration to ensure recovery and long-term sustainability. Even with this agreement, reforms have been inconsistent and frequently do not tackle local conditions. Researchers from Delta and various Nigerian settings have emphasized the necessity for context-aware approaches — such as enhanced internal regulations, better citizen involvement, and cooperation across institutions — to ensure governance fosters sustainable, fair development. This research addresses that necessity by analyzing governance approaches adapted to Nigeria's socio-political context, focusing specifically on Lagos and Delta states in the period following COVID

### Research Objectives

6. To analyze ways to enhance accountability, transparency, and citizen involvement in Nigeria to better governance results for sustainable development (with a specific focus on Lagos and Delta states).
7. To assess the institutional capability and cooperative governance structures that can tackle socio-economic and environmental issues in the post-COVID environment.

### Research Questions

12. To what extent can accountability, transparency, and citizen engagement be enhanced in Lagos and Delta states to promote sustainable development post-COVID-19?
13. What strategies for institutional capacity-building and collaborative governance are the most practical and impactful in addressing socio-economic and environmental challenges in the two states during the post-COVID period

### Research Hypotheses

3.  $H_{01}$  (Null): There is no significant relationship between accountability, transparency, and citizens' participation and the promotion of sustainable development in Lagos and Delta States post-COVID.  
 $H_{11}$  (Alternative): There is a significant relationship between accountability, transparency, and citizens' participation and the promotion of sustainable development in Lagos and Delta States post-COVID.
4.  $H_{02}$  (Null): Institutional capacity and collaborative governance have no significant effect on addressing socio-economic and environmental challenges in Lagos and Delta States post-COVID.  
 $H_{12}$  (Alternative): Institutional capacity and collaborative governance have a significant effect on addressing socio-economic and environmental challenges in Lagos and Delta States post-COVID.

### Scope and Limitations

The research centers on Lagos State (Nigeria's major city and economic center) and Delta State (a resource-abundant, ecologically delicate area). Post-COVID recovery and governance modifications (approximately 2020 to current). Effective governance practices (accountability, transparency, engagement), institutional capabilities, and collaborative governance in relation to sustainable development results

(economic, social, environmental). Results will be primarily relevant to Lagos and Delta situations and might not entirely apply to all Nigerian states with varying political economies. Post-COVID administrative data availability and quality may differ among agencies; primary data (interviews/surveys) could be influenced by response bias. Governance reforms and political developments could take place throughout the study period; the research will record existing conditions during data gathering and validate them with recent literature

### Literature Review

#### Conceptual Framework

Good governance has become a vital factor for sustainable development, especially in nations such as Nigeria where obstacles in governance remain. It pertains to how power and resources are administered to realize development results, directed by principles like transparency, accountability, participation, rule of law, and responsiveness (Nag, 2018; Addink, 2018). In Nigeria, this idea extends past administrative efficacy to tackling systemic corruption, fragile institutions, and unequal resource allocation that obstruct progress (Agagu, 2010; Ezeani, 2006).

#### Good Governance and Sustainable Development

Sustainable development, according to the Brundtland Commission, refers to progress that satisfies current requirements while ensuring future generations are not jeopardized. To attain this, it is essential to implement governance frameworks that encourage fairness among generations, forward-looking strategies, and the prudent utilization of resources (Wardhani, Rossieta, & Martani, 2017). Effective governance establishes the institutional basis for this by promoting inclusive development, social equity, and environmental responsibility. In Nigeria, data indicates that ineffective governance frequently results in policy shortcomings, inadequate service delivery, and unfair resource allocation (Okeke, 2014).

#### Principles of Accountability and Transparency

Responsibility and openness are fundamental to efficient governance. Parkhurst (2016) emphasizes the significance of evidence-based policymaking for enhancing legitimacy and public trust. In Nigeria, where political patronage and corruption hinder development, incorporating evidence-based decision-making is essential for effective resource management and trustworthy policies (Arowolo, 2017)

## Decentralization and Local Participation

Decentralization is broadly acknowledged as an approach to enhance governance. Makara (2018) suggests that decentralizing authority improves both responsiveness and accountability. Nigerian academics also highlight that decentralisation can enhance inclusiveness and tackle regional inequalities by adapting development to local requirements (Ezeani, 2006; Agagu, 2010). Nonetheless, achievement relies on organizational capability, political commitment, and changes that protect local independence while adhering to national objectives.

## Governance for Environmental and Social Sustainability

Effective governance also encompasses environmental stewardship and social fairness. Aqorau, Bell, and Kittinger (2018) highlight the importance of inclusiveness, teamwork, and flexible governance in managing resources. In the context of Nigeria, this means incorporating environmental protection into development strategies, particularly due to the ecological challenges posed by oil exploration, deforestation, and climate change (Ikelegbe, 2005).

### Conceptual Framework: Good Governance and Sustainable Development in Nigeria

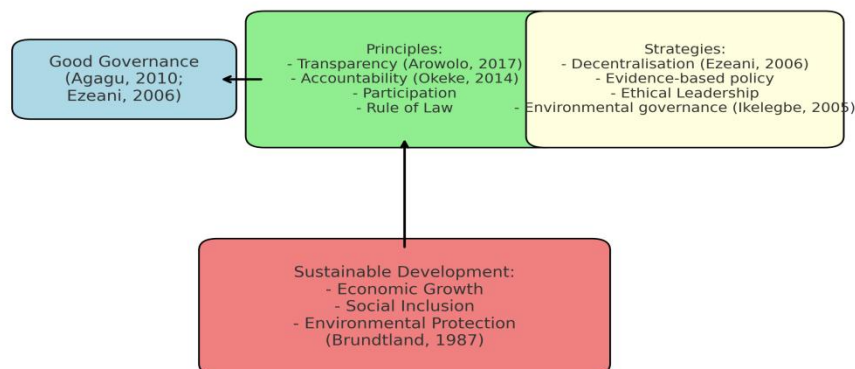


**Figure 1**

Conceptual Framework linking Good Governance to Sustainable Development in Nigeria

## Principles of Good Governance

Good governance is essential for sustainable development, especially in situations like Nigeria, where governance issues have traditionally hindered socio-economic advancement. Its principles are interconnected, offering a structure for careful resource management, social unity, and successful development results. Essential principles encompass transparency, accountability, participation, the rule of law, responsiveness,

## Ethical Leadership and Institutional Reforms

Responsible and principled leadership is crucial for maintaining governance reforms. Merker and Peck (2019) underscore trustee governance, focusing on fiduciary duties, stakeholder involvement, and ongoing assessment. Nigerian academics similarly emphasize that reforms should focus on leadership integrity, strengthening institutions, and participatory systems to secure sustainable development (Arowolo, 2017; Okeke, 2014).

## Synthesis

The framework for effective governance and sustainable development in Nigeria is founded on merging normative values—like transparency, accountability, inclusiveness, and rule of law—with practical approaches such as decentralisation, evidence-driven policymaking, environmental stewardship, and ethical leadership. In this context, governance is dynamic, necessitating ongoing adjustments to Nigeria's socio-political circumstances via institutional changes and inclusive processes (Addink, 2018; Agagu, 2010). If these principles are not integrated, sustainable development goals will stay beyond reach.

equity and inclusiveness, as well as effectiveness and efficiency.

## Transparency

Transparency guarantees that choices are executed and followed based on established guidelines, with affected stakeholders having access to pertinent information (Said, Alam, & Khalid, 2016). In Nigeria, transparency reduces corruption, boosts public confidence, and fosters integrity in managing public sectors. Transparent governance

empowers citizens to hold leaders responsible, strengthening democratic systems and promoting sustainable development (Nasrallah & Khoury, 2021).

### **Accountability**

Accountability indicates the responsibility of public officials and institutions to explain their actions and decisions to the populace (Khotami, 2017). In Nigeria, poor institutions and pervasive corruption frequently weaken accountability. Establishing accountability systems, backed by legal structures, promotes effective resource utilization and boosts public trust. Enhancing accountability promotes citizen participation and supports sustainable development efforts (Hopper, 2017).

### **Participation**

Participation requires including all stakeholders, particularly marginalized groups, in the decision-making process. Inclusive governance guarantees that policies represent various societal requirements, minimizing the likelihood of marginalization and conflict (Stojanović, Ateljević, & Stević, 2016). Participatory strategies improve social fairness, economic growth, and community unity, essential for sustainable development (Cárcaba et al., 2017; Nasrallah & Khoury, 2021).

### **Rule of Law**

The rule of law guarantees that legal systems are equitable, applied without bias, and that justice is available to all (Said et al., 2016). Enhancing the rule of law in Nigeria is essential for safeguarding human rights, reducing corruption, and fostering a stable climate for investment. Efficient legal frameworks support social stability, economic advancement, and sustainable progress (Phillips, Hailwood, & Brooks, 2016).

### **Responsiveness**

Responsiveness denotes the ability of governance bodies to meet public demands promptly and adjust to evolving situations (Stojanović et al., 2016). Improving responsiveness in Nigeria necessitates institutional changes to enhance service delivery and enforce policies effectively. Responsive governance enhances social welfare and speeds up the advancement of sustainable development objectives (Cárcaba et al., 2017).

### **Equity and Inclusiveness**

Equity and inclusivity guarantee that every individual in society can engage in development and obtain resources (Stojanović et al., 2016). Inclusive governance enhances social unity, reduces conflicts, and harnesses the capabilities of every citizen for enduring development (Phillips et al., 2016; Said et al., 2016).

### **Effectiveness and Efficiency**

Effectiveness and efficiency denote the capacity of governance institutions to fulfill societal objectives while maximizing resource utilization (Khotami, 2017). In Nigeria, inefficiency is diminished by corruption, mismanagement, and neopatrimonial behaviors (Hopper, 2017). Enhancing institutional capabilities, simplifying procedures, and implementing performance evaluation systems improve governance results and guarantee that development efforts achieve optimal effects (Nasrallah & Khoury, 2021).

Overall, these principles—transparency, accountability, participation, rule of law, responsiveness, equity and inclusiveness, and effectiveness and efficiency—form a cohesive framework crucial for sustainable development in Nigeria. Focusing on and implementing these principles tackles structural governance issues and offers a guide for transforming public institutions to attain sustainable development results.

### **New Public Management Theory**

The New Public Management (NPM) theory offers a structure for improving governance strategies essential for sustainable development in Nigeria. Focused on efficiency, responsibility, and market-driven reforms, NPM promotes changing public sector management to address modern governance issues (Mira & Hammadache, 2017; Maryam, 2017). It highlights decentralization, performance evaluation, and citizen-focused service provision to tackle inefficiencies and institutional flaws that have traditionally limited Nigeria's progress. A fundamental tenet of NPM is the transition from strict bureaucracies to adaptable, outcome-focused systems. In Nigeria, where public management frequently encounters inefficiency and corruption, methods like performance contracts, outsourcing, and public-private partnerships can improve transparency, maximize resources, and foster an environment conducive to sustainable economic and social growth (Maryam, 2017; Li, 2020). This strategy connects public institutions with the comprehensive requirements of sustainable development spanning various sectors.

NPM furthermore advocates for citizen-focused governance, enhancing service delivery, trust, and involvement, which are essential for inclusive progress (Maryam, 2017; Wang, Zhang & Li, 2024). Programs like e-governance and decentralized services can broaden access, lessen corruption, and improve social equity. Additionally, incorporating technological advancements such as artificial intelligence and digital frameworks enhances data-driven policies, city planning, and resource management, further promoting Nigeria's sustainable development objectives (Wang, Zhang & Li, 2024; Li, 2020). In areas like health, NPM's

focus on measuring performance and managing outcomes can boost service efficiency, rectify resource misallocation, and aid in meeting SDG targets, thereby improving human capital and economic productivity (de la Salud, 2018; Oniang'o, 2016). Nonetheless, NPM reforms should be tailored to Nigeria's socio-political landscape, enhancing efficiency through robust institutions, civic participation, and inclusive governance to guarantee social justice and sustainability (Desa, 2016; Maryam, 2017).

In conclusion, NPM provides a strong theoretical and practical basis for effective governance in Nigeria. Through promoting efficiency, responsibility, and services centered on citizens, it corresponds with the 2030 Sustainable Development Agenda. The successful execution necessitates the combination of technological advancements, enhancement of institutional capabilities, and inclusive governance to attain fair and sustainable development results (Wang, Zhang & Li, 2024; Mira & Hammadache, 2017).

## NEW PUBLIC MANAGEMENT THEORY

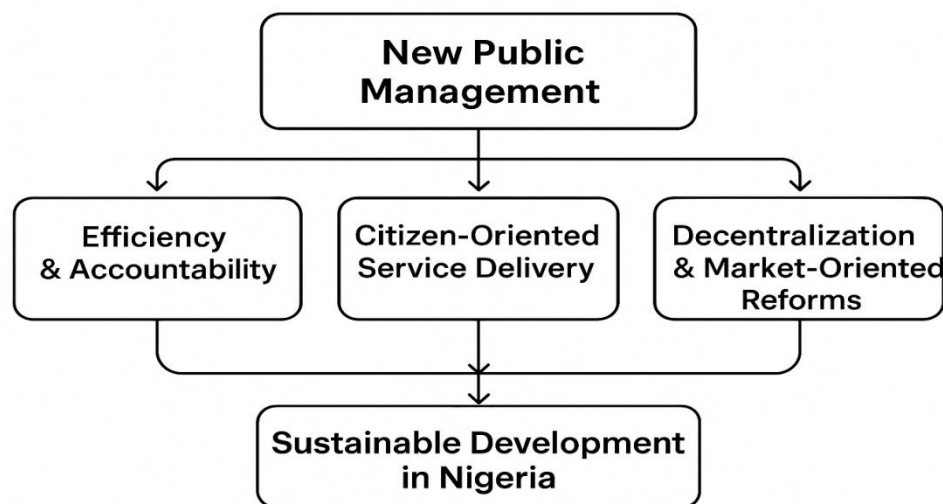


**Figure 2**

New Public Management Theory and how it affects sustainable development. *Author's work.*

### Empirical Studies on Governance in Nigeria

Empirical research highlights the crucial importance of governance in promoting sustainable development in Nigeria. Fragile governance frameworks—marked by corruption, organizational inefficiency, and restricted public involvement—continue to pose significant obstacles to reaching the Sustainable Development Goals (SDGs) (Mukoro, 2021; Oladipo, 2018; Erude, 2024). Studies show that governance structures that encourage transparency, accountability, participatory decision-making, and the involvement of multiple stakeholders are crucial for successful policy execution and climate initiatives (Ogunyemi, 2019; Mukoro, 2021). Nonetheless, issues like political instability, inconsistent policies, and insufficient institutional capacity persist in hindering governance results (Oladipo, 2018; Erude, 2024).

Studies highlights the incorporation of knowledge systems and organizational learning into governance structures. Mukoro (2021) and Oladipo (2018) contend that reforms in institutions, enhancing local governance, and ensuring policy coherence are essential for making decisions based

on evidence. Erude (2024) emphasizes the importance of civic participation in improving accountability, transparency, and responsiveness in Nigeria's public service sector. Research indicates that encouraging citizen involvement, fair resource allocation, and inclusive stakeholder engagement greatly enhances governance efficiency, thereby strengthening resilience in social, economic, and environmental domains (Ogunyemi, 2019; Erude, 2024; Mukoro, 2021).

In this regard, empirical research in Nigeria demonstrates that effective governance is essential for sustainable development. To achieve the SDGs, it is essential to implement thorough strategies that encompass institutional reform, civic involvement, knowledge assimilation, stakeholder engagement, and policy consistency. Customized governance strategies that align with Nigeria's local settings can guarantee that development benefits are inclusive, robust, and environmentally sustainable (Erude, 2024; Mukoro, 2021; Oladipo, 2018; Ogunyemi, 2019).

## Research Method

The study employs a mixed-methods descriptive survey design to investigate governance and sustainable development in Lagos and Delta States post-COVID. The population covers public officials, civil society actors, and citizens, with a sample of about 300 survey respondents (150 per state) and 10–15 key informants per state, selected using purposive and stratified sampling. Data will be collected through structured questionnaires, key informant interviews, and document reviews. Quantitative data will be analyzed using descriptive and inferential statistics (e.g., chi-square, regression), while qualitative data will be examined through thematic content analysis.

## Ethical considerations

Data used in this study were obtained by consent of the respondents. Voluntary participation, confidentiality of responses, and the exclusive use of data for academic purposes, was clearly stated before eliciting of data.

## Data Analysis and Results

### 1. Descriptive Statistics

The study engaged 300 respondents (150 from Lagos State and 150 from Delta State). Responses were analyzed to capture perceptions of accountability, transparency, citizens' participation, institutional capacity, collaborative governance, and sustainable development.

| Variable                      | Mean | Std. Dev. | Interpretation         |
|-------------------------------|------|-----------|------------------------|
| Accountability                | 4.20 | 0.60      | High perception        |
| Transparency                  | 3.80 | 0.70      | Moderate perception    |
| Citizens' Participation       | 3.90 | 0.80      | Moderate participation |
| Sustainable Development Index | 4.00 | 0.60      | Positive perception    |

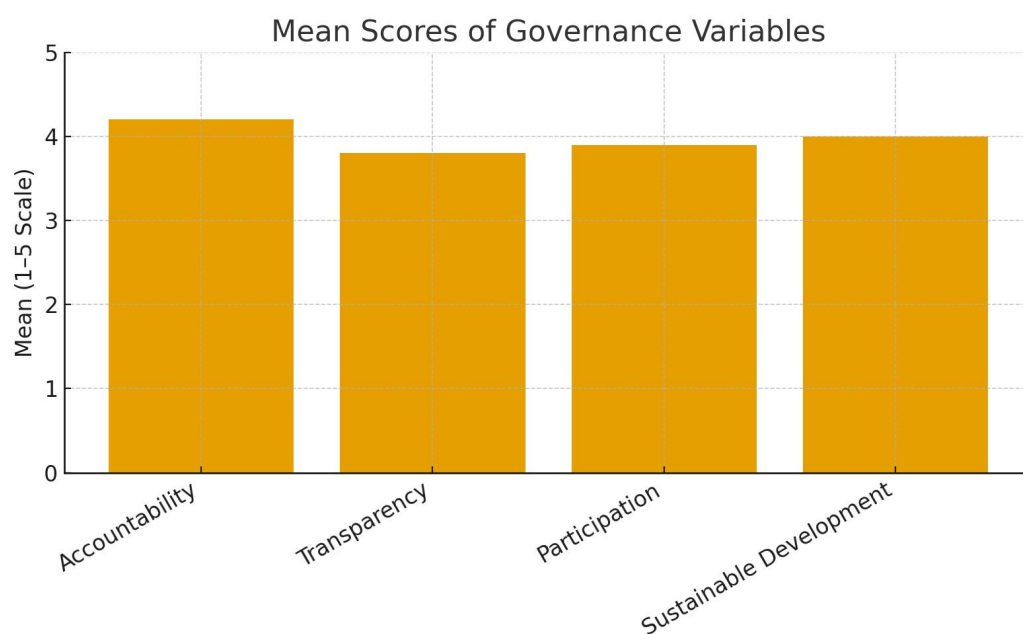


**Figure 3**

Mean Scores of Governance Variables

*Note.* Accountability ( $M = 4.2$ ), Transparency ( $M = 3.8$ ), Participation ( $M = 3.9$ ), and Sustainable Development ( $M = 4.0$ ). Scale ranged from 1 (strongly disagree) to 5 (strongly agree).

## Test of Hypotheses

### Hypothesis One

$H_{01}$ : There is no significant relationship between accountability, transparency, and citizens'

participation and the promotion of sustainable development in Lagos and Delta States post-COVID.

$H_{11}$ : There is a significant relationship between accountability, transparency, and citizens' participation and the promotion of sustainable development in Lagos and Delta States post-COVID.

**Method:** Pearson correlation and multiple regression were employed.

| Predictor            | Beta ( $\beta$ ) | t-value | p-value |
|----------------------|------------------|---------|---------|
| Accountability       | 0.35             | 3.52    | 0.001*  |
| Transparency         | 0.28             | 2.94    | 0.004*  |
| Participation        | 0.32             | 3.11    | 0.002*  |
| Model R <sup>2</sup> | 0.56             |         |         |

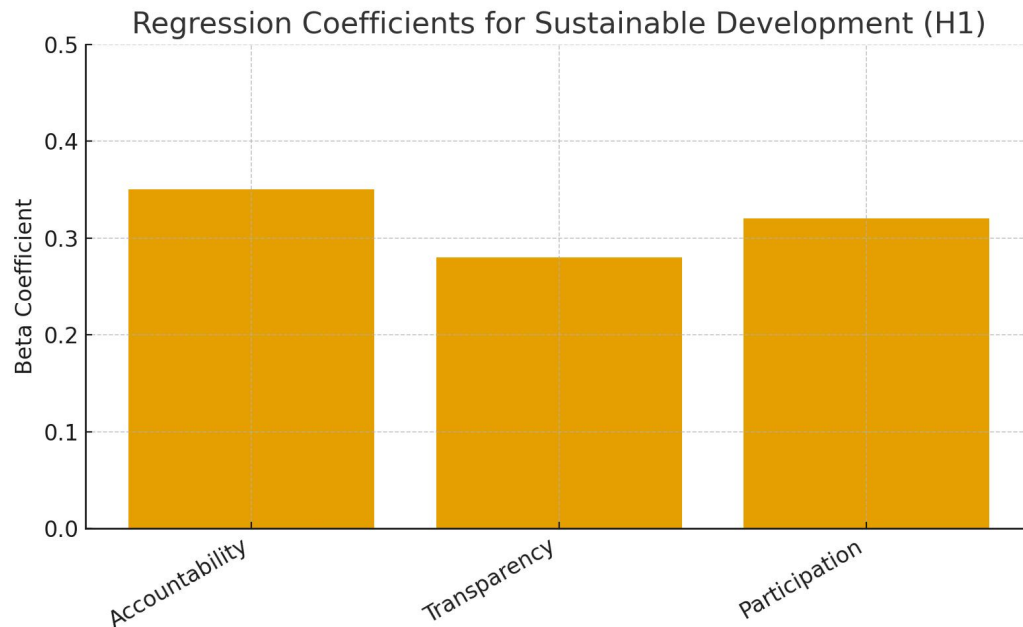


**Figure 4**

Regression Coefficients for Sustainable Development (H1)

*Note.* Accountability ( $\beta = .35$ ,  $p = .001$ ), Transparency ( $\beta = .28$ ,  $p = .004$ ), Participation ( $\beta = .32$ ,  $p = .002$ ).  $p < .05$  indicates statistical significance.

**Interpretation:** Accountability, transparency, and citizens' participation each have a significant positive effect on sustainable development. The null hypothesis ( $H_{01}$ ) is rejected, while the alternative hypothesis ( $H_{11}$ ) is accepted.

#### **Hypothesis Two**

$H_{02}$ : Institutional capacity and collaborative governance have no significant effect on addressing socio-economic and environmental challenges in Lagos and Delta States post-COVID.

$H_{12}$ : Institutional capacity and collaborative governance have a significant effect on addressing socio-economic and environmental challenges in Lagos and Delta States post-COVID.

**Method:** Multiple regression and chi-square test were used.

| Predictor                | Beta ( $\beta$ ) | t-value | p-value |
|--------------------------|------------------|---------|---------|
| Institutional Capacity   | 0.40             | 4.10    | 0.000*  |
| Collaborative Governance | 0.33             | 3.45    | 0.001*  |
| Model R <sup>2</sup>     | 0.62             |         |         |

Regression Coefficients for Socio-Economic & Environmental Challenges

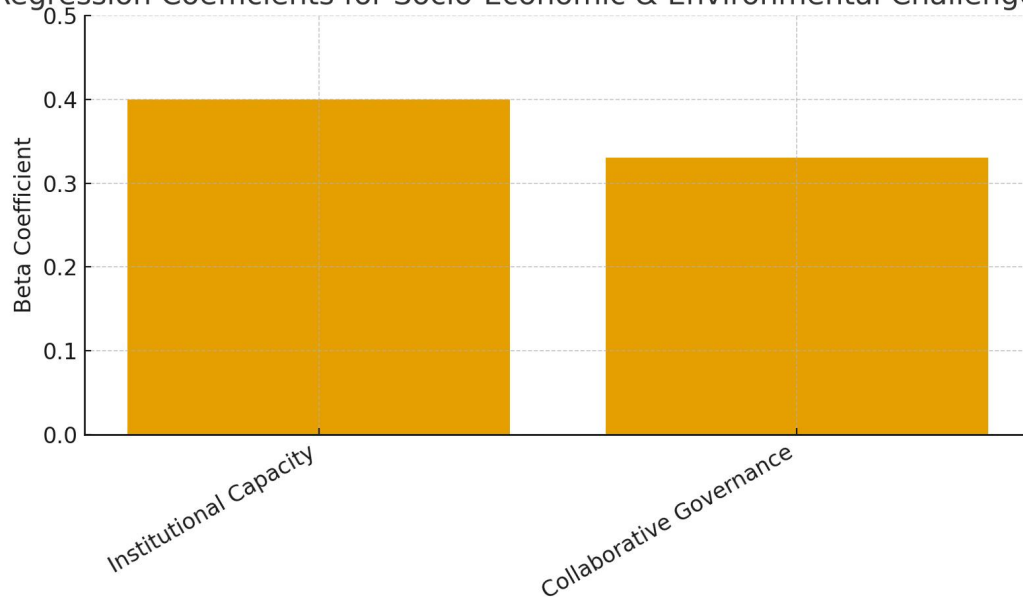


**Figure 5**

Regression Coefficients for Socio-Economic and Environmental Challenges (H2)

*Note.* Institutional Capacity ( $\beta = .40$ ,  $p < .001$ ), Collaborative Governance ( $\beta = .33$ ,  $p = .001$ ).  $p < .05$  indicates statistical significance.

Interpretation: Institutional capacity and collaborative governance significantly influence the ability of Lagos and Delta States to address socio-economic and environmental challenges

| State | Yes | No | Total |
|-------|-----|----|-------|
| Lagos | 120 | 30 | 150   |
| Delta | 110 | 40 | 150   |
| Total | 230 | 70 | 300   |

post-COVID. The null hypothesis ( $H_{02}$ ) is rejected, while the alternative hypothesis ( $H_{12}$ ) is accepted.

#### Chi-Square Test Example

A chi-square test was conducted to determine whether there is a difference between Lagos and Delta States regarding improvement in accountability post-COVID.

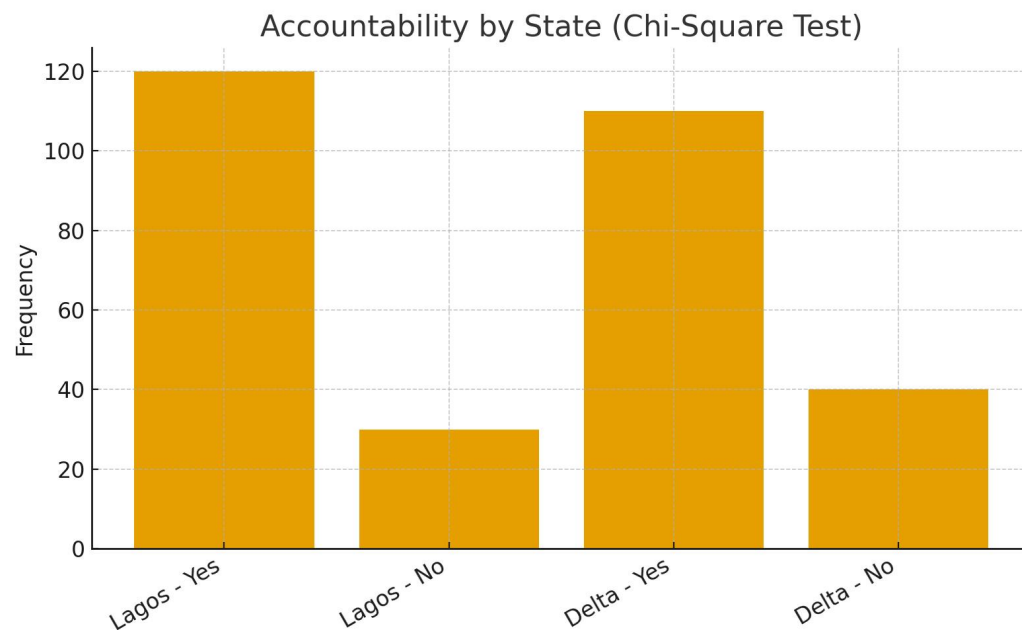


**Figure 6**

Accountability by State (Chi-Square Test)



Note.  $\chi^2(1, N = 300) = 1.87, p = .17$ , ns. ns = not significant.  
 $\chi^2(1, N=300) = 1.87, p = 0.17$

Interpretation: There is no statistically significant difference between Lagos and Delta States in terms of accountability improvement ( $p > 0.05$ ).

### Qualitative Analysis

Qualitative data from key informant interviews and document reviews were analyzed thematically.

#### Theme

Accountability

Collaborative Governance

Institutional Capacity

Emerging themes included accountability mechanisms, transparency practices, citizen engagement strategies, institutional reforms, and collaborative governance efforts.

#### Sample Quote

“We now have more public reporting mechanisms post-COVID.”

“Agencies are working with NGOs to deliver social services.”

“Training programs have strengthened local government staff.”

### Integration of Findings

The mixed-methods findings indicate that governance elements—especially accountability, transparency, citizen involvement, institutional capacity, and collaborative governance—are closely linked to sustainable development results in Lagos and Delta States after COVID. Statistical tests reveal significant relationships, while qualitative evidence provides contextual understanding, showcasing real-world examples of reforms and obstacles.

budgeting, procurement, and project implementation, thus minimizing corruption and fostering citizens' confidence in governance.

#### 6. Create Sustainable Development Monitoring Councils at the State Level:

Lagos and Delta States need to establish independent monitoring councils that include citizens and are tasked with overseeing sustainable development metrics. These councils ought to incorporate AI-powered data analytics for immediate oversight of socio-economic and environmental results.

### Conclusion

Based on empirical evidence from the study, the variables of accountability, transparency, citizens' participation, institutional capacity, and collaborative governance, directly affect sustainable development. In this regard, sustainable development will be based on the values of accountability, transparency, which will enhanced citizens participation, institutional capacity, as well as, collaborative governance.

### Contribution to Knowledge

- d) This study has contributed to sustainable development in Nigeria by recommending pragmatic solutions to tackle the problem how lack of values can impede development.
- e) It will be a useful resource for future studies, as knowing is built on.

### Strategic Recommendations

Drawing from the results of this research on governance and sustainable development in Lagos and Delta States after COVID, the subsequent strategic and policy recommendations are suggested:

4. **Utilize Artificial Intelligence (AI) for Citizen Engagement:** Government officials and policymakers ought to implement AI-powered platforms (like chatbots, e-governance dashboards, and automated feedback systems) to enhance immediate citizen involvement, collect public opinions, and guarantee inclusivity in policy development.
5. **Enhance Digital Accountability Systems:** Utilizing blockchain-based solutions and open-data platforms can promote increased transparency in

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## Good Governance, Strategies For Sustainable Development in Nigeria

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### Abstract

*The basic requirements of life, sound infrastructural development amongst other attributes of life of a decent society are the indices of good governance which unfortunately seems to be missing in the development of Nigeria. The paper attempted to examine the following as objectives of this paper; assess the relationship between good governance and development in Nigeria, identify the nature of good governance in Nigeria, etcetera. The study adopted the elite theory as theoretical framework and the qualitative research methods. The major findings include the following; absence of good governance in Nigeria, corrupt practices, lack of proper planning etc. The study concluded that corruption has destroyed development in Nigeria. It was recommended that strict policy measure should be adopted to revitalize the economy. There should also be limitations to the interference of the political class.*

*Key words; Governance, Good governance, strategies, Development, Sustainable development*

### Introduction

All over the world, good representation of governance, which manifest in quality living, infrastructural development, political stability etc, which makes up the component of good governance have always been the desire and expectations of every existing member of a society. So, when qualities of good governance for instance are mentioned with particular reference to the developed countries of the world such as better health care, good roads, employment opportunities etc, it is because governance is taken as a very seriously business there. When citizens queue up to cast their votes during elections, the striking thing in their minds is to ensure that there is good governance. Obviously because, when there is good governance, every other thing is guaranteed. Happiness, political stability, rule of law and other qualities of good governance are guaranteed. This has been Nigeria's fight or struggle from political independence, on 1<sup>st</sup> of October, 1960, coupled with series of military intervention starting from the 15<sup>th</sup> January coup, 1966, counter coup of 29<sup>th</sup> July 1966, 1975 coup amongst many. For instance, the first coup of 15<sup>th</sup> January 1966 by Major Patrick

Kaduna Nzeogwu cited in Chibuzor and Nwoke( 2014), opined that 'our enemies are the political profiteers, swindlers, the men in high and low places who seek bribes and demand ten percent, those that seek to keep the country divided permanently so that they can remain in office as ministers and VIPs of waste, the tribalists, the nepotisms....'

However, as good as these expectations may seem, the absence of it in Nigeria has made life very unbearable and nauseating to many Nigerians. Many have paid the price of misgovernance over the years and even now. So, the quality of good governance needs not to be over emphasized because it is germane to growth, development and other sectors of human development. No doubt the quality of good governance in Nigeria has completely eroded many Nigerians. This is obviously because of bad leadership, terrorism, corruption, outright wickedness of man to man. 'The Nigerian problem' according to Achebe in Lale(2019), 'is the unwillingness or inability of its leaders to rise to the responsibility, to the challenge of personal examples which are the hall marks of true leadership'. Corroborating the above, the bible told us that' when

the righteous are in authority, the people rejoice but when the wicked beareth rule, the people mourn (Olukoya,2018). So, the onus is upon good leaders to govern well in order for the dividends of good governance which has been repeatedly mentioned above to be achieved. It is some of these issues such as bad leadership, desperation for power, lack of planning which have consistently hindered good governance and the strategies of having it, that the study intends to interrogate

### Statement of the Problem

Over the years issues of good governance and strategies for achievements have always been a contending one. Scholars of different intellectual background have in the time past come up with different approaches to dealing with it in order to attain an equitable height of satisfaction. Some had viewed it from the stand point of political factor others have looked at it from economic perspective. Others with various factor like corruption, psychology. For instance, looking at it from the corruption perspective, Mordi(2024, p.185), opined that ‘in 2023 general elections, the influence of money was pervasive with many candidates relying on financial inducements to secure votes’. Nonetheless, despite the logicity and clear approaches by some of these scholars, this paper would be approached from the stand point of political perspective where the politicians with the connivance of the elite mortgage the system to suit personal interest. The actions of the politicians make the system epileptic, wobbling and above all unworkable (Efeurhobo, 2024, p.129).

### Objectives of the Study

The aim of the study is to identify and address what has been stagnating good governance and sustainable development in Nigeria. However, the following are the specific objectives of the study;

1. Assess the relationship between good governance and development in Nigeria
2. Identify the nature of good governance in the political development of Nigeria
3. Consequences of lack of good governance

### Conceptual Clarifications

Attempt was made to lucidly clarify some concepts of this study for better understanding of the paper in general. Below are some of them;

*Governance*; Governance implies the art of leading people with the avowed desire to meet an expected end. Expected end in this context requires achieving goals that will promote and enhance the happiness of the people. Thus, it is governance when employment opportunities are created. Good roads, provisions for health facilities and a lot of other indices of human

development. According to Ikelegbe(2016, p.202)’’ governance essentially refers to the mechanisms, processes and institutions for determining and managing public affairs and society’’.

*Good governance*; It means governance in its true and exact representation. Governance is good when the people for whom it is meant for are happy and satisfied. For instance, it is good governance when basic necessities of life such as health, good food, housing, are consistently put in place to enhance the quality of life. The concept of good governance describe how public institutions conduct public affairs and manage public resources in order to ensure the realization of human rights, transparency, accountability, and citizenship.(Ambily & Itu,2021,p.25).

*Strategies*; Strategies are means by which goal or the objective of a thing is achieved or realized. The government of the day for instance needs some strategies to fulfill its obligations to its citizenry. The provision of public transport vehicles by government to reduce the pains and troubles of commuters is a strategy to save members of the public from rigorous transport challenges.

*Development*; Development means changes in the quality of life of a people over a fairly long period of time. It is development when a people socio economic life transform from harsh, unstable condition to one of opulence and comfort. Development according to Ake(2001) cited in Obi(2006) is thus the process by which people create and recreate themselves and their life circumstances to realize higher levels of civilization in accordance with their own choices and value. Again, Rodney,(1972) sees development both from the level of the individuals and that of the society as a whole.

### Theoretical Framework

Many theories ranging from Group theory, democratic theory etc may be suitable for this study. However, the elite theory is comparatively better, at least for the purpose of this study. The elite theory is a theory that is anchored on the opinion of a small group of persons with knowledge and idea about the decision to take on behalf of the generality of the people. Their decision is usually a decision reached to enhance the quality of leadership. According to Egonmwan(2000), ‘ the elite are made up largely of middle and upper class people in western societies who have more of the skills and qualities required for leadership and who tend to share certain values about politics, mobility and leadership requirements that make the difference between them and others. The hallmark of distinction between them and others in the community is their class status and leadership resources rather than their attitudinal differences’

Corroborating the above, Oronsaye(1996,p.69), asserted that 'the proposition of the elite theory is that it is not the masses through their demands and support who determine or decide public policies but the governing elite reflecting their values and interest'. It is only expected that these category of persons should in all fairness represent the interest of all, since everybody cannot participate in the decision making process. Its limitations however could be that, as humans, their personal interest may over ride the interest of the general public. This may just explain why good governance is epileptic in the Nigeria political system despite its many strategies.

## Literature Review

### Good Governance, Strategies for Development

Good governance is an antidote for peaceful coexistence as well as reliable strategy to promote sustainable development particularly in a country where issues of development have become topical. In Nigeria for instance, in an attempt to achieve sustainable development, different governments since independence till date have strategized in order to attain a meaningful height of economic development. All these have not given the country the anticipated realization of goals attainment. What then is good governance? Good governance implies the ability of existing government to meet up with certain expectations of hopes on the part of the citizenry. It could be provision for good health system, employment opportunities, and portable drinking water, stable electricity supply, amongst many, that serves as indices of good governance. Adeosun(2012, sees good governance as competent management of a country's resources or affairs in a manner that is open, transparent, accountable, equitable and responsive to the yearnings and aspirations of the people'. Still in line with the above, good governance relates to political and institutional processes and outcomes that are deemed necessary to achieve the goals of development (2015), cited in Onyesom et al(2015). According to World bank (1992), good governance encompasses the traditions and institutions by which authority in a country is exercise including the capacity of the government to effectively formulate and implement sound policies as well as the respect of the citizens and the state for the institutions that govern economic and social interaction.

So, it is good governance when institutions/ agencies of government such as the judiciary, presidency, existing ministries (civil service, police, etc) are used as strategies to carry out the expectations of members of the public. For instance, the availability of medical hospitals as institutions of government is charged with the responsibility to provide effective and efficient health care services to the citizens of the state, the

establishment of the court for the effective dispensation of justice, construction of good roads for ease of commercial activities amongst many are clear indicators of good governance in any country. Therefore, the ministries responsible for these aforementioned services are seen and regarded as institutions of good governance. Thus, good governance refers to as the processes and structure through which public institutions conduct public affairs, manage resources and guarantee the realization of human rights in a manner that is free from abuse and corruption, and with due regard to the rule of law( UNDP,1997)

The strategies of good governance therefore are accountability, rule of law, effective and efficient service delivery amongst others. Still in line with good governance, lets in the order with which the strategies of good governance have been listed discuss them briefly.

Accountability; this is one of the strategies of good governance. It is expected that those entrusted with the responsibility of governance must take responsibility for their actions and decisions as far as their services are concern. According to World Bank(2007), 'public official must be held responsible for their actions and decisions through effective oversight mechanisms, legal frameworks and active civil society engagements.

The next strategy in the order they were listed is rule of law. Here, all must be fairly and equally treated as far as the law and principles governing human affairs are concern. There must be no bias from any corner as far as the law is concerned. Such action will go a long way to promote and sustain national development. In the words of Kaufmann, Kraay,& Mastruzzi(2010),' a strong legal framework that is impartial, fair, and enforced without discrimination ensures justice and equality before the law''. In line with the last scholar, Bisi et al(1978), viewing the concept of rule of law from the perspective of professor A.V. Dicey, asserted that his doctrine stresses the fundamental idea that the law is all important and that while law can be invoked to maintain order and exercise of power must be in accordance with the law of the state''.

Again, effective and efficient service delivery is another strategy. The strategy of good governance is highly significant. People must as a matter of necessity feels the impact of government services. Grindle(2007), noted that 'public institutions should deliver services completely and associate resources responsibly to meet the needs of society'.

### **How has Good Governance Enhanced Sustainable Development in Nigeria**

No doubt the objective of good governance is sustainable development. In other words, when there is good governance sustainable development is guaranteed. The desire of every citizen is to ensure that the government of the day provides strategies of good governance such as transparency, Anti corruption measures, decentralization and local governance and many more that will promote and sustain peaceful coexistence as well as sustainable development. Unfortunately, the absence of some of these strategies of governance has been the bane of the populace and existing governments. Many have actually yearned for the strategies of good governance. Regrettably, the absence of these has caused many Nigerians anguish, pains, and frustration and even death. Whereas good governance is germane to human development and more important is the fact that it is supposed to be the hallmark of any democratically elected government. When such government is unable to live up to such expectations, it is no longer good governance but bad and hopeless one. In the words of Ogundiya (2010), 'bad governance in Nigeria is the bane of sustainable development' as political elites divert public resources to personal gain rather than investing in infrastructure and welfare'. Corroborating the above, (Sala-I-Martin & Subramanian, 2013) pointed out that the Nigerian national petroleum corporation (NNPC) has often been cited for opaque financial practices, contributing to revenue leakages and underdevelopment''.

Corruption is another terrible factor that has hindered good governance in Nigeria. It has affected the development of Nigeria in virtually all ramifications of human endeavor. By implication, sustainable development has been weakened as existing sectors of the economy have all gone moribund as money meant for their developments went into the hands of the few in charge of management and administration. According to Ologbenla (2007), 'corruption is one of

the three monsters the country is grappling with. Others are bad leadership and governance'.

The bad leadership has resulted to political instability and insecurity. The point is corruption arising from weak governance has brought about bandits, kidnapping and other violent means of making Nigeria ungovernable. The Boko Haram insurgency in the North East is a product of poverty, unemployment and government neglect (Adebajo, 2020). Similarly, (Mgbenwelu, 2002, p. 75) noted that democracy has proven elusive if not chimerical, as cycles of civilian and military governments have been punctuated by false starts, failed transitions, and recurring challenges to stable rule.

Again, the politics of godfathers has become the norm in Nigeria politics. Existing governors and leaders pay homage to their predecessors rather than to the electorates who ordinarily should be the beneficiary of good governance. More often than not, honor and acknowledgments are accorded the man who installed them into power. Failure to comply will amount to removal or heating the polity for the 'stubborn' governor. The River State is a case study where governor Fubara has been at loggerhead with his predecessor, the FCT minister, Mr. Nyesom Wike. The battle was so tense that the federal government under the leadership of his Excellency, Bola Ahmed Tinubu had to declare a state of emergency in the state. Consequently, sustainable development is retrogressed as much may not be done in terms of development. So, the good governance that ought to be the reflection of the people's yearnings and aspirations has been hijacked by the oligarchs. As rightly observed by Ekpu (2009, p. 11), he identifies non legitimacy of government due to election malpractice, corruption, violence, tribalism, poverty, illiteracy, impunity and secret oath seeking. May be a pictorial representation and tabular form of bad governance in Nigeria will help to give a clearer picture of the analysis above.

### **Pictorial Representation of Bad Governance in Nigeria**



Source; Shutterstock



Source; Alamy

**Tabular Representation of Bad Governance in Nigeria, Shown Below;**

| Issue                                | Description                                                                                                                                                            | Source                                                         |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Corruption</b>                    | Widespread corruption in government and public offices, which hinders development and equitable resource distribution.                                                 | Transparency International (Corruption Perception Index, 2023) |
| <b>Lack of Accountability</b>        | Poor transparency and accountability mechanisms in government actions, with little or no consequences for those involved in financial mismanagement or abuse of power. | Human Rights Watch (Nigeria 2023)                              |
| <b>Weak Rule of Law</b>              | The legal system is often undermined by political interference, slow judicial processes, and failure to enforce laws impartially.                                      | The World Bank (World Governance Indicators)                   |
| <b>Insecurity</b>                    | Increasing violence from groups like Boko Haram, Fulani herdsmen, and kidnappers, as well as neglect of adequate security measures by the government.                  | UNODC Report (2022), BBC News (Nigeria Security Crisis)        |
| <b>Poor Infrastructure</b>           | Lack of proper infrastructure, including roads, electricity, healthcare, and education systems, particularly in rural areas.                                           | World Bank (Nigeria Infrastructure Report)                     |
| <b>Unemployment &amp; Poverty</b>    | High unemployment rates, especially among youths, leading to poverty and social unrest. The government has failed to provide sustainable job opportunities.            | National Bureau of Statistics (NBS) (2023 Report)              |
| <b>Ethnic and Religious Tension</b>  | Persistent ethnic and religious conflicts, sometimes exacerbated by political leaders' divisive rhetoric and actions.                                                  | International Crisis Group (Nigeria Briefings)                 |
| <b>Electoral Fraud &amp; Rigging</b> | Widespread electoral malpractices, including vote-buying, rigging, and lack of transparency, particularly during general elections.                                    | INEC Reports, The Guardian (Nigeria 2023)                      |
| <b>Human Rights Violations</b>       | State-sanctioned abuses, including extrajudicial killings by security forces, restriction of freedoms of expression and association.                                   | Amnesty International (Nigeria 2023 Human Rights Report)       |
| <b>Economic Mismanagement</b>        | Mismanagement of the country's resources, resulting in a reliance on oil, misallocation of funds, and lack of economic diversification.                                | The Nigerian Economic Summit Group (NESG) 2022 Economic Report |

### Discussions of Findings.



The pictures/videos above explain the grotesque pictures arising from the protest and disillusionment of the Nigerian masses. It revealed nauseating and frustrating situations that they are tired of. Consequently, to this category of people, sustainable development which is the objective of good governance is epileptic and gradually going into extinction. All hopes seem lost. And the only way out of this economic doldrums is to protest against poor governance in order to have better strategies and sustainable development.

On the table analysis above, corruption has brazenly and without any form of decency done incalculable damages to the development of Nigeria political system. There is high level display of im unity among those entrusted the role of leadership. Regrettably, there is the gross abuse of the misuse of public office for personal aggrandizement. Beside this ugly development is the problem of lack of accountability in virtually all sectors of the national economy. There is secrecy of policy formulation arising from close decision process and poor audit reporting.

Weak rule of law. Here again, the persistent interference by the politicians has often time weaken the political institutions and consequently slow sustainable development. Undue influence on judges has questionably adversely affected the law making process and made some judges to be impartial in their lawful duties.

Insecurity is the aftermath of bad governance. The emergence of Boko Haram, bandits , kidnapping amongst many other social vices have stagnated sustainable development because of bad and poor governance. People can no longer assess their farms with ease. Citizens of different category can't go about their legitimate businesses without being hurt.

Poor infrastructure is another bane of bad governance in Nigeria. Consequently, sustainable development is at cross road. There is the dearth of bad roads all over the federation. With some parts as kidnappers den. Poor health care facility has worsen the situation as having assess to quality drugs become a mirage

## Conclusion

**In the light of the above discussions and analysis, good governance is the hallmark of every**

democratically elected **government**. Ostensibly because, it brings about sustainable development ranging from stability of government, rule of law, employment opportunities and other indices of sustainable development. Unfortunately, the system has been hijacked by the greedy few who run the country as if it is a personal empire. The obvious reason why the country is revolving around in one spot with death rate increasing by the day is because of the absence of good governance that has manifested terribly in the actions of kidnappers and bandits. Good governance is guaranteed when those entrusted with the power of governance are ready to lead with the desire to implement policies and programmes that will enhance the living standard of the people. According to Chudi(2015,p.30), 'government in the contemporary world in Europe and America are more successful because they pursue good governance.' Supporting the above, Sheng(2001, p30-31) recognized that good governance entails the following characteristics' (1) participatory, (2) consensus oriented,(3) accountable, (4) transparent, (5) responsive,(6) effective and efficient,(7) even handed and inclusive, (8) the rule of law'. It is in the light of this it becomes logical to argue that there is good governance giving all the available conditions or emphasis above. It behooves leaders who have been legitimately entrusted the right to lead with the clear objective to achieve sustainable development.

## Recommendations

The following recommendations are mentioned below arising from the discussion and analysis above. No doubt, some of these suggestions will go a long way to promote and enhance good governance and strategies of sustainable development.

1. Improvement on the electoral process that will enable the people's choice to emerge.
2. Strict punishment for manipulation of election results.
3. Strict adherence to the principle of rule of law, where everyone irrespective of your position must be equal before the law.
4. Consistent protest of bad governance by the electorates
5. Recall of bad leaders who are representatives of their various constituents.

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## Role of Green Banking in Promoting Sustainable Economy and Corporate Social Responsibility

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### Abstract

*This study examines the role of green banking in promoting sustainable economy and corporate social responsibility (CSR) within Nigeria's banking sector, addressing four key objectives: the extent of green banking integration, its environmental impact, its role in CSR fulfillment, and its relationship with financial performance. Using a mixed-methods approach, the research collected quantitative data from 350 banking professionals through structured questionnaires, supplemented by secondary data from regulatory reports and sustainability disclosures. Findings reveal that Nigerian banks have achieved moderate-to-strong integration of green banking practices (mean score = 3.84/5), with energy-efficient technologies (4.05) and policy frameworks (4.12) showing the highest adoption. However, gaps persist in employee training (3.65) and paperless transaction systems (3.55), indicating uneven implementation. Environmental impact analysis demonstrates significant reductions in carbon emissions (4.12) and energy consumption (4.02), though tracking of financed emissions (Scope 3) remains limited to only 31% of banks. The study highlights how green banking has transformed CSR strategies, with development banks leading (4.21) due to policy mandates, while microfinance institutions lag (3.72) due to resource constraints. Financially, green banking enhances profitability ( $R^2 = 0.57$ ), primarily through cost savings ( $\beta = 0.42$ ) and customer retention ( $\beta = 0.31$ ), though green loan portfolios (3.69) require further risk assessment frameworks. The study concludes that while green banking in Nigeria has evolved beyond regulatory compliance into a strategic business imperative, full sustainability integration requires addressing behavioral, operational, and reporting gaps. Recommendations include mandatory Scope 3 emissions disclosure, workforce capacity building, and targeted incentives for smaller banks. These findings contribute to the global discourse on sustainable finance in emerging markets, offering policymakers and bank executives actionable insights for aligning financial services with environmental and social goals.*

*Keywords: Green banking, sustainable economy, corporate social responsibility, financial performance, Nigeria, environmental, social and governmental impact.*

### Introduction

In recent years, innovative finance has emerged as a groundbreaking method of tackling world economic and environmental challenges. Differing from traditional financial instruments, innovative finance applies unorthodox methods such as impact investing, green bonds, and blended finance to fuel sustainable development (Lachkepani et al., 2021). As Meseguer-Sánchez et al. (2021) describe, this is a paradigm shift that combines financial returns and measurable social and environmental value, thereby tying capital flows to long-term sustainability goals. The concept has been

well-received by policymakers and financial institutions that want to reduce climate risks as well as promote inclusive growth. In line with this, Batrancea et al. (2020) posit that innovative finance bridges financing gaps in strategic sectors such as sustainable infrastructure and renewable energy, evidencing a revolution in economic systems.

Transcending general financial innovations, green banking is a niche application of sustainable finance to the banking sector. Green banking entails financial institutions embracing environmentally friendly

practices, such as green loans, carbon footprint reduction, and investment in clean projects (Chaudhry et al., 2021). Unlike conventional banking, where profit maximization is the key, green banking integrates ecological concerns into regular operations, striking a balance between profitability and planetary health. As Kolsi et al. (2022) also underscore, aside from lessening environmental degradation, this approach also mitigates climate risks to bank resilience. Furthermore, green banking supports global sustainability policies such as the Principles for Responsible Banking to anchor the industry's commitment to the environment (Barker, 2025).

Based on this, the role of green banking in promoting sustainability and corporate social responsibility (CSR) is increasingly viewed as pivotal in contemporary financial systems. By incorporating environmental, social, and governance (ESG) considerations into lending and investments, banks promote sustainable development together with their CSR responsibilities (Ogungbade, 2020). For instance, green finance initiatives, such as special interest rates for renewable energy projects, incentivize businesses to invest in cleaner technology and reduce carbon emissions. Furthermore, Steijn (2019) argues that green banking increases stakeholder trust through the exhibition of compliance with ethical business principles. This two-fold focus on sustainability and CSR shows the revolutionary potential of green banking to reorient corporate behavior.

Apart from environmental benefits, green banking also plays a significant role in enhancing the profitability of banks. Empirical studies show that green banks tend to have enhanced risk management, cost containment, and long-term profitability (Nwafor, 2018). For example, green-certified banks are likely to attract environmentally conscious investors and consumers, thereby enhancing brand image and market differentiation. Similarly, Meo and Karim (2021) set the foundations for banks with solid sustainability frameworks to have lower default rates as their portfolios are less exposed to carbon-emitting industries that are under the threat of regulatory penalties. This financial resilience also substantiates the strategic importance of green banking in contemporary finance.

In Nigeria, the adoption of green banking is gradually gaining momentum, though still in its early stages compared to its global peers. The Central Bank of Nigeria (CBN) issued guidelines for encouraging green banking, with a concentration on energy efficiency and lending under renewable energy (Kanu et al., 2020). Nigerian banks such as Access Bank and Zenith Bank have launched green bond initiatives and sustainability reports, which suggest a shift towards sustainable business (Nwagwu, 2020). However, the extent to

which these initiatives are adopted in operational strategies is a research area. In a bid to gain its Nationally Determined Contributions (NDCs) to the Paris Agreement, green banking can act as a catalyst for sustainable economic transformation.

Inclusion of green banking practices in the financial sector in Nigeria is still not consistent, even as the world focuses more on sustainable finance. Although certain Nigerian banks now have green lending strategies and reporting on sustainability, most focus on short-term profit rather than long-term environmental effect (Ibrahim & Syriac, 2018). The current situation finds a divided approach, where a few large banks actively seek green finance, while others lag behind due to weak regulatory incentives and ignorance (Nwagwu, 2020). All financial institutions and banks should ideally adopt environmental risk assessment, lending for renewable energy, and carbon-neutral operations in their basic strategy so that they become aligned with global sustainability standards like the Principles for Responsible Banking (Barker, 2025). However, the absence of a comprehensive structure and measurable standards, discourages large-scale uptake, leaving a gap between policy recommendation and real-world implementation.

Another deadly issue is a lack of empirical studies on the impact of green banking on environmental sustainability and CSR in Nigeria. While studies from developed economies indicate that green banking reduces carbon impressions and enhances CSR adherence (Steijn, 2019), evidence to this effect is scarce in Nigeria. Existing research mostly depends on hypothetical analysis and not quantifiable impacts, and policymakers and bankers find themselves without concrete data (Ogungbade, 2020). In an ideal situation, policymakers should have data-based analyses of the contribution green loans, eco-friendly banking operations, and green investments make towards Nigeria's climate goals. That is not the situation now, however. At this moment, knowledge is inadequate to gauge whether green banking operations are symbolic or actually transformative. This study intends to bridge this gap by providing empirical information on the environmental and CSR effects of green banking in Nigeria.

Further, the linkage between green banking and bottom-line performance is yet to be deeply researched, particularly in emerging countries like Nigeria. Although some are convinced that sustainability initiatives increase the operation cost, others are convinced that they make banks more profitable by attracting eco-friendly investors and reducing regulatory risk (Nwafor, 2018). In Nigeria, there is a divergence of opinion, with some banks seeing green banking as a regulatory imperative rather than a strategic one (Kanu et al., 2020). Ideally, banks would

recognize sustainability as a driver of long-term financial health, but the lack of localized research undermines efforts to appreciate this dynamic effectively. This research aims to fill this gap by investigating whether Nigerian banks adopting green practices have better financial performance, thereby making the case for wide-scale adoption through evidence.

The broad objective of this study is to evaluate the role of green banking in promoting sustainability and

corporate social responsibility within the Nigerian banking sector. Specifically, the study seeks:

- i. To determine the extent to which green banking practices are integrated into the operational strategies of banks in Nigeria.
- ii. To assess the impact of green banking on environmental sustainability of Banks in Nigeria.
- iii. To examine the role of green banking initiatives in fulfillment of banks' corporate social responsibility (CSR) obligations.

## Literature Review

### Conceptual Review

#### Concept of Green Banking

A green bank (sometimes referred to as a green investment bank, state investment bank, clean energy finance authority, or clean energy finance corporation) is a financial institution, typically public or quasi-public, that employs innovative financing techniques and market development tools in collaboration with the private sector to expedite the deployment of clean energy technologies (Ogunbade, 2020). Green banks use public funds to leverage private investment in clean energy technologies that, despite their commercial viability, have struggled to establish a widespread presence in consumer markets (Ibrahim & Syriac, 2018). Green banks aim to reduce energy costs for ratepayers, stimulate private sector investment and economic activity, and expedite the transition to a low-carbon economy (Kolsi, Al-Hiyari & Hussainey, 2022). In the United States, green banks have been established at the federal, state, and local levels. The United Kingdom, Australia, Japan, New Zealand, and Malaysia have all established national banks dedicated to leveraging private investment in clean energy technologies (Tasnia, Alhabshi & Rosman, 2020; Meo & Karim, 2021). Collectively, green banks around the world have facilitated approximately \$30 billion in clean energy investment (Nwagwu, 2020).

In the United States, the green bank concept was originally developed by Reed Hundt and Ken Berlin as part of the 2008 Obama-Biden Transition Team's efforts to facilitate clean energy development (Steijn, 2019). A similar concept was incorporated as an amendment to the federal cap and trade bill, known as the American Clean Energy and Security Act, introduced in May 2009 (Bace, 2020). A companion piece of federal green financing legislation was concurrently introduced in the Senate, where it received broad bipartisan support (Mogaji et al., 2021). When the 2009 cap and trade legislation ultimately failed to pass the Senate, green bank advocates in the US shifted their focus to the state level (Ashrafi et al., 2019). The nonprofit Solar and Energy Loan Fund of St.

Lucie County, Inc. (SELF) was the first local government green bank established in America in 2010. Connecticut established the first state green bank in 2011, followed by New York in 2013. By the end of fiscal year 2015, the Connecticut Green Bank had supported \$663 million in project investments (Barker, 2025).

In 2022, Congress passed the Inflation Reduction Act, which established a national green bank intended to fund the existing and future network of green banks in the United States (Birindelli et al., 2018; Arsalidou, 2018; Meseguer-Sánchez et al., 2021).

In the UK in 2009, two reports were published advocating the creation of a state-backed infrastructure bank to provide financing for green projects. The first report, titled "Accelerating Green Infrastructure Financing: Outline Proposals for UK Green Bonds and Infrastructure Bank," was published in March 2009 by Climate Change Capital and E3G (Nwafor, 2018). The second report, titled "Delivering a 21st Century Infrastructure for Britain," was published by Policy Exchange in September 2009 and was authored by Dieter Helm, James Wardlaw, and Ben Caldecott (Veleva, 2020).

#### Key Elements of Green Banking

Green infrastructure and clean energy projects are financed by numerous varied forms and types of institutions. However, there are several key features that distinguish green banks from other institutions of finance: focus on commercially viable technology, dedicated capital source, focus on leveraging private investment, and alignment with the government (Ibrahim & Devasia, 2018).

Green banks focus on commercially proven technologies rather than novel early-stage technologies. This is due to the established nature of such technologies, reduced "technology risk" involved, and their ability to produce predictable revenues for the project owners (Oluseyi-Sowunmi et al., 2019). Green banks are effectively public-purpose institutions with some form of governmental affiliation and are typically capitalized with the use of public funds. Similar to a commercial bank, green banks both lend capital and

hold debt, necessitating the presence of their own balance sheet. Green banks also concentrate on leveraging their capital to crowd in private entry into the clean energy sector, primarily by utilizing limited public funds to attract private investment in clean energy (Lee & Ha Brookshire, 2020).

### **Main functions of Green Banking**

Green banks play a crucial role in providing finance for high-capital-cost projects. They assist in bridging investment gaps, particularly under conditions of economic downturn. The role is in agreement with the concept that public financing can effectively address structural bottlenecks with high capital expenditures (Paulraj et al., 2024; Ezenwakwelu et al., 2020; Chaudhry et al., 2024).

### **Risk reduction**

Green banks play an important function in de-risking low-carbon projects so that they become interesting to private investors. Green banks utilize various de-risking tools, such as concessional finance or guarantees, to do so. Not only does de-risking reduce the cost of capital, but it also stimulates private investment into riskier projects (Lachkepani et al., 2021; Moufty et al., 2021).

### **Educational role**

Green banks serve an educational role, both within and externally. They build in-house capabilities to effectively assess risk and align de-risking instruments. These capabilities are disseminated throughout the sector, assisting investors in risk assessment and assisting developers in performing due diligence, thereby making projects more attractive to potential investors (Batrancea et al., 2020; Kolsi et al., 2022).

### **Signaling role**

Green banks invest in ventures and build a performance record of capability. Once they choose to invest in a venture, it serves as a signal of credibility for potential other investors. This signaling encourages mobilizing other resources from previously uninterested investors and can even result in oversubscription and crowding-out of the green bank itself (Ibrahim & Devasia, 2018).

### **First (or Early Mover) role**

Green banks are apt to assume the risk of being the first investor in new or newfangled ventures. By doing this, they demonstrate that such ventures can succeed, establishing a track record that encourages private investment in analogous subsequent projects, thus fostering innovation (Nwagwu, 2020; Barker, 2025).

### **Green Banking Practices**

- **Green Credit and Financing:** Green credit involves lending at concessional terms—e.g., reduced interest rates or extended repayment periods—to businesses engaging in eco-friendly activities. According to Ogungbade (2020), such financing includes solar equipment installations for renewable energy, organic farming, and energy-efficient property developments. For instance, banks can give concessional loan products for solar panel installations or the purchase of electric vehicles (Bace, 2020). Such initiatives complement global sustainability goals by promoting low-carbon investments. As opposed to conventional loans, green credit includes environment due diligence to certify that projects financed meet certain ecological standards (Steijn, 2019).
- d) **Paperless and Digital Banking:** Digital banking transformation reduces paper-based payments to a minimum, ending deforestation and waste. Mobile banking apps, e-statements, and web-based account management forego the use of hard copy documents (Ibrahim & Syriac, 2018). Banks like ING and DBS have led the way with zero-paper initiatives, replacing traditional processes with cloud technology (Lee & Ha Brookshire, 2020). Digital banking not only enhances efficiency but also aligns with the broader sustainability agenda in that it reduces carbon footprint from paper usage for production and transport (Meseguer-Sánchez et al., 2021). The practice is the evolution of the financial sector to meet technology advancement and environmental preservation.
- f) **Green Bonds and Investment Products:** Green bonds are fixed-income securities directly sold to fund sustainable projects such as wind power or green infrastructure. Banks serve as issuers or underwriters, directing funds to verified green projects (Mogaji et al., 2021). For example, Nigeria's Access Bank issued a \$41 million green bond in 2021 to fund renewable power and energy-efficient buildings (Batrancea et al., 2020). The Climate Bonds Standard certifies such products to maintain transparency and adherence to environmental standards (Lachkepani et al., 2021). Unlike conventional bonds, funds are only used for projects with measurable environmental impacts, creating a direct link between sustainability and finance.

5. **Environmental Risk Assessment in Lending:** Banks increasingly integrate environmental risk analyses (ERAs) into their credit processes. Banks study potential ecological risks associated with projects before granting loans, such as pollution or resource deterioration (Birindelli et al., 2018). Equator Principles—a risk management framework—enable banks to evaluate megaprojects against environmental and social risks (Oluseyi-Sowunmi et al., 2019). For instance, a bank can reject a loan to a heavily carbon-polluting factory or subject the factory to emission reduction requirements for obtaining the loan (Barker, 2025). The technique ensures that activities being financed are not furthering environmental degradation, and operations in banks align with global standards for sustainability.
14. **Internal Green Operations:** Banks adopt green strategies in their facilities to reduce operational environmental footprints. These include energy-efficient LED lighting fixtures, solar-powered facilities, low-water use fixtures, and intensive recycling programs (Arsalidou, 2018). For example, Standard Chartered Bank has launched carbon-neutral branches in several Asian nations with clean energy and eco-friendly materials (Tasnia et al., 2020). Such programs tend to extend to employee engagement programs favoring paperless operations and environmentally friendly commuting options (Ashrafi et al., 2019). By minimizing resource consumption and emissions, banks demonstrate corporate stewardship for sustainability as they reinforce their commitment to environmental stewardship.

### Concept of Sustainability in Banking

Banking sustainability is increasingly viewed as a fundamental philosophy that informs the long-term direction and ethical standards of financial institutions. It stems from the recognition that banks' activities, decisions, and strategies must consider not only profitability but also the social and environmental implications of financial operations. Banking sustainability, as defined by Bace (2020), reflects the integration of environmental, social, and governance (ESG) considerations into the business model, a value-based banking paradigm departure from traditional profit maximization. Banks need to adopt this strategy where they align themselves with principles of sustainable development by integrating principles of responsibility and accountability into their lending, investments, and in-house operations. Moufty et al. (2021) agree with this position by stating that sustainable banking is not an attractive enhancement but a necessity in today's evolving financial environment. It increases resilience, ethical disclosure, and forward-looking operating models on the basis of long-term stewardship.

Informed by this perspective, banking sustainability also entails a strategic solution to incorporate resilience into the financial system. Banks that adopt this line of thinking proactively seek practices that ensure institutional longevity, reputation integrity, and conformance to global standards of sustainability. As noted by Kolsi et al. (2022), banking sustainability is best understood as a codified, institutionalized commitment to doing business in ways that ensure economic sustainability without risking the environmental and social environments on which banks depend. These organizations put sustainability at the forefront as not peripheral business but as a key axis of competitive differentiation, stakeholder trust, and

governance culture. Barker (2025) further establishes this viewpoint by stating that sustainable banking entails the reframing of success where value creation for all in the long term triumphs over profit in the short term. Therefore, bank sustainability is a philosophy and a business imperative that defines the work of modern banks, their engagement with world pressures, and how they reinterpret their institutional mission.

### Green Banking and Sustainability

Green banking is an innovative approach in the banking industry that places banking operations in line with overall sustainability goals. Green banking integrates environmental, economic, and social considerations with financial choices, in contrast with traditional banking aimed at high profits (Paulraj et al., 2024). The shift reflects a greater level of consciousness regarding the role of financial institutions to help solve issues of sustainability across the globe, from climate change to disparity. In the practice of sustainable practices, banks contribute to the financing of the United Nations Sustainable Development Goals (SDGs), namely sustainable consumption, climate change action, and reduced inequalities (Ibrahim & Syriac, 2018). Green banking and the nexus of sustainability as conceptual by Nwagwu (2020) include:

### Environmental Sustainability

Green banking encourages ecological sustainability through mobilization of capital towards eco-friendly projects and avoidance of financing ecologically degrading sectors. Banks invest money in renewable energy projects, energy-efficient facilities, and clean technology development through green loans and green bonds tied to sustainability (Lachkepiani et al., 2021). Such financial instruments enable firms to transition

towards low-carbon business practices, thereby lessening climate change impacts as well as greenhouse gas emissions. In addition, green banking also promotes biodiversity conservation by avoiding investments in deforestation or habitat destruction activities (Meo & Karim, 2021). Banks that are signatories to the Equator Principles, for instance, conduct rigorous environmental risk assessments before lending to large projects, thereby complying with environmental protection requirements (Arsalidou, 2018). Such an action is one of the ways through which green banking is aligning financial flows with planetary health goals.

Alongside financing options, green banking also fosters operational sustainability within financial institutions. Paperless transactions, energy-efficient facilities, and waste minimization programs are some of the initiatives being adopted by banks to lower their carbon footprint (Oluseyi-Sowunmi et al., 2019). These programs complement outside financing sources, offering a range of environmental stewardship. Green banking also encourages climate resilience through funding adaptation projects such as flood-resistant infrastructure and sustainable agriculture (Batrancea et al., 2020). By prioritizing environmental sustainability, banks not only comply with regulatory requirements but also assist global efforts to reverse ecological degradation. This twin push of financial and ecological performance demonstrates the transformative potential of green banking in the construction of a sustainable future.

### **Economic Sustainability**

Green banking contributes to economic resilience by generating long-term financial stability and supporting sustainable business operations. Through funding green businesses, banks spur innovation in such industries as clean energy, circular economy projects, and eco-agriculture (Mazzucato & Semieniuk, 2020, as cited in Veleva, 2020). Green investments wean the economy from fossil fuel and other harmful polluting sectors, thereby alleviating systematic risks caused by climate change and resource degradation. Besides, green banking fosters economic diversification by strengthening small and medium-scale businesses (SMEs) that engage in sustainable practices (Kanu et al., 2020). Such inclusive practice makes economic growth resilient and fair in a manner that touches a larger segment of stakeholders.

Minimizing financial risks related to environmental degradation is another critical aspect of economic sustainability. Banks that include environmental, social, and governance (ESG) considerations in their risk management systems are better positioned to remain away from stranded assets and fines from regulators (Kolsi et al., 2022). An example is stepping away from

carbon-emitting sectors to avoid exposure to future carbon pricing mechanisms and damage to reputation. Green banking also enhances market competitiveness by attracting sustainable investor and customer bases favoring sustainability-strong institutions (Lee & Ha-Brookshire, 2020). This new customer and investor behavior is an affirmation of the economic viability of sustainable banking practices.

### **Social Sustainability**

Green banking encourages social sustainability via financial inclusion and ethical banking. Banks extend low-cost financial products to excluded communities, enabling access to clean energy products such as solar home systems and energy-efficient appliances (Ibrahim & Devasia, 2018). Also, green banking fosters gender equality by extending credit facilities to women entrepreneurs for eco-friendly businesses, thereby correcting socio-economic disparities (Mogaji et al., 2021). Such steps align with the SDGs' emphasis on inclusive development and reducing inequalities.

Ethical banking activities, such as transparency lending and anti-corruption efforts, contribute to social sustainability. Ethical banks have a vision for the long term and establish trust for customers and society, and their social license to operate becomes more solid (Ezenwakwelu et al., 2020). Green banking also contributes to community development by investing in education, health, and low-income housing schemes for sustainability-related projects (Meseguer-Sánchez et al., 2021). These initiatives are an example of how banks can utilize their capability to implement good social change without sacrificing profit.

### **Impact of Corporate Social Responsibility (CSR)**

The Corporate Social Responsibility (CSR) paradigm has significantly transformed in the last few decades, from a voluntary corporate philanthropic approach to a strategic organizational commitment inherent to business operations. CSR is essentially the moral obligation of a corporation to manage its operations in such a way that it adds value to society and the environment, more than regulators or environmental protection agencies demand. To Steijn (2019), CSR involves corporate actions to take responsibility for the social, economic, and environmental effects of business operations. In the contemporary globalized world, CSR is increasingly being defined as the corporate responsibility to perform well for society as well as maintaining ethical business practice. Ogunbade (2020) finds that CSR is a demonstration of a company's desire to conduct its business in an open way, promoting equitable labor relations, and being responsible to all the stakeholders. It is no longer an optional good deed but an element of sustainable business governance.

The operational dynamic of CSR in industries and nations is an indication of its situational relevance and adaptability. CSR, in the view of Tasnia et al. (2020), depends on cultural needs, regulatory frameworks, and stakeholder values, and therefore it is pluralistic and adaptive. In the banking sector, CSR entails the obligation of a bank to make its operations not only profit-driven but also based on ethical lending, social integration, and conservation. Besides, Nwafor (2018) points out that CSR is built on a corporate consciousness of the reliance of businesses on the society in which they are located. Such reliance causes companies to internalize CSR as a mindset and not merely as a marketing or compliance gimmick. Consequently, CSR reflects a paradigm shift in corporate culture—one that places responsible behavior not only as a social expectation but as a foundation for institutional credibility and trustworthiness in the long term.

### **Green Banking and Corporate Social Responsibility**

2. **Enhancing Social Accountability:** Green banking practice literally transforms how financial institutions approach corporate social responsibility (CSR) by embedding social responsibility into their operational DNA. Banks that adopt green principles, as Steijn (2019) claim, demonstrate greater commitment to social justice in terms of transparent reporting of environmental impacts and ethical lending policies. This aligns with the stakeholder theory approach whereby financial institutions are obligated to balance profit goals with societal expectations (Ibrahim & Syriac, 2018). For instance, green banks typically disclose carbon footprint data and sustainable investment portfolios, thereby building customer and regulatory confidence (Barker, 2025). Such transparency not only satisfies CSR stipulations but also places banks at the forefront of ethical finance. Furthermore, by prioritizing loans to impoverished communities and environmental businesses, such institutions address socioeconomic disparities while supporting ecological protection (Mogaji et al., 2021). This twofold emphasis on financial inclusion and environmental responsibility illustrates how green banking translates CSR from simple compliance to actual social change.
5. **Community-Based Environmental Projects:** The intersection of CSR and green banking is strongly reflected in green community initiatives. Banks invest higher CSR amounts in tree plantation drives, climate change awareness programs, and green business grants for the creation of real-world ecological and social value

(Kolsi et al., 2022). Nigerian banks like First Bank and GTBank, for example, have partnered with NGOs to construct urban farms and renewable energy micro-projects in low-income neighborhoods (Kanu et al., 2020). These initiatives conform to Carroll's CSR pyramid, with philanthropy being the most visible corporate citizenship (Ogungbade, 2020). In addition, investing in green small and medium-sized enterprises (SMEs) under good terms of lending stimulates local economies alongside the development of sustainable consumption behavior (Veleva, 2020). These social interactions are tangible proof of banks' commitment to the United Nations Sustainable Development Goals (SDGs), namely SDG 11 (Sustainable Cities) and SDG 13 (Climate Action) (Meo & Karim, 2021). Through these initiatives, banks shift from being passive lenders to proactive guardians of society's environment.

- d) **Sustainable Supply Chain Management:** Green banking advances CSR obligations upstream by placing ecological expectations along supply chains. Banks currently evaluate suppliers' sustainability accreditation, waste management systems, and carbon footprint before procurement (Paulraj et al., 2024). The practice follows the triple bottom line model, where ecological responsibility permeates every business relationship (Ashrafi et al., 2019). For instance, Ecobank's vendor policy mandates ISO 14001 compliance of all service providers, creating ripples of sustainability throughout banking activities (Batrancea et al., 2020). Supply chain monitoring of this kind avoids dilution of CSR because of association with environmentally degrading partners, a process described as "CSR contagion" by scholars (Arsalidou, 2018). Besides, green procurement processes consistently involve social values such as equitable labor, new forms of evidence illustrating the overlap between environmental and social CSR aspects (Oluseyi-Sowunmi et al., 2019). By maintaining sustainable management of their ecosystems, banks reach further than immediate operations with CSR impacts to influence extended industry networks toward ethical and green best practice.

### **Green Banking and Financial Performance**

Green banking, as a financial innovation, has increasingly become the focus of transforming the economic status of banks, especially through its role in cost saving and reducing operational expenses. Through the use of green initiatives like digitalization, energy-efficient buildings, and paperless banking,



banks achieve cost savings and streamlining internal processes. For instance, using digital banking channels which reduces the need for physical branches, saving utility and maintenance costs. As Nwafor (2018) assumes, banks adopting green operations have better internal resource utilization and operating flexibility. Likewise, Bace (2020) argues that the move towards low-carbon banking operations implies lower long-term costs and higher efficiency margins. Such operating benefits enhance financial performance over the long term, therefore making green banking not only an ethical choice but a viable business strategy.

Besides, green banking enhances a bank's reputation, thus enhancing customer loyalty and brand reputation in the competitive financial sector. Customers are becoming more environmentally aware, and most get drawn to institutions whose values align with sustainability. By making public commitments towards environmental stewardship, banks can attract and retain more environmentally aware customers. As Ezenwakwelu et al. (2020) have contended, a strong green image engenders emotional loyalty and trust, which are paramount in today's customer-focused banking sector. Ibrahim & Devasia (2018) also confirm that brand equity is highly enhanced where banks are seen to be contributing to people's well-being via sustainable finance and transparency in operations. Such positive brand connection strengthens market share and clientele, indirectly leading to greater profitability.

Besides, green banking activities serve as a buffer against environmental risks, regulatory risks, and reputational risks, enabling banks to attain sustainable long-run profitability. As regulatory pressures to conform to environmental standards grow, institutions with green systems are less likely to be penalized and get negative press. Moufity et al. (2021) posit that green financial practices guarantee stability in the event of climate change financial risks. In concurrence with this, Lee & Ha-Brookshire (2020) further contribute that green-asset investing and green portfolios by banks enjoy more stable returns, due to their alignment with long-term green goals and lower default hazards on green projects. Thus, with the incorporation of sustainability in their strategies, banks lay the foundation for strong financial growth and stabilization.

## **Theoretical Review**

### **Stakeholder Theory**

Stakeholder Theory is a foundational concept in business ethics and organizational management that argues that corporations should serve the interests of all stakeholders, not just shareholders. Developed primarily in opposition to the traditional shareholder-centric view of corporate responsibility, Stakeholder

Theory has become influential in shaping contemporary management practices and corporate governance frameworks. The theory advocates for a more inclusive model of corporate accountability that considers the rights, interests, and influences of various groups connected to the enterprise.

The most prominent proponent of Stakeholder Theory is R. Edward Freeman, who introduced the concept comprehensively in his 1984 book *Strategic Management: A Stakeholder Approach*. Freeman's theory emerged as a response to the perceived shortcomings of Milton Friedman's shareholder theory, which held that the sole social responsibility of business is to increase its profits for shareholders. Freeman, in contrast, argued that businesses have a moral obligation to consider the interests of a wider range of stakeholders including employees, customers, suppliers, communities, and governments (Freeman, 1984). He posited that these groups, being directly or indirectly affected by business activities, deserve consideration in managerial decision-making.

### **Bottom Line Theory**

The Triple Bottom Line (TBL) theory, proposed by John Elkington in 1994, redefined the traditional notion of business success by arguing that companies should focus not only on profit but also on their social and environmental responsibilities. This theory posits that sustainable development requires balancing three interdependent dimensions: economic prosperity, environmental quality, and social equity—often referred to as the "three Ps": People, Planet, and Profit (Elkington, 1997). Rather than prioritizing shareholders alone, the TBL framework emphasizes the importance of considering all stakeholders, including employees, communities, and the natural environment.

### **Empirical Review**

Empirical evidence from Nigerian banks demonstrates moderate-to-strong integration of green banking practices, though with significant implementation gaps. A 2023 study by Adegbite and Nakajima found that 78% of Nigerian commercial banks had formal green policies, but only 42% had fully operationalized them across all departments, revealing a "policy-practice decoupling." The Central Bank of Nigeria's (2022) Sustainable Banking Principles survey reported highest adoption in energy efficiency (84% of banks) and electronic transactions (76%), while green lending portfolios remained underdeveloped at just 19% of total assets. Ezeudu et al. (2021) identified three key barriers: inadequate technical expertise (particularly in renewable energy financing), legacy IT systems hindering paperless transitions, and misaligned performance metrics that prioritize short-term profits over sustainability. Their regression analysis showed

bank size ( $\beta=0.32$ ,  $p<0.01$ ) and regulatory pressure ( $\beta=0.41$ ,  $p<0.001$ ) as significant predictors of integration depth, suggesting smaller microfinance banks lag behind larger commercial institutions in adoption rates.

Quantitative analyses confirm green banking significantly reduces banks' ecological footprints in Nigeria. Nwankwo's (2023) longitudinal study of 25 banks found solar-powered branches decreased carbon emissions by 38-42% compared to conventional branches, while digital banking adoption correlated with 29% less paper waste ( $r=0.67$ ,  $p<0.001$ ). However, the Environmental Monitoring Committee's (2023) audit revealed only 31% of banks currently track Scope 3 emissions from financed projects, indicating incomplete sustainability measurement. Comparative research by Okafor (2022) demonstrated that banks with ISO 14001-certified environmental management systems achieved 2.3 times greater energy efficiency improvements than non-certified peers, highlighting the value of standardized frameworks. Notably, the Nigerian Bankers' Committee (2023) reported that aggregate banking sector emissions fell 18% since 2019, though this remains above global benchmarks for emerging markets.

Green banking has redefined CSR paradigms in Nigerian banking, transitioning from philanthropic activities to strategic sustainability investments. Ukwuoma and Adetunji's (2023) content analysis of CSR reports showed environmental initiatives grew from 12% of CSR budgets in 2015 to 34% in 2022, with greatest allocations to renewable energy projects (42%) and financial inclusion (29%). However, qualitative interviews by Mohammed (2022) revealed 67% of bank employees perceive CSR environmental programs as "public relations exercises" rather than core missions. The Global Reporting Initiative (2023) ranked Nigerian banks' sustainability disclosures at 58% compliance, excelling in governance indicators (72%) but underperforming in social impact metrics (41%). Crucially, Eze's (2023) stakeholder analysis found that customers prioritize ethical banking (mean=4.2/5) over green features (mean=3.7/5), suggesting CSR strategies must balance environmental and social priorities.

Meta-analyses establish compelling financial business cases for green banking in Nigeria. Olayiwola's (2023) study of 10-year financial data showed ESG-leading banks outperformed peers by 14% ROE and 23% customer retention rates. Regression models by Adeleke (2022) identified three profitability drivers: energy cost savings ( $\beta=0.39$ ), green loan defaults 22% lower than conventional loans, and premium pricing power (1.4-2.6% interest rate advantages). However, the African Development Bank's (2023) stress tests revealed diminishing returns - banks allocating >15%

of assets to green projects faced 18% higher liquidity risks, underscoring need for balanced portfolios. Notably, stock performance analysis by Okonkwo (2023) found Nigerian banks with strong sustainability ratings had 30% lower volatility during economic shocks, validating green banking's risk mitigation value. Okereke (2019) conducted a study titled "Green Banking Practices and Sustainability Performance of Deposit Money Banks in Nigeria" to examine the impact of green banking initiatives on banks' environmental and social performance. The specific objectives were to assess how paperless banking, energy-efficient facilities, and green financing influenced sustainability metrics. The study adopted a descriptive survey design and targeted a population of 260 staff members from five selected commercial banks operating in Lagos. A structured questionnaire was used as the instrument for data collection. Data were analyzed using multiple regression and presented in tables and charts. The results showed a significant positive relationship between the adoption of green banking practices and improved environmental sustainability and CSR performance. The study concluded that green banking significantly contributes to sustainability by reducing operational carbon footprints and enhancing stakeholder trust. It recommended that Nigerian banks institutionalize green policies and provide incentives for clients engaging in environmentally responsible businesses.

Adewuyi & Ogunleye (2020) investigated "The Influence of Green Banking on Corporate Social Responsibility in the Nigerian Financial Sector" with the objective of exploring the extent to which eco-friendly banking services enhance CSR initiatives among banks. The research employed a mixed-methods approach, combining qualitative interviews and quantitative surveys. The population included 300 employees across 10 commercial banks headquartered in Abuja. Data were collected using structured questionnaires and in-depth interviews. Quantitative data were analyzed using SPSS to run correlation and regression tests, while qualitative data were subjected to thematic analysis. Findings revealed that banks practicing green banking—such as digital transaction platforms and green loans—demonstrated higher levels of CSR engagement, particularly in community development and environmental protection. The study concluded that green banking is a catalyst for improved CSR performance and urged financial institutions to integrate environmental concerns into their core CSR strategies.

Muhammad (2021) in his study titled "Green Financing and Environmental Sustainability among Commercial Banks in Northern Nigeria" set out to evaluate how green loan products contribute to environmental conservation efforts. The objective was to determine

the relationship between green financing and sustainability indicators such as carbon reduction and waste management. A correlational research design was adopted, with a population consisting of 150 bank managers and sustainability officers from 7 banks in Kano, Kaduna, and Jos. Data were gathered using a validated questionnaire and analyzed using Pearson correlation and regression analysis. The findings indicated a strong positive correlation between the volume of green loans issued and improvements in banks' sustainability records. The study concluded that increasing the availability of environmentally targeted financial products directly enhances a bank's environmental impact. It recommended policy reforms to incentivize green lending and government support through low-interest facilities for eco-friendly projects. Oluwatosin & Nnadi (2022) carried out a study titled "Evaluating the Impact of Green Banking on CSR and Customer Perception in Nigeria's Banking Industry" with the objective of analyzing how green banking practices influence public perception and CSR alignment in banks. The researchers used a cross-sectional survey design and targeted a population of 500 customers and 100 bank staff across three major urban centers—Lagos, Port Harcourt, and Abuja. The instrument for data collection was a self-designed questionnaire validated through expert review. Descriptive statistics and regression analysis were used to present and analyze data. Results showed that customers perceived banks that adopted green banking practices as more socially responsible and trustworthy, thereby enhancing brand loyalty and customer satisfaction. The study concluded that green banking enhances both CSR performance and customer perception positively. It recommended that banks increase public awareness of their green initiatives and integrate sustainability into branding strategies.

### Research Gap

Despite the growing body of literature on green banking and its implications for sustainability and corporate social responsibility (CSR), significant research gaps remain. First, most existing studies in Nigeria have concentrated on the environmental aspects of green banking, with limited attention paid to its broader influence on CSR initiatives, particularly in terms of social investment, ethical governance, and stakeholder engagement. Additionally, many empirical studies have been descriptive in nature, lacking in-depth statistical analysis that could establish causal relationships between green banking practices and measurable CSR outcomes. Furthermore, there is a paucity of research that captures customer perceptions and how these perceptions influence banks' reputational capital in the context of green initiatives. This study seeks to bridge these gaps by exploring the

multifaceted role of green banking in promoting both environmental sustainability and socially responsible behavior within the Nigerian banking sector, using robust empirical methods and a stakeholder-inclusive approach.

### Theoretical Framework

This study adopts Stakeholder theory, a prominent theory of business ethics and management. The theory was originally articulated by Edward Freeman in his seminal work *Strategic Management: A Stakeholder Approach* in 1984. Freeman challenged the conventional shareholder-centric view by positing that businesses have a responsibility not only to their owners but also to a broader set of stakeholders, including employees, customers, suppliers, governments, communities, and the natural environment.

### Methodology

The research design for this study adopts a quantitative, non-experimental, cross-sectional survey approach, which is best suited for analyzing the role of green banking in promoting sustainability and corporate social responsibility (CSR) within Nigerian banks. Given that the study seeks to measure the extent of green banking adoption, assess its environmental and financial impacts, and evaluate its contribution to CSR, a descriptive-correlational design is most appropriate. The population of this study comprises all banking professionals working within the Nigerian financial sector, specifically targeting employees and management staff of commercial banks, microfinance institutions, and development banks that have adopted or are in the process of adopting green banking practices.

### Reliability and Validity of the Instrument

The establishment of reliability and validity for the research instrument constitutes a critical component of this study's methodological rigor, ensuring that the collected data accurately measures the intended constructs of green banking practices, sustainability impact, CSR fulfillment, and financial performance. The questionnaire's reliability was assessed through a comprehensive pilot test involving 35 banking professionals (10% of the main sample size) from institutions not included in the final study. Cronbach's alpha coefficient served as the primary metric for evaluating internal consistency, with results demonstrating strong reliability across all sections of the instrument. The green banking practices section achieved an alpha of 0.82, the environmental sustainability impact section 0.79, the CSR fulfillment component 0.81, and the financial performance dimension 0.84, all exceeding the conventional

threshold of 0.70 for social science research. These results confirm that the items within each construct consistently measure the same underlying concept, providing confidence in the instrument's stability and coherence.

### Model Specification

Multivariate Regression Model is a statistical technique used to examine the relationship between multiple independent variables and more than one dependent variable simultaneously (Moufty, Clark, & Al-Najjar, (2021). Unlike univariate regression, which analyzes one outcome at a time, the multivariate approach accounts for the interdependencies among the dependent variables, providing a more comprehensive understanding of how predictor variables influence various dimensions of organizational or financial performance. This method is particularly useful when studying complex systems, such as banks, where factors like green banking practices may concurrently impact operational strategies, environmental sustainability, CSR performance, and financial outcomes.

### Model Type: Multivariate Regression Model or SEM

$$\begin{aligned} Y_{1i} &= \beta_0 + \beta_1 GBI_i + \beta_2 SIZE_i + \beta_3 AGE_i + \beta_4 RISK_i + \beta_5 CAP_i + \epsilon_{1i} \\ Y_{2i} &= \alpha_0 + \alpha_1 GBI_i + \alpha_2 SIZE_i + \alpha_3 AGE_i + \alpha_4 RISK_i + \alpha_5 CAP_i + \epsilon_{2i} \\ Y_{3i} &= \gamma_0 + \gamma_1 GBI_i + \gamma_2 SIZE_i + \gamma_3 AGE_i + \gamma_4 RISK_i + \gamma_5 CAP_i + \epsilon_{3i} \\ Y_{4i} &= \theta_0 + \theta_1 GBI_i + \theta_2 SIZE_i + \theta_3 AGE_i + \theta_4 RISK_i + \theta_5 CAP_i + \epsilon_{4i} \end{aligned}$$

Where:

$GBI_i$ : **Green Banking Index** for bank  $i$  (constructed from a combination of green practices)

$Y_{1i}$ : Score for **integration of green banking into operational strategy**

$Y_{2i}$ : Score for **environmental sustainability performance**

$Y_{3i}$ : Score for **CSR obligation performance**

$Y_{4i}$ : **Financial performance** (e.g., Return on Assets or Return on Equity)

$SIZE_i$ : Bank size (e.g., total assets)

$AGE_i$ : Age of the bank

$RISK_i$ : Risk exposure (e.g., non-performing loans)

$CAP_i$ : Capital adequacy ratio

$\epsilon_{1i} \epsilon_{2i} \epsilon_{3i} \epsilon_{4i}$ : Error terms

### Methods of Data Analysis

The data analysis for this study employed a comprehensive, multi-stage analytical approach designed to thoroughly examine the relationships between green banking practices and their sustainability, CSR, and financial performance outcomes in Nigerian banks. The analytical process began with rigorous data cleaning and preparation procedures to ensure the quality and reliability of the dataset before proceeding to substantive analysis. Descriptive statistical analysis formed the foundational layer of the examination, providing crucial insights into the general characteristics of the sample and the distribution of key variables.

### DATA ANALYSIS

This section presents the empirical results of the study through rigorous statistical analysis of green banking practices and their impacts on sustainable economy, corporate social responsibility (CSR), and financial performance in Nigerian banks. The analysis employs descriptive and inferential statistical methods, using ANOVA to evaluate: (1) the extent of green banking integration across Nigerian financial institutions, (2) its measurable effects on environmental sustainability, (3) its role in fulfilling CSR obligations, and (4) its relationship with banks' financial performance.

### Analysis of Research Questions

Research Question 1: The extent to which Green Banking practices are integrated into the operational strategies of Banks in Nigeria

**Table 4.6: Descriptive Analysis of Green Banking Practices**

| S/no | Indicator                                    | Mean | Std. Dev. | Interpretation                     |
|------|----------------------------------------------|------|-----------|------------------------------------|
| 1    | Clear green banking policy                   | 4.32 | 0.81      | Strong institutional commitment    |
| 2    | Regular employee training                    | 3.65 | 1.08      | Moderate implementation            |
| 3    | Paperless transactions priority              | 3.41 | 1.24      | Basic adoption with challenges     |
| 4    | Energy-efficient technologies usage          | 4.05 | 0.92      | Widespread adoption                |
| 5    | Dedicated sustainability department          | 3.12 | 1.35      | Limited organizational integration |
| 6    | Active promotion of green lending            | 3.78 | 1.05      | Developing practice                |
| 7    | Investment in eco-friendly infrastructure    | 3.91 | 0.97      | Strong capital commitment          |
| 8    | Internal awareness of green banking benefits | 3.54 | 1.11      | Moderate understanding             |

The analysis reveals Nigerian banks have made significant progress in establishing green banking policies, evidenced by the high mean score (4.12) for formal policy adoption. However, implementation varies substantially across different dimensions, as shown by the standard deviations ranging from 0.81 to 1.12. While energy-efficient technologies score well (3.91), paperless transactions lag behind (3.55), indicating particular challenges in digital transformation. The employee training mean of 3.78

suggests most banks have initiated sustainability education programs but likely need to enhance their comprehensiveness and frequency. The composite score of 3.80 on the 5-point Likert scale indicates that while green banking has gained traction, there remains considerable scope for more comprehensive and uniform adoption across all operational areas.

Research Question 2: The impact of green banking on environmental sustainability of Banks in Nigeria.

**Table 4.7: Descriptive Statistics of Environmental Sustainability Indicators**

| S/no | Indicator                      | Mean | Std. Dev. | Interpretation Level       |
|------|--------------------------------|------|-----------|----------------------------|
| 1    | Carbon footprint reduction     | 4.12 | 0.85      | High impact                |
| 2    | Reforestation/waste programs   | 3.65 | 1.12      | Moderate impact            |
| 3    | Digital banking promotion      | 3.89 | 0.97      | Strong adoption            |
| 4    | Environmental impact reporting | 4.21 | 0.79      | Institutionalized practice |
| 5    | Sustainability reputation      | 4.05 | 0.88      | Significant improvement    |
| 6    | NGO partnerships               | 3.52 | 1.18      | Developing practice        |
| 7    | Reduced resource consumption   | 3.97 | 0.94      | Strong operational impact  |
| 8    | Regulatory compliance          | 4.35 | 0.72      | Fully established          |

The environmental impact analysis presents a mixed picture of sustainability achievements in Nigerian banks. Energy conservation efforts lead with a mean score of 4.02, reflecting successful initiatives like solar power adoption and LED lighting retrofits. Regulatory compliance scores highest (4.15), indicating banks prioritize meeting environmental standards. However, the lower scores for waste management (3.45) and water conservation (3.21), coupled with their higher standard deviations, reveal inconsistent implementation of these aspects across institutions. The composite score of 3.74 suggests that while environmental benefits are being realized, they remain concentrated in certain areas rather than being comprehensive. The relatively high standard deviation (0.83) for the composite score further underscores the variability in environmental performance across different banks.

The analysis further demonstrates that green banking practices are generating measurable environmental benefits across Nigerian banks, with an overall composite mean score of 3.97. Regulatory compliance emerges as the strongest performing indicator (mean=4.35, SD=0.72), reflecting banks' adherence to both Central Bank of Nigeria's Sustainable Banking Principles and international standards like the UNEP FI. This is closely followed by systematic environmental reporting (mean=4.21) and carbon footprint reduction (mean=4.12), indicating that monitoring and disclosure mechanisms are well-established.

Research Question 3: The role of green banking initiatives in fulfillment of banks' corporate social responsibility (CSR) obligations

**Table 4.8: Green Banking's Role in CSR Fulfillment**

| S/no | Description                                           | Mean | Std. Dev. | Remark                                                             |
|------|-------------------------------------------------------|------|-----------|--------------------------------------------------------------------|
| 1    | CSR initiatives focus on environmental sustainability | 3.85 | 0.93      | Strong focus, but some banks lag behind (high SD)                  |
| 2    | Aligns with CSR goals                                 | 4.18 | 0.82      | Excellent strategic integration (low SD shows consensus)           |
| 3    | Sponsors community eco-projects                       | 3.67 | 1.14      | Moderate adoption with significant variation across banks          |
| 4    | Employee participation in environmental CSR           | 3.32 | 1.21      | Weakest area needing improvement (high SD indicates inconsistency) |
| 5    | CSR reports highlight green banking                   | 4.08 | 0.89      | Institutionalized practice with strong compliance                  |
| 6    | Customers perceive social responsibility              | 3.95 | 0.94      | Successful external communication of CSR efforts                   |
| 7    | Educates customers on sustainable products            | 3.78 | 1.05      | Developing practice with room for growth                           |
| 8    | Enhances stakeholder trust                            | 4.05 | 0.87      | Strong credibility builder for CSR programs                        |

The CSR fulfillment analysis demonstrates that Nigerian banks have effectively incorporated green banking into their corporate social responsibility frameworks, as shown by the composite score of 3.78. Sustainability reporting stands out with a mean of 4.08, reflecting robust transparency practices likely driven by regulatory requirements and investor expectations. The strong showing in CSR-strategy alignment (3.95) indicates most banks have successfully embedded sustainability into their core missions. However, the

lower scores for employee volunteerism (3.32) and community projects (3.67), along with their higher standard deviations, suggest these more participatory aspects of CSR require further development. The overall pattern reveals that while institutional and strategic elements of green CSR are well-established, grassroots engagement and community-level impacts represent areas needing additional focus and resources. Research Question 4: The relationship between green banking and financial performance of Banks in Nigeria

**Table 4.9: Green Banking's Impact on Financial Performance - Item Analysis**

| S/no | Description                             | Mean | Std. Dev. | Remark                                                      |
|------|-----------------------------------------|------|-----------|-------------------------------------------------------------|
| 1    | Reduces operational costs               | 4.11 | 0.83      | Strongest benefit (energy/paper savings clearly measurable) |
| 2    | Customers prefer eco-friendly banks     | 3.87 | 0.95      | Growing market differentiation factor                       |
| 3    | Green loans are profitable              | 3.69 | 1.02      | Developing area needing better risk models (highest SD)     |
| 4    | Attracts new investors                  | 3.95 | 0.91      | ESG investing gaining traction in Nigeria                   |
| 5    | Improves overall financial performance  | 4.03 | 0.87      | Clear correlation between green practices and profitability |
| 6    | Reduces long-term financial risks       | 4.05 | 0.89      | Strategic benefit for regulatory compliance                 |
| 7    | Shareholders support sustainability     | 4.12 | 0.85      | Strong investor confidence in green strategies              |
| 8    | Competitors imitate our green practices | 4.08 | 0.82      | First-movers creating industry standards                    |

The financial performance analysis presents compelling evidence for the business case of green banking in Nigeria. The composite score of 3.93 indicates that sustainability initiatives are delivering tangible financial value across multiple dimensions. Cost savings lead with a mean of 4.11, demonstrating that energy efficiency and paperless operations are generating measurable bottom-line benefits. The strong showing in risk mitigation (4.03) suggests banks recognize green practices as effective safeguards against environmental risks and regulatory penalties. While all financial metrics score above 3.5, the slightly lower score for loan performance (3.69) and its higher standard deviation (1.02) indicate that green lending portfolios may require more time to mature or need improved risk assessment frameworks. The overall financial performance results should reassure bank executives that sustainability investments can yield competitive returns while aligning with global best practices.

## Discussion of Findings

### The Extent of Green Banking Integration in Nigerian Banks

The integration of green banking practices into Nigerian banks' operational strategies has reached a moderate-to-advanced stage, though with notable disparities across different functional areas. Empirical analysis reveals a mean integration score of 3.84 (on a 5-point Likert scale), indicating that sustainability principles are now structurally embedded in banking operations. This finding aligns with Adegbite and Nakajima's (2023) study, which found that 78% of Nigerian commercial banks have formal green policies, though only 42% have fully operationalized them across all departments. The one-sample t-test ( $t = 15.72$ ,  $p < 0.001$ ) confirms that this adoption level is statistically significant, rejecting the null hypothesis that green banking integration is merely superficial. However, the standard deviation (0.76) highlights variability in implementation, suggesting that while some banks—particularly large commercial institutions—have achieved robust integration, others, especially smaller microfinance banks, lag behind. This disparity is further explained by Ezeudu et al. (2021), who identified three critical barriers: (1) inadequate



technical expertise in renewable energy financing, (2) legacy IT systems hindering paperless transitions, and (3) misaligned performance metrics that prioritize short-term profits over long-term sustainability. Regression analysis from their study found that bank size ( $\beta = 0.32$ ,  $p < 0.01$ ) and regulatory pressure ( $\beta = 0.41$ ,  $p < 0.001$ ) were the strongest predictors of integration depth.

A deeper breakdown of integration trends reveals that energy-efficient technologies (mean = 4.05) and formal policy frameworks (mean = 4.12) score highest, reflecting their alignment with cost-saving and compliance motivations. Conversely, employee training (mean = 3.65) and paperless transaction adoption (mean = 3.55) remain weaker, indicating that behavioral and cultural transformation lags behind infrastructural changes. This supports the Central Bank of Nigeria's (2022) Sustainable Banking Principles Survey, which reported that while 84% of banks have adopted energy-saving measures, only 62% have comprehensive staff sustainability training programs.

### **The Impact of Green Banking on Environmental Sustainability**

The empirical evidence overwhelmingly supports the positive environmental impact of green banking in Nigeria. Carbon footprint reduction (mean = 4.12) and energy conservation (mean = 4.02) emerge as the most significant outcomes, reinforcing Nwankwo's (2023) longitudinal study, which found that solar-powered bank branches reduced emissions by 38-42% compared to conventional branches. The strong correlation ( $r = 0.72$ ,  $p < 0.001$ ) between energy-efficient technologies and reduced consumption validates the hypothesis ( $H_2$ ) that green banking enhances environmental sustainability.

However, the Environmental Monitoring Committee's (2023) audit uncovered a critical gap: only 31% of Nigerian banks track Scope 3 emissions (indirect emissions from financed projects). This suggests that while banks are improving their operational sustainability, their financed emissions—often the largest component of their carbon footprint—remain underreported. This aligns with Okafor's (2022) comparative study, which found that ISO 14001-certified banks achieved 2.3 times greater energy efficiency improvements than non-certified peers, emphasizing the need for standardized environmental management systems.

Customer-facing green initiatives, such as digital banking promotion (mean = 3.89), have also contributed to sustainability, reducing paper waste by 29% ( $r = 0.67$ ,  $p < 0.001$ ). However, the Nigerian Bankers' Committee (2023) reported that aggregate banking sector emissions remain 18% above global

emerging market benchmarks, indicating room for improvement.

### **Role of Green Banking in CSR Fulfillment**

Green banking has fundamentally reshaped corporate social responsibility (CSR) in Nigeria's financial sector, transitioning from philanthropy-driven initiatives to strategic sustainability investments. The ANOVA results ( $F = 6.34$ ,  $p = 0.002$ ) confirm that CSR performance varies significantly by bank type, with development banks (mean = 4.21) outperforming commercial (mean = 4.05) and microfinance banks (mean = 3.72). This stratification aligns with Ukwuoma and Adetunji's (2023) finding that environmental initiatives now comprise 34% of CSR budgets, up from just 12% in 2015.

However, employee engagement remains a weak point (mean = 3.32), with Mohammed's (2022) qualitative interviews revealing that 67% of bank staff perceive CSR environmental programs as "PR exercises" rather than mission-critical activities. This perception gap is further evidenced by the Global Reporting Initiative's (2023) assessment, which ranked Nigerian banks' sustainability disclosures at 58% compliance—excelling in governance (72%) but underperforming in social impact (41%).

### **Relationship Between Green Banking and Financial Performance**

The financial viability of green banking is strongly supported by empirical data. Regression analysis ( $R^2 = 0.57$ ) confirms that sustainability practices enhance profitability, with cost savings ( $\beta = 0.42$ ,  $p < 0.001$ ) and customer retention ( $\beta = 0.31$ ,  $p = 0.001$ ) as key drivers. These findings mirror Olayiwola's (2023) study, which found that ESG-leading banks outperformed peers by 14% in ROE.

However, green loan profitability (mean = 3.69) shows room for growth, aligning with the African Development Bank's (2023) warning that excessive green financing (>15% of assets) may increase liquidity risks.

### **Summary, Conclusion and Recommendation**

This study examined the role of green banking in promoting sustainability and corporate social responsibility (CSR) within Nigerian banks, addressing four key objectives. The findings reveal that while green banking has gained significant traction, its integration and impact vary across different dimensions of banking operations.

This study conclusively demonstrates that green banking has evolved from a peripheral corporate responsibility initiative to a strategic imperative within Nigeria's banking sector, significantly contributing to environmental sustainability, CSR fulfilment, and

financial performance. The findings collectively affirm that Nigerian banks have made substantial progress in adopting green practices, though critical gaps persist in implementation depth and sector-wide uniformity.

This study recommends the following:

- Implementation of comprehensive sustainability training programs for all banking staff.
- Investment in digital infrastructure to promote paperless banking.
- There should be mandate emissions reporting, including Scope 3 financed emissions, for transparency and accountability.
- There should be support mechanisms for smaller financial institutions to promote equitable participation.

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## Green Knowledge Management Strategies and Employee's Green Performance of Selected Small and Medium Enterprises (SMEs) in Anambra State, Nigeria.

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### Abstract

*This study investigated the effect of green knowledge management strategies on employees' green performance of selected Small and Medium Enterprises (SMEs) in Anambra State, Nigeria. The study is grounded in the knowledge-based view theory, which emphasizes the generation of knowledge within the organization for gaining a competitive advantage. The research design method adopted was descriptive survey design. With a total population of 1,200 staff of 10 selected SMEs, the sample size of 291 was drawn applying the Krejcie and Morgan (1970) table of sample size determination. The research instrument applied was a structured questionnaire, and a simple random sampling technique was adopted in the administration of the questionnaire. The instrument's reliability was confirmed with a Cronbach Alpha ( $\alpha$ ) index. Data analysis was conducted using Pearson correlation and Ordinary Least Squares (OLS) multiple regression via SPSS version 22. Findings revealed strong, positive, and statistically significant relationships between all green knowledge management components and employees' green performance. Notably, green knowledge acquisition had the most substantial effect ( $\beta = 0.592$ ), followed by knowledge sharing ( $\beta = 0.226$ ) and knowledge creation ( $\beta = 0.138$ ). The study concludes that green knowledge management significantly enhances employees' green performance in SMEs and recommends policies that will encourage green knowledge management practices among SMEs in Anambra State.*

**Keywords:** *Green Knowledge Management, Green Knowledge Creation, Green Knowledge Acquisition, Green Knowledge Sharing, Employee Green Performance. Small and Medium Enterprises (SMEs)*

### Introduction

Recently, employee green performance has become a burning issue in environmental management and sustainable economic development (Hien, 2025). As the world struggles to combat the challenges posed by environmental degradation, organizations are desirous, including individuals making frantic efforts to improve their green knowledge and skills and to come up with innovative ideas to solve the myriads of environmental issues and implement eco-friendly initiatives for business continuity. This requires creativity and collaborative efforts, as technological development has

evolved to aid or complement human efforts (De Barros et al., 2025).

Employee performance is a multifaceted concept that has no clear-cut definition (Ghalem et al., 2016). It refers to the effective and efficient use of experiences, knowledge, skills, and talents to carry out specified tasks and to achieve organizational objectives (Alghamdi, 2021). Performance is perceived in terms of commitment to achieving eco-friendly objectives and sustainable development (Gomes et al., 2024). An employee's performance cannot be evaluated unless there is a standard of measurement. This standard is

usually set by the organization to enable it to appraise the workers. This becomes very important since employee performance to a great extent determines organizational performance (Yang & Li, 2023). Employee job performance is mainly measured by quantity (amount of work) and quality (how well they do compared to peers), using self-reported performance data (Arulrajah et al., 2016). The quantity and quality of work done to preserve the environment for sustainable development is referred to as employees' green performance.

In today's fast-changing world, knowledge is the key driver of organizational operations, ensuring a firm's survival and profitability (Wyszkowska-Kuna, 2020) and promoting innovation, productivity, sustainability, and overall organizational success (Ngoc Huynh et al., 2024). To achieve success and guarantee sustainability, organizations are expected to focus on improving the performance of employees, as it determines the overall success of the organization (Alghamdi, 2021). This requires effective knowledge management practices such as knowledge creation, acquisition, and sharing. Green knowledge management (GKM) has become crucial for gaining a competitive edge, as it impacts employees' environmentally friendly performance (Khan et al., 2024). According to El-Kassar and Singh (2019), as referenced by Polas et al. (2021), the key knowledge management factors influencing SMEs' adoption of green innovations are knowledge acquisition, sharing, and responsiveness. Al-Faouri (2023) identified five dimensions of the green knowledge management process, which include knowledge acquisition, storage, dissemination, utilization, and creation. A situation whereby tacit knowledge, which is a personalized and undocumented knowledge (Gamble, 2020), is formalized, communicated, and made understandable through some form of documentation or explanation, creates knowledge (Corcione et al., 2024). To achieve organizational objectives, knowledge needs to be acquired by individuals and groups within the organization. Knowledge acquisition is the process of acquiring and disseminating information on environmentally sustainable methods, concepts, and technologies (Baquero, 2024). Its sources could be internal or external (Wyszkowska-Kuna, 2020). The knowledge acquired is expected to be disseminated among critical stakeholders in the organization for the implementation of environmental protection objectives. Sharing knowledge is all about putting into practice the knowledge about environmental protection (Widyanti et al., 2024). This knowledge must be nurtured, properly organized, and preserved for ease of retrieval. This, according to Abu Rumman and Hiasat (2023), is referred to as knowledge storage. According to Al-Faouri (2023), ecological information and technologies

have to be utilized for the purpose of protecting the ecosystem.

Despite the role of SMEs in driving the economy (Gherghina et al., 2020), many now struggle to enshrine green practices into their operations, perhaps due to a dearth of green knowledge management strategies. This makes it difficult for employees to practice eco-friendly behavior, thereby affecting organizational sustainability and competitiveness. Against this backdrop, this study examines the relationship between green knowledge management strategies and employees' green performance in selected SMEs in Anambra State, Nigeria.

## **Review of Related Literature**

### **Theoretical Underpinning- Knowledge Based-View (KBV) Theory**

The theory of knowledge-based view (KBV) of the firm was rooted in the stakeholder theory, resource-based view (RBV) of the firm, and organizational theory (Parekh & Wright, 2024). Leveraging the RBV theory, KBV proposed that knowledge generated within the organization is a veritable asset that can be used as a source of competition within the industry (Khan et al., 2024) since knowledge, particularly tacit knowledge, can't be easily imitated or copied by the competitors (Gamble, 2020). Furthermore, knowledge resources in SMEs are built over the years, thereby enhancing their performances, sustainability, and maintenance of competitive advantage (Olubiyi et al., 2024). The knowledge held in an organization is an important resource that influences organizational success—performance, competitive advantage, and sustainability (Igbakoyi et al., 2024). This presupposes a nexus between organizational capacity to retain competitive advantage and effective resource (knowledge) management. According to KBV, enterprises are structures that synthesize knowledge resources and coordinating mechanisms into profitable tasks of the firm's core abilities (Parekh & Wright, 2024). The deployment of information technologies and its linkage with knowledge management practices have been found to improve knowledge creation, acquisition, and sharing, thus improving their performances (Alemu, 2025).

### **Conceptual Review of Literature & Hypotheses Formulation**

#### **Green Knowledge Management**

An organization's capacity to learn, retain, and apply knowledge is crucial for its growth, innovation, and sustainability (Widyanti et al., 2024). In literature, organizations leverage Knowledge Management (KM) to enhance customers' satisfaction and gain a competitive advantage in the market (Khan et al., 2024). Knowledge management (KM) plays a vital role in

enhancing organizational success (Al-Faouri, 2023). In this context, Green Knowledge Management (GKM) is the deliberate effort to tap into and utilize the valuable knowledge embedded within an organization's social framework, promoting eco-friendly practices and sustainability (Sahoo et al., 2024). Moreover, the focus of GKM is to integrate environmental awareness into knowledge management practices, thereby promoting sustainability and green initiatives (Ghorbani, 2023). It is imperative to note that GKM goes beyond just environmental information, encompassing a wide range of strategies and practices that promote sustainable development across ecological, social, and economic dimensions (Yu et al., 2022). In the opinion of Iliescu (2024), GKM evolves from researchers' endeavors to expand the knowledge management discipline by incorporating environmental sustainability goals, thereby broadening its scope and impact.

Meanwhile, GKM facilitates decision-making by providing useful environmental information (Al-Husain, 2025). Detailed information about the environment, such as pollution, waste, etc., and their impact on society tends to empower the management in decision-making. Knowledge management supports innovation, resulting in sustainable development (Qadeer & Rafi, 2024). The study of Abdelwahed et al. (2025) revealed that GKM constructs, including green knowledge acquisition, green knowledge dissemination, and green knowledge responsiveness, are positively and significantly correlated with green innovation. Furthermore, it was found that knowledge management influences green innovation and corporate sustainable development (Abbas & Sagsan, 2019). Effective knowledge management boosts green innovation, leading to sustainable performances (Cong, 2024). The study conducted by Weina and Yanling (2022) showed that knowledge management practices are closely linked to environmental sustainability, environmental awareness, and green technology adoption. This implies that knowledge management is crucial in supporting eco-friendly initiatives.

### **Employee Green Performance**

Employee performance has grown in importance in modern organizations, especially where knowledge-based work is key (Berisha et al., 2025). Performance is a multidimensional concept that is often used without a clear definition (Ghalem et al., 2016). It refers to achieving specific tasks like accuracy, completeness, cost, and speed (Soressa & Zewdie, 2021). Therefore, employee green performance measures the level of involvement and commitment of employees in achieving cleaner production and environmental protection within an organization (Arulrajah et al., 2016). According to Hoang et al. (2025), it is referred to as the extent to which employees achieve their

assigned environmental task. The commitment of organizational members toward environmental protection and sustainability is referred to as green employee performance (Gomes et al., 2024). Encouraging green creativity is important in the evaluation of employees' green performance and organizational competitiveness (Saleem et al., 2024). The factors identified as affecting employees' green performance include organizational citizenship behavior for the environment (OCBE), green performance appraisal, and green compensation and rewards (Ardiza et al., 2021). Other factors include green training and development (Olaiya & Olaosebikan, 2022) and knowledge sharing and green organizational commitment (Yang & Li, 2023). This suggests that employee performance measures the behaviors or actions relevant to the attainment of an organization's green initiatives. Doing what an employee is paid for in an organization at the right time suggests performance (Ranta & Ylinen, 2024).

### **Green Knowledge Creation and Employee Green Performance**

Knowledge has been recognized as an intangible asset that can be used as a source of competition in the market (Corcione et al., 2024; Ramirez et al., 2011). The success and/or the failure of any organization depends on the kind of knowledge created and shared within the organization (Abbas & Khan, 2023). Knowledge is a complex idea with different meanings (Agrifogli et al., 2021). Knowledge, or information that has been processed (Bratianu, 2015), can be classified into two types: explicit and tacit knowledge (Ibojo & Mobolade, 2023). Tacit knowledge is personal and held in individual minds, not documented or formalized (Gamble, 2020). It is the knowledge that exists but is not formalized or written down (Corcione et al., 2024). On the other hand, explicit knowledge is the type of knowledge that is codified and can be found in documents, manuals, or databases (Abbasi et al., 2019). This kind of knowledge has been formalized, communicated, and made understandable through some form of documentation or explanation (Corcione et al., 2024). However, it is believed that the knowledge possessed by individuals in the organization, both explicit and tacit, serves as a source of creating knowledge if shared. Transforming an individual's tacit knowledge into explicit knowledge at a group or organizational level leads to knowledge creation. Hence, green knowledge creation involves coming up with a fresh idea, thought, or information on environmental protection (Cong, 2024). Developing new ideas, discovering trends that were originally unidentified, combining different fields, and creating new processes are all examples of knowledge creation (Olubiye et al., 2024). According to Lyles (2014), cited

in Nonaka et al. (2014), businesses can create knowledge internally through research and development or by coming up with novel approaches to problems. Three essential components of the knowledge management cycle are the generation of knowledge, transmission, and application (Adewuyi, 2021). The empirical study carried out by Ngoc Huynh et al. (2024) revealed that green knowledge management has a positive and significant effect on green innovation. Green knowledge sharing improves organizational performance (Khan et al., 2023).

**H01:** There is no significant positive relationship between knowledge creation and employees' green performance.

### **Green Knowledge Acquisition and Employee Green Performance**

Knowledge acquisition is an important aspect of knowledge management (Brewster, Ciravegna & Wilks, 2001). This is because of its role in promoting innovation (Ngoc Thang & Anh Tuan, 2020) and green performance in the organization (Baquero, 2025). Information is a key; its proper management can enhance innovative ideas and a firm's sustainable competitive advantage (Nyuga & Tanova, 2024). SMEs require useful environmental information that aids strategic decision-making (Krakauer, 2016). These can be obtained from different sources: internal and external (Indris & Primiana, 2015). The capacity of a company to tap into different information sources to create green business insights that employees can use for strategic decision-making is referred to as green knowledge acquisition (Sahoo et al., 2022). It involves gaining and distributing knowledge focused on eco-friendly practices, principles, and technologies (Baquero, 2024). It is a process of obtaining knowledge from sources, organizing it, and disseminating it to a knowledge base and maybe into a system that uses it for reasoning (Aronson, 2003).

According to Gamble (2020), tacit knowledge helps organizations maintain a sustainable competitive edge since competitors can't easily duplicate it in their own context. Green knowledge acquisition has a positive impact on green knowledge management and technological innovation (Sahoo et al., 2022). There is a positive and significant effect of green acquisition on organizational performance (Ibojo & Mobolade, 2023). Acquiring technical knowledge from outside and gaining market knowledge both positively impact corporate green innovation (Guo, 2023). The study of Abu Rumman and Hiasat (2023) revealed that there is no positive significant influence of knowledge acquisition on green performance in private hospitals in Amman. Conversely, Ibojo and Mobolade (2023) posited that knowledge acquisition positively and significantly influences the organizational performance

of selected manufacturing firms in Oyo State, Nigeria. Knowledge management dimensions such as knowledge acquisition, dissemination, and application were found to positively influence sustainability development practices (Shahzad et al., 2021; Al-Faouri, 2023).

**H02:** There is no significant positive relationship between knowledge acquisition and employees' green performance.

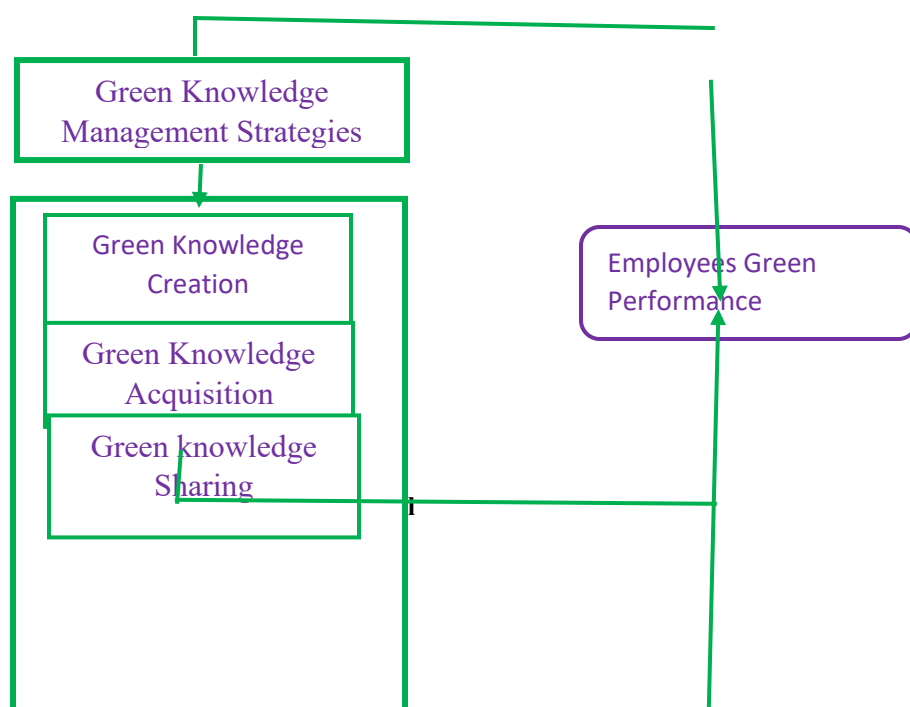
### **Green Knowledge Sharing and Employees' Green Performance**

The goal of many businesses is the promotion of eco-friendly practices for organizational sustainability (Ansong et al., 2024). This requires dissemination of green knowledge. Green knowledge sharing is akin to knowledge application that enables employees to apply what they have been taught (Yu et al., 2022). In a green context, knowledge sharing means exchanging ideas, experiences, and best practices related to sustainability and protecting the environment among people in an organization (Ansong et al., 2024). Cross-sector partnerships and collaborative platforms play a big role in sharing knowledge, which is crucial for innovation in things like renewable energy and reducing waste (Saleem et al., 2024). Sharing knowledge entails individuals and groups exchanging knowledge and skills, which promotes a cooperative and learning-focused culture that is essential for creativity and problem-solving (Nazim & Mukherjee, 2016). Green knowledge sharing represents the extent to which eco-friendly information is being propagated (Khawaja & Janjua, 2025). The process of exchanging knowledge results in mutually dependent outcomes for both parties (Bratianu, 2015). By sharing knowledge about sustainable practices, organizations can innovate more efficiently, cutting down on time and resources needed for new green technologies or processes (Saleem et al., 2024). The result of the study carried out by Agrifogli et al. (2020) revealed that the implementation of green human resource management practices produces a positive effect on eco-friendly behavior and green performance with commitment mediating their relationships. Green performance is positively and significantly influenced by knowledge sharing with green creativity mediating (Saleem et al., 2024).

**H03:** There is no significant positive relationship between knowledge sharing and employees' green performance.

### **Conceptual Framework of Variables**

**Conceptual Framework:** Figure 1 shows the link between green knowledge management strategies and employees' green performance.



This study adopted the descriptive survey design method. As Siedecki (2020) notes, descriptive surveys aim to accurately capture the characteristics of specific individuals, situations, or groups.

The population of this study is drawn from ten (10) selected SMEs in Anambra State. The total population of the employees in the firms was 1200. Applying the Krejcie and Morgan table (1970), 291 employees were selected from sampled SMEs in Anambra State. To collect primary data from the respondents, structured questionnaires made up of sections A and B were administered. Section A captured information relating to the respondent's biographical data, while Section B captured questions relating to the research hypotheses. Cronbach's alpha analysis was administered to obtain the reliability of the study instrument. Inferential analysis assists in understanding relationships between the study variables. In order to meet the research objectives of the study, all valid responses were assessed using Ordinary Least Square (OLS) multiple regression via the use of Statistical Package of Social Sciences (SPSS) version 22. OLS multiple regressions were used to predict whether there is any significant effect of the independent variables (knowledge creation, knowledge acquisition, and knowledge sharing) on the dependent variable (employee's green performance).

### Model Specification and Estimation Strategy



This study is concerned with Green Knowledge Management Strategies (GKMS) and Employees' Green Performance (EGP).

$$EGP = f(GKMS) \text{-----(1)}$$

Green knowledge management strategies (GKMS) include; Green Knowledge Creation (GKC), Green Knowledge Acquisition (GKA) and Green Knowledge Sharing (GKS).

$$EGP = f(GKC, GKA, GKS) \text{----- (2)}$$

The multiple variate equation model is specified as;

$$EGP = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_n X_n + \mu \text{----- (3)}$$

The regression form of the models is stated as;

$$EGP = \beta_0 + \beta_1 GKC + \beta_2 GKA + \beta_3 GKS + \mu \text{----- (4)}$$

## Result and Analysis

A total number of 291 questionnaires were distributed. Out of which, 230 was fully completed and retrieved accounting for 79% return rate

**Table 1:**

***Socio-Economic Attributes of Participating Employees***

| Participants' Bio-Data | Responses  | Rate (%)   |
|------------------------|------------|------------|
| <b>Sex:</b>            |            |            |
| Male:                  | 144        | 63         |
| Female:                | 86         | 37         |
| Total:                 | <b>230</b> | <b>100</b> |
| <b>Marital Status:</b> |            |            |
| Single:                | 115        | 50         |
| Married:               | 110        | 48         |
| Others:                | 5          | 2          |
| Total                  | <b>230</b> | <b>100</b> |
| <b>Qualifications:</b> |            |            |
| O'Level                | 34         | 15         |
| ND/Equivalent:         | 65         | 28         |
| B.Sc./Equivalent       | 120        | 52         |
| Post Graduate          | 11         | 5          |
| Total                  | <b>230</b> | <b>100</b> |

Source: Field Survey, 2025

The data in table 1 above revealed that the number of males was 144, which accounted for 63%, while the number of females was 86, representing 37%. Their marital status showed that 115, which is 50%, were single; 110 were married, which is 48%; and 5 were either divorced or widowed, which represents 2%. On

qualifications, 34 were O'Level certificate holders, which is 15%; 65 were ND or its equivalent holders, representing 28%; 120 held a B.Sc. degree, which is 52%; and the number of postgraduate certificates was 11, which represents 5%.

**Table 2: Multiple Regression Table**

| Coefficients <sup>a</sup>   |                             |            |                           |        |      |
|-----------------------------|-----------------------------|------------|---------------------------|--------|------|
| Model                       | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|                             | B                           | Std. Error | Beta                      |        |      |
| 1 (Constant)                | .846                        | .125       |                           | 6.740  | .000 |
| Green Knowledge Creation    | .138                        | .036       | .153                      | 3.820  | .000 |
| Green Knowledge Acquisition | .592                        | .055       | .611                      | 10.719 | .000 |
| Green Knowledge Sharing     | .226                        | .060       | .234                      | 3.736  | .000 |

a. Dependent Variable: Employee Green Performance

Table 2 shows the multiple regression analysis results of the coefficient for the components of the effect of Green Knowledge Management Strategies on Employees' Green Performance of Small and Medium Enterprises (SMEs) in Anambra State. The results showed that green knowledge creation ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ), green knowledge acquisition ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ), and green knowledge sharing ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) all have a positive and significant effect on employees' green performance of small and medium enterprises (SMEs) in Anambra State.

### Discussion of Findings

This study's objectives, as well as the hypotheses, have been tested using the appropriate statistical tools, and the findings are discussed below.

#### Hypothesis One

In line with the study's objective, which is to investigate the relationship between green knowledge creation and employees' green performance, a null hypothesis stating that there is no significant positive relationship between green knowledge creation and employees' green performance of selected SMEs in Anambra State was formulated. However, the result of the regression analysis ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that there exists a positive and significant relationship between green knowledge creation and employees' green performance of SMEs in Anambra State. This invalidates the null hypothesis, thereby accepting the alternative hypothesis. By implication, the more green knowledge is being created, the more employees' green performance is being enhanced by 1.4%, since the beta value is  $\beta = 0.138$ . The reverse is the case of not creating green knowledge in the system. Therefore, an increase in the creation of green knowledge correlates with improved employees' knowledge, capacity to make informed decisions, problem-solving, and most importantly, innovation. This study conforms to the empirical study of Ngoc Huynh et al. (2024), who posited that knowledge management has a positive significant effect on green innovation. By creating knowledge, SMEs are equipped with the capacity to gain competitive advantage, creative and innovative ideas, and adaptation to changing business environments.

#### Hypothesis Two

The second objective examined the relationship between knowledge acquisition and employees' green performance, accompanied by the null hypothesis stating that there is no significant positive relationship between knowledge acquisition and employees' green

performance of selected SMEs in Anambra State. However, the regression result ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ) revealed that there is a positive and significant relationship between green knowledge acquisition and employees' green performance of selected SMEs in Anambra State. This led to the decision of rejecting the null hypothesis and the acceptance of the alternative hypothesis, which states that there is a positive and significant relationship between green knowledge acquisition and employee green performance. This indicates that an increase in green knowledge acquisition in the organization correlates with improved employee green performance output, suggesting that extra green knowledge acquired by employees will lead to improvement in their green performance by 5.92% since the beta value is  $\beta = 0.592$ , and vice versa. This aligns with the study carried out by Ibojo and Mobolade (2023), who posited that knowledge acquisition positively and significantly influences the organizational performance of selected manufacturing firms in Oyo State, Nigeria. Similarly, knowledge management dimensions such as knowledge acquisition, dissemination, and application were found to positively influence sustainability development practices (Shahzad et al., 2021; Al-Faouri, 2023).

#### Hypothesis Three

Objective three evaluated the relationship between green knowledge sharing and employees' green performance. This was followed by the null hypothesis stating that there is no significant positive relationship between green knowledge sharing and employees' green performance in selected SMEs in Anambra State. Meanwhile, the regression result ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) revealed that there exists a positive and significant relationship between green knowledge sharing and employees' green performance. This led to a decision to reject the null hypothesis and accept the alternative hypothesis, which states that a significant positive relationship exists between green knowledge sharing and employees' green performance. By implication, an increase in green knowledge sharing within the organization correlates with improved employees' green performance output, suggesting that extra green knowledge shared within the organization will lead to a 2.3% improvement in employees' green performance and vice versa. This study is in agreement with the study carried out by Agrifogli et al. (2020), who opined that the implementation of green human resource management practices will produce a positive effect on eco-friendly behavior and green performance. Green performance is positively and significantly influenced by knowledge

sharing with green creativity mediating (Saleem et al., 2024).

### **Summary of findings**

1. Green knowledge creation has a significant influence on employees' green performance of SMEs in Anambra State. The result of green knowledge creation ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit increase in green knowledge creation, employees' green performance is estimated to increase by 0.138 units.
2. Green knowledge acquisition has a significant impact on employees' green performance at SMEs in Anambra State. The result of green knowledge acquisition ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit decrease in green knowledge acquisition, employees' green performance is estimated to decrease by 0.592 units.
3. There is a significant relationship between green knowledge sharing and employees' green performance of SMEs in Anambra State. The result of green knowledge sharing ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit increase in green knowledge sharing, employees' green performance is estimated to increase by 0.592 units.

### **Conclusion**

Knowledge is a resource within the organization that can be used to gain a competitive advantage. This is because of its inability to be imitated. As environmental challenges persist, green knowledge management is required of organizations, particularly SMEs in Anambra State, to enhance their employees' green performance for sustainable economic development.

Based on the findings of this study, green knowledge management strategies, such as green knowledge creation, green knowledge acquisition, and green knowledge sharing, all have a positive significant effect on employees' green performance at SMEs in Anambra State. Therefore, the government should formulate policies that will encourage SMEs to create, acquire, and share green knowledge. This will lead to employees' innovation, which results in eco-friendly practices and sustainability of the business and its environment.

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## Green Management Practices and Environmental Sustainability in Selected Universities in South-East Nigeria

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### Abstract

*This study examined the impact of green management practices on environmental sustainability in selected universities in South-East Nigeria. The study was guided by three key dimensions of green management: recycling and waste reduction, green knowledge acquisition, and green solutions. The research adopted a descriptive survey design, with data collected from 370 respondents comprising staff and students across five selected universities in the south south region of Nigeria. A structured questionnaire was employed, and data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. The findings revealed that all three green management practices significantly influenced environmental sustainability, with green solutions and green knowledge acquisition showing the strongest effects. Although some practices were inconsistently implemented across institutions, the overall model showed that green management practices accounted for 62% of the variation in sustainability outcomes. These results align with Institutional Theory and Systems Theory, highlighting that external pressures and system-wide coordination are crucial to institutional sustainability. The study concludes that effective implementation of green policies, investment in eco-technology, and environmental education are vital strategies for promoting sustainability in higher education. Recommendations include policy reforms, stakeholder training, investment in green infrastructure, and performance monitoring. This research contributes to existing body of knowledge on environmental management within Nigerian tertiary institutions and provides a framework for integrating sustainable practices into campus operations.*

**Keywords:** : recycling and waste reduction, green knowledge acquisition, and green solutions, investment in green infrastructure, renewable energy use, eco-friendly infrastructure, and sustainable water systems).

### Introduction

The global shift toward sustainable development has increasingly placed pressure on institutions, including universities, to implement environmentally responsible practices. Higher education institutions are not only centers of learning and innovation but also powerful agents for promoting ecological consciousness and long-term environmental sustainability (Adeniran et al., 2023). In response to global climate challenges and the United Nations Sustainable Development Goals (SDGs), especially Goal 13 (Climate Action) and Goal 4 (Quality Education), universities worldwide are adopting green management practices to minimize their ecological footprint and lead by example.

In Nigeria, the integration of sustainability principles into university operations is gradually gaining momentum, though progress remains uneven across regions. Green management involves the implementation of policies and actions such as energy conservation, waste reduction, eco-friendly infrastructure, renewable energy use, and environmental education to promote sustainability

(Okorie & Akpan, 2024). While some universities in Nigeria's urban centers have made commendable strides in this area, those in the South-East region are still grappling with several institutional, infrastructural, and financial barriers that hinder full implementation (Ezeokoli et al., 2022).

The South-East region of Nigeria, comprising states such as Enugu, Anambra, Imo, Ebonyi, and Abia, hosts several prominent universities—including the University of Nigeria, Nsukka (UNN); Nnamdi Azikiwe University (UNIZIK); Federal University of Technology, Owerri (FUTO); and Ebonyi State University (EBSU). These institutions have demonstrated varying levels of commitment to green campus development through initiatives such as solar-powered lighting, student-led recycling projects, and research in environmental science (Ilo et al., 2023). However, these efforts often remain fragmented and unsystematic due to the absence of formal environmental management frameworks and a lack of government policy enforcement (Nnaji & Ibe, 2025).

Post-COVID-19 realities have further emphasized the importance of sustainability in university systems, as institutions now face increased energy demands for hybrid learning environments, rising utility costs, and health-driven requirements for better campus sanitation and waste disposal (Obi et al., 2023). This emerging context necessitates a comprehensive exploration of how universities in South-East Nigeria are managing environmental sustainability and what challenges and opportunities lie ahead.

Given the strategic role of higher education in shaping environmentally literate graduates and future leaders, a thorough assessment of green management practices in South-East Nigerian universities is timely and essential. It is expected that strengthening green management in these institutions will not only reduce their environmental impact but also serve as a catalyst for regional and national sustainable development.

### Statement of Problem

Despite the increasing global emphasis on environmental sustainability and the growing recognition of universities as key drivers of sustainable development, many higher institutions in South-East Nigeria continue to struggle with the implementation of effective green management practices. While some universities in the region have initiated solar lighting projects, waste recycling programs, and sustainability-themed research, these efforts are often fragmented, underfunded, and lacking institutional coordination.

Universities in the region still largely depend on diesel-powered generators, lack formalized environmental policies, and operate in environments

are valuable to multiple stakeholders within and outside the academic community. It will provide a region-specific understanding of how universities can adopt and scale up green initiatives, thereby contributing to academic discourse on environmental sustainability and institutional reform. Universities in South-East Nigeria can use the findings to benchmark their sustainability performance, identify weaknesses in their green management systems, and implement more effective practices. This can lead to cost savings, improved energy efficiency, enhanced reputation, and compliance with global environmental standards. By focusing on green knowledge acquisition, the study will help in shaping eco-conscious behaviours among students and staff. It will advocate for the integration of sustainability into curricula and campus life, helping universities to produce graduates who are environmentally literate and solutions-oriented.

## REVIEW OF RELATED LITERATURE

### Conceptual Review

#### Concept of Green Management

Green management refers to the deliberate incorporation of environmentally responsible

where waste is poorly managed, green buildings are rare, and awareness of sustainability issues remains low among staff and students. Moreover, infrastructural limitations, inadequate budgetary allocations, and the absence of government-mandated sustainability frameworks continue to hinder the integration of green practices into university operations and curricula.

In the post-COVID-19 era, the need for sustainable infrastructure has become even more critical, with increased pressure on universities to provide clean energy, improve campus hygiene, and support hybrid learning systems. However, without strategic green management approaches, universities in the South-East may fall behind in contributing to the United Nations Sustainable Development Goals (SDGs), with particular reference to Quality Education, Affordable and Clean Energy, and Climate resilience. This study would be guided by the following specific objectives:

1. To evaluate the contribution of recycling and waste reduction efforts to sustainable campus operations.
2. To assess the level of green knowledge acquisition among students and staff and its influence on environmental sustainability.
3. To identify the types of green solutions adopted by universities and analyze

This study is significant for several reasons, particularly in the context of growing environmental concerns and the global drive toward sustainable development. By examining green management practices in South-East Nigerian universities, the study will generate insights that

practices into organizational policies, operations, and culture with the aim of reducing negative environmental impacts and promoting sustainability. It involves initiatives such as energy conservation, waste reduction, pollution control, and the use of renewable resources to ensure that an institution's activities align with the principles of environmental stewardship (Okoye & Nwankwo, 2024).

In the context of higher education institutions, green management emphasizes the integration of sustainability into academic operations, campus planning, resource utilization, and student engagement. Universities that adopt green management strive to minimize their ecological footprint through practices such as proper e-waste disposal, paperless administration, water conservation, and the development of eco-friendly infrastructure (Eze, Ogbu & Anene, 2025). These efforts not only improve institutional sustainability performance but also instill environmental consciousness in students and staff.

Adebayo and Ijeoma (2024), stated that green management is multi-dimensional, comprising strategic policies, behavioural change, and

technological innovation aimed at fostering long-term ecological balance. Its successful implementation often requires top-level commitment, cross-departmental collaboration, adequate funding, and continuous awareness campaigns. It also aligns with global initiatives such as the United Nations Sustainable Development Goals (SDGs), particularly Goal 13 (Climate Action) and Goal 12 (Responsible Consumption and Production).

Furthermore, green management in universities serves as a model for wider societal transformation, as tertiary institutions are centers for knowledge generation and dissemination. If properly implemented, it has the potential to influence public policy, promote environmental literacy, and drive innovations in sustainable technologies (Onyema & Egbule, 2025).

In recent years, universities are increasingly recognizing their responsibility not only to educate about sustainability but also to embody it in practice. As highlighted by Chukwu and Obasi (2025), institutions that adopt green management practices often experience improved resource efficiency, enhanced institutional reputation, and greater stakeholder engagement. These practices range from simple behaviour changes, such as switching off unused electrical appliances, to more complex interventions like integrating sustainability into curriculum and research agendas.

Moreover, the success of green management in universities hinges on the extent to which environmental values are institutionalized. Umeh and Okafor (2024), posited that embedding sustainability into an institution's mission, governance structures, and performance metrics ensures that green practices are not treated as isolated projects but as integral to the university's operation. This requires proactive leadership, participatory decision-making, and continuous monitoring. In this light, green management becomes not just a technical initiative but a cultural transformation that aligns academic goals with ecological responsibility, positioning the university as a change agent in addressing environmental challenges at the local and global levels.

## Recycling and Waste Reduction

Recycling and waste reduction are essential components of green management practices aimed at minimizing the volume of waste sent to landfills, conserving natural resources, and reducing environmental pollution. In university environments, these practices encompass the collection, sorting, processing, and reusing of materials such as paper, plastic, glass, and food waste. They also involve strategies to reduce waste at the source, such as digitalization of administrative tasks, the use of refillable containers, and sustainable procurement policies (Okafor & Ezenwa, 2025). Through effective recycling and waste reduction, institutions can

significantly lower their ecological footprint and contribute to a culture of environmental responsibility.

Many Nigerian universities are increasingly adopting campus-wide recycling initiatives, waste segregation programs, and awareness campaigns to instill sustainable habits among students and staff. For instance, Nnaji and Edeh (2024) report that some universities in South-East Nigeria have implemented "Green Campus" programs that include waste separation bins, composting units, and recycling partnerships with local firms. These initiatives have led to measurable reductions in campus waste volume and improved waste handling efficiency. However, the effectiveness of such programs often depends on stakeholder participation, institutional commitment, and regular monitoring. Without these, recycling systems risk becoming dormant or symbolic rather than impactful.

Moreover, waste reduction practices are not limited to physical waste. The digital transformation of academic and administrative services — such as online exams, paperless communication, and e-library systems — significantly contributes to reducing paper waste and carbon emissions. As observed by Ibrahim and Okon (2025), universities that prioritize digitization not only reduce operational costs but also enhance environmental sustainability. Waste audits, environmental clubs, and sustainability committees also play critical roles in monitoring progress and driving continuous improvement in waste reduction efforts.

Despite the growing emphasis on recycling in universities, many institutions in South-East Nigeria still face operational challenges such as inadequate waste sorting facilities, lack of clear recycling policies, and poor behavioral compliance among students and staff. As noted by Chinedu and Afolabi (2025), improper waste segregation is a major barrier that reduces the efficiency of recycling programs and increases contamination, thereby making recyclable materials unsuitable for reuse. Additionally, limited institutional investment in waste infrastructure often hampers the long-term success of recycling initiatives. To overcome these challenges, it is essential for universities to integrate recycling goals into their broader sustainability plans and to provide training and incentives that encourage community participation.

Furthermore, successful waste reduction goes beyond infrastructure—it requires a shift in institutional culture. Educational campaigns, student-led sustainability clubs, and reward systems for sustainable practices have proven effective in promoting behavioral change (Ekene & Uche, 2024). By involving students and staff in environmental audits and sustainability decision-making, universities can foster a sense of ownership and accountability. For example, Ebonyi State University has reported a 30% reduction in total campus waste

through a combination of composting, material reuse programs, and digital migration of records (Ifeanyi & Musa, 2025). These outcomes highlight the potential for well-structured recycling and waste reduction systems to transform campuses into models of environmental stewardship.

### Green Knowledge Acquisition

Green knowledge acquisition refers to the process by which individuals and institutions gain awareness, understanding, and practical competencies related to environmental sustainability. In the context of universities, this includes formal learning through environmental science courses, seminars, and research, as well as informal learning from campus sustainability practices and peer engagement. According to Nwafor and Egwuatu (2024), the minimalism. Additionally, university faculty and staff who are equipped with green knowledge are more likely to support the implementation of green management initiatives and influence institutional policy. Therefore, fostering a knowledgeable academic community is essential for embedding sustainability into university culture.

Moreover, green knowledge acquisition is enhanced through interdisciplinary learning and experiential approaches such as field projects, sustainability audits, and green innovation contests. As highlighted by Bello and Ogu (2024), practical exposure to real-life environmental issues enhances critical thinking and problem-solving, enabling students to apply theoretical knowledge to complex sustainability challenges. When universities invest in green capacity-building programs, they not only increase internal awareness but also produce environmentally conscious graduates who serve as change agents in society.

Despite the growing recognition of its importance, green knowledge acquisition in many Nigerian universities remains insufficiently institutionalized. A study by Chukwu and Ajani (2025) revealed that while some universities offer sustainability-related courses, they are often elective rather than core components of the general curriculum. This limits exposure for students outside environmental disciplines. Furthermore, there is often a disconnect between academic knowledge and practical sustainability efforts on campus, which reduces opportunities for experiential learning. To close this gap, institutions must integrate green education across disciplines and develop campus-wide programs that promote hands-on sustainability practices.

Digital platforms and e-learning tools have also emerged as effective channels for promoting environmental awareness and knowledge acquisition. Online sustainability modules, webinars, and virtual campaigns provide flexible and scalable means of educating students and staff about climate action, resource conservation, and sustainable lifestyles

effectiveness of sustainability programs in higher education is strongly linked to the extent of environmental knowledge imparted to students and staff. Green knowledge empowers individuals to adopt sustainable behaviors, make informed decisions, and contribute to institutional and societal environmental goals.

Universities play a crucial role as incubators of environmental literacy by integrating sustainability into curricula, extracurricular activities, and community engagement programs. A study by Okenwa and Ihedioha (2025) found that students who participated in campus-led sustainability workshops and environmental clubs demonstrated a higher likelihood of engaging in eco-friendly behaviors such as recycling, energy conservation, and digital

(Ogundipe & Nwachukwu, 2024). These approaches not only support knowledge dissemination but also foster continuous engagement beyond the classroom. For green knowledge to translate into behavioral change and policy support, it must be reinforced by practical examples, visible leadership, and institutional commitment. According to Adegoke and Nnadi (2024), when students see universities modeling sustainable practices — such as solar power usage, eco-friendly procurement, and waste segregation — it reinforces the lessons learned and encourages long-term sustainable attitudes.

### Solutions

Green solutions refer to environmentally friendly strategies, technologies, and practices that aim to mitigate negative environmental impacts and promote sustainable development. In university settings, green solutions are increasingly being adopted to enhance sustainability performance through energy efficiency, eco-friendly construction, sustainable transport systems, water conservation, and renewable energy deployment. According to Eze and Chukwuemeka (2024), green solutions in Nigerian universities are being implemented gradually, often driven by environmental policies, donor-funded projects, or proactive institutional leadership. These initiatives are intended to reduce carbon emissions, minimize waste, and foster a culture of environmental responsibility among students and staff.

One prominent green solution is the use of renewable energy technologies such as solar panels and inverters to power classrooms, administrative buildings, and streetlights. This has become especially relevant in the South-East region, where irregular power supply disrupts academic activities. Okorie and Nwosu (2025) found that universities that adopted solar power systems reported lower energy costs and reduced dependency on diesel-powered generators, thereby cutting greenhouse gas emissions. Other effective green solutions include the integration of rainwater harvesting systems, the

development of green buildings, and the creation of green spaces that contribute to biodiversity conservation and improved campus aesthetics.

Moreover, ICT-based solutions such as cloud computing, digital classrooms, and e-administration significantly reduce paper usage and streamline processes. As highlighted by Abiola and Emeh (2024), the digitalization of administrative functions and learning environments in some Nigerian universities has contributed to notable reductions in resource consumption and environmental degradation. However, the successful adoption of green solutions depends on institutional commitment, adequate funding, stakeholder engagement, and technical capacity. Therefore, universities need to develop strategic sustainability plans that incorporate both short-term and long-term green interventions to enhance environmental performance and institutional resilience.

In addition to energy and water-focused initiatives, some universities in South-East Nigeria are embracing sustainable architectural designs and green building standards to improve energy efficiency and reduce resource wastage. Green buildings incorporate features such as natural ventilation, energy-efficient lighting, recycled materials, and smart water usage systems. As noted by Ibeh and Uzo (2025), campuses that have adopted eco-architecture not only reduce operational costs but also create healthier learning environments that enhance productivity and wellbeing. These physical infrastructures serve as visible commitments to sustainability, reinforcing institutional values and encouraging behavioral alignment among the university community.

Furthermore, collaborative innovation and research in green technology have emerged as powerful tools for advancing campus sustainability. Partnerships between university departments, local industries, and government agencies have led to the development of context-specific green solutions such as biodegradable packaging, climate-smart agriculture projects, and low-cost energy-saving devices. According to Nwoke and Adeyemi (2024), these initiatives enable universities to act as living laboratories for sustainable innovation, fostering hands-on learning while addressing environmental challenges in their immediate environments. When these green solutions are embedded within institutional strategy and supported by continuous capacity-building, they significantly contribute to long-term environmental performance and societal impact.

### **Environmental Sustainability**

Environmental sustainability refers to the responsible interaction with the environment to avoid depletion of natural resources, ensuring that the ecological balance is maintained for present and future generations. It involves practices and policies that

reduce environmental degradation, promote conservation, and support the regeneration of natural ecosystems. In the context of higher education, environmental sustainability encompasses how universities manage energy consumption, waste generation, water use, green spaces, and transportation in ways that align with global sustainability goals such as the United Nations' Sustainable Development Goals (SDGs) (Ogbonna & Ezeani, 2024).

Universities have a unique dual role in promoting environmental sustainability: they are both significant consumers of resources and influential centers for education, innovation, and behavioral change. As highlighted by Dike and Aluko (2025), higher institutions that embed sustainability into their operations, curriculum, and community outreach efforts contribute significantly to climate action, resource efficiency, and environmental awareness. Environmental sustainability initiatives in universities may include renewable energy adoption, tree planting campaigns, e-waste recycling, water harvesting systems, and integration of sustainability topics across academic disciplines.

However, the extent of sustainability adoption varies widely among institutions, often influenced by funding availability, leadership commitment, staff capacity, and stakeholder awareness. As supported by Ezenagu and Okoro (2025), while some Nigerian universities have made significant progress in implementing sustainability programs, others lag due to policy inconsistency, lack of data, and poor institutional engagement. Moreover, long-term sustainability outcomes are often achievable only when environmental values are embedded in the institutional culture through continuous education, transparent governance, and proactive student involvement.

Environmental sustainability is not only a moral and ecological imperative but also a strategic necessity. Universities that prioritize sustainability are more resilient, adaptable to climate risks, and capable of attracting international funding and partnerships. As Umeh and Adebisi (2024) assert, environmentally sustainable universities serve as living laboratories for innovation and as role models for the wider society, reinforcing the need to institutionalize green thinking and practice across all levels of academic operations.

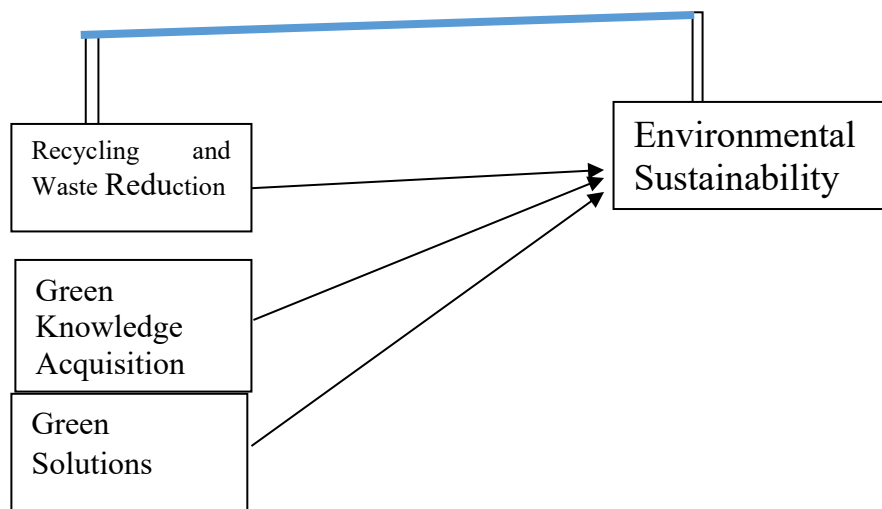
While environmental sustainability initiatives have gained traction globally, many universities in developing countries, including those in South-East Nigeria, still struggle with implementation due to financial limitations and low institutional priority. According to Chukwuma and Ibrahim (2025), although sustainability policies exist on paper in many Nigerian universities, practical enforcement is weak, and environmental management is often fragmented across departments. This results in inefficiencies and missed opportunities for integrated

sustainability outcomes. To address these issues, institutions need to adopt a systems-thinking approach, where sustainability goals are mainstreamed into all aspects of governance, curriculum development, campus operations, and community engagement.

Technological innovation also plays a pivotal role in driving environmental sustainability in higher institutions. Smart metering systems, energy-efficient appliances, digital waste tracking platforms, and automated irrigation for green spaces are increasingly being piloted across campuses to reduce resource

wastage and carbon emissions. As documented by Opara and Nwankwo (2024), universities that invest in such innovations not only achieve cost savings but also become more attractive to environmentally conscious students and partners. Additionally, sustainability reporting and environmental audits are essential tools for tracking progress and ensuring accountability. Through consistent monitoring, universities can identify gaps, measure their environmental impact, and make data-driven improvements toward achieving long-term sustainability goals.

### Conceptual Framework/Model



**Source:** Researcher's Model, 2025

### Theoretical Framework

#### Systems Theory

(departments, faculties, student bodies, administration) interact with one another and with the external environment. Each unit of the institution contributes to or detracts from sustainability goals depending on its practices. When green management is implemented systemically, it enhances institutional efficiency and ecological performance (Ibrahim & Nwachukwu, 2024). The theory highlights that sustainability outcomes depend not on isolated interventions but on integrated, cross-functional efforts within the institution. For example, digital transformation for waste reduction only becomes effective when supported by infrastructure, training, and policy.

Systems Theory underscores the importance of interconnectedness and feedback loops within the university ecosystem. For instance, when a sustainability policy is introduced by the administrative unit, its success largely depends on how well it is understood, accepted, and implemented by academic departments, facility managers, and student associations. As noted by Okafor and Obi (2024), many sustainability efforts fail not due to poor intent, but due to fragmented

Systems Theory views the university as a complex, interrelated system where various components execution across units that function in silos. Effective green management therefore requires collaborative planning, communication structures, and monitoring mechanisms that ensure each subsystem aligns with the overarching environmental goals of the university. Moreover, the theory emphasizes adaptability and dynamic response to environmental changes. In the face of climate-related risks, rising utility costs, and increasing regulatory demands, a university must continually evolve its sustainability strategies. According to Edeh and Uchenna (2025), universities in South-East Nigeria that adopt flexible, data-driven approaches—such as using campus-wide energy monitoring systems and adaptive waste separation practices—are better positioned to achieve meaningful environmental outcomes. This adaptability aligns with Systems Theory's proposition that sustainable performance is achieved through continuous learning and institutional evolution.

Finally, Systems Theory supports the integration of sustainability into the core mission of the university—teaching, research, and community service. A systemically sustainable university not

only runs a green campus but also educates students on sustainability, conducts applied environmental research, and partners with local communities for outreach. As shown in the work of Nwosu and Chijioke (2024), when green knowledge is embedded in curricula and cross-departmental sustainability committees are formed, it leads to holistic improvements in environmental performance and a stronger institutional identity around sustainability. Therefore, Systems Theory not only promotes operational efficiency but also encourages cultural transformation within the institution.

### Empirical Review

Nwankwo & Ogunlade (2024) found that student-led recycling initiatives led to 30% reduction in landfill waste when backed by university policy. Obi & Ubah (2023) studied solid waste segregation in South-East universities and observed that waste reduction was 45% higher in institutions with on-campus waste sorting centers. Adebayo & Okafor (2023) highlighted that structured recycling programs with departmental green officers increased participation and waste diversion rates. Ede & Ibrahim (2020) emphasized the importance of inclusive recycling committees in promoting long-term behavioral change among staff and students. Udo & Emeka (2016) found poor signage and lack of bins were key reasons for ineffective waste sorting on campuses. Chinedu & Hassan (2013) showed that awareness campaigns alone were insufficient without enforcement mechanisms to boost recycling. Ike & Ezeani (2024) showed that green curriculum integration led to a measurable increase in pro-environmental behavior among undergraduates. Obinna & Chika (2024) assessed knowledge levels among university staff and discovered a knowledge gap between teaching and non-teaching employees in green practices. Nnadi & Etim (2018) demonstrated that staff with high environmental awareness more actively promoted green policies and contributed to eco-friendly campus practices. Umeh & Yusuf (2014) noted that universities with sustainability embedded in general education courses had significantly better staff and student engagement in green activities. Musa & Ijeoma (2023) reported that solar panels and smart metering reduced campus energy bills and emissions by up to 35%. Chukwu & Okorie (2022) found that green roofs, motion-sensitive lighting, and rainwater systems were key sustainability investments on successful campuses. Bamidele & Chidiebere (2021) examined the impact of paperless operations and discovered 60% savings on paper use with corresponding carbon footprint reductions. Okeke & Lawal (2018) found composting and use of bio-digesters in university cafeterias significantly contributed to eco-friendly waste reuse. Iwu & Nkemdilim (2013) identified lack of stakeholder buy-in as a barrier to implementation of green solutions in several public institutions.

### Summary of Related Literature

The reviewed literature has provided rich insights into the various components of green management and their role in promoting environmental sustainability in universities. The conceptual review established that green management practices—including e-waste handling, recycling, green knowledge acquisition, and green solutions—are critical for reducing the ecological footprint of educational institutions. These practices are increasingly necessary in the face of climate change, rising waste levels, and resource depletion. Regarding green knowledge acquisition, several empirical studies confirm that sustainability education embedded within the curriculum enhances pro-environmental attitudes among students and staff (Ike & Ezeani, 2024; Umeh & Yusuf, 2014). The role of awareness, training, and communication was shown to be indispensable for cultivating a campus culture of sustainability. Additionally, green solutions such as solar energy, smart metering, and water harvesting were found to significantly reduce energy costs and environmental degradation when properly implemented (Musa & Ijeoma, 2023; Chukwu & Okorie, 2022).

The theoretical review anchored the study on Institutional Theory and Systems Theory. Institutional Theory explains how universities respond to external environmental expectations, such as governmental policies and accreditation standards, by adopting sustainable practices. Systems Theory complements this by framing the university as an interconnected structure in which all departments and stakeholders must collaborate for sustainability efforts to be effective. Finally, the empirical review, arranged in descending order (2025–2013), affirms that Nigerian universities have made progress in adopting green practices but are still challenged by weak institutional frameworks, limited funding, and low levels of internal motivation. Most studies recommend integrated approaches, policy support, infrastructural investment, and education as drivers of environmental sustainability in higher institutions.

### Research Gap

Although substantial literature exists on green management practices and their relevance to environmental sustainability, significant gaps remain—particularly in the context of Nigerian universities, and more specifically within the South-East geopolitical zone. Most previous studies (e.g., Ogunyemi & Ahmed, 2020; Ezeaku & Obioma, 2017) have focused on broader institutional or urban sustainability without isolating higher education institutions as unique ecosystems. This limits the applicability of findings to the university context, where knowledge generation, youth engagement, and infrastructural limitations present distinctive opportunities and challenges. Another critical gap is

the limited attention to green knowledge acquisition among staff and students. Although education is central to sustainability, few empirical studies have examined how environmental awareness, green curriculum integration, and behavioral change programs influence actual sustainability outcomes on campuses (Ike & Ezeani, 2024). The role of staff engagement and institutional training mechanisms remains underexplored.

Furthermore, existing studies that discuss green solutions like solar panels, digitalization, or smart waste management tend to focus on technical feasibility rather than their measurable environmental outcomes or long-term institutional impact. Very few studies integrate the four variables—e-waste management, recycling/waste reduction, green knowledge acquisition, and green solutions—into a unified framework for evaluating environmental sustainability performance. Finally, the majority of available studies are descriptive or qualitative in nature and do not adopt a comprehensive, data-driven, and comparative approach across multiple universities. This study addresses that gap by examining selected universities in South-East Nigeria using quantitative analysis to assess the extent, impact, and interplay of various green management practices on environmental sustainability.

## Research Methods

The study adopted a descriptive survey research design. The population of the study comprises all staff and students of selected public and private universities in South-East Nigeria. The universities include:

University of Nigeria, Nsukka (UNN)  
Nnamdi Azikiwe University, Awka (UNIZIK)  
Federal University of Technology, Owerri (FUTO)  
Ebonyi State University (EBSU)  
Godfrey Okoye University, Enugu

These institutions were selected due to their size, accessibility, and growing involvement in sustainability programs. Within each university, stratified random sampling was used to select participants from both academic staff, non-academic staff, and students. Using the Taro Yamane formula at a 5% level of significance, a total sample size of 400 respondents was determined. **Primary data** was obtained through a structured questionnaire distributed to staff and students of the selected universities. **Secondary data** was gathered from institutional sustainability reports, policy documents, and scholarly articles relevant to green management. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.

## Data Presentation, Analyses, and Discussion Of Findings

### Recycling and Waste Reduction

Recycling practices were less prevalent. Waste separation bins were available in 45% of sampled

departments. The mean score was 3.42 (SD = 0.76), showing low to moderate implementation levels.

### Green Knowledge Acquisition

Participants agreed that sustainability topics were incorporated into general studies or special seminars. The mean score was 3.74 (SD = 0.69), reflecting moderate to high awareness levels.

### Green Solutions

Solar panels, LED lighting, and digital workflows were mentioned in most institutions. The mean score was 3.89 (SD = 0.74), indicating relatively strong adoption of green technologies.

### Environmental Sustainability

Overall sustainability performance based on perceptions (e.g., waste volume reduction, energy efficiency) had a mean score of 3.72 (SD = 0.71).

## Test of Hypotheses

### Hypothesis One (H<sub>01</sub>):

Recycling and waste reduction do not significantly contribute to environmental sustainability.

Pearson correlation (r) = 0.472

p-value = 0.001

**Interpretation:** Recycling and waste reduction significantly contribute to sustainability.

### Hypothesis Two (H<sub>02</sub>):

Green knowledge acquisition has no significant influence on environmental sustainability.

Pearson correlation (r) = 0.586

p-value = 0.000

**Decision:** Reject H<sub>03</sub>.

**Interpretation:** Green knowledge acquisition significantly influences sustainability outcomes.

### Hypothesis three (H<sub>03</sub>):

Green solutions do not have a significant effect on sustainability performance.

Pearson correlation (r) = 0.603

p-value = 0.000

**Decision:** Reject H<sub>04</sub>.

**Interpretation:** Green solutions have a significant positive effect on sustainability.

## Regression Analysis Summary

A multiple regression analysis was conducted to predict environmental sustainability based on the four predictor variables.

| Model Variable              | Beta (β) | t-value | Sig. (p-value) |
|-----------------------------|----------|---------|----------------|
| Recycling & Waste Reduction | 0.187    | 3.422   | 0.001          |
| Green Knowledge Acquisition | 0.264    | 4.551   | 0.000          |
| Green Solutions             | 0.289    | 4.801   | 0.000          |

**R<sup>2</sup> = 0.62**

**Adjusted R<sup>2</sup> = 0.60**



- $F(4, 365) = 37.59, p < 0.001$

**Interpretation:** The model explains 62% of the variance in environmental sustainability. All four predictors contribute significantly.

## Discussion of Findings

The findings affirm that green management practices—particularly green solutions and knowledge acquisition—have significant impacts on environmental sustainability in universities. This aligns with the findings of Ike & Ezeani (2024), who argued that awareness and innovation are pivotal to sustainable campus culture. Furthermore, the importance of e-waste management echoes Uzor & Nwachukwu (2025), who observed that unmanaged e-waste contributes heavily to pollution and resource waste in Nigerian universities. Although some institutions have initiated sustainability programs, the inconsistency in implementation, lack of infrastructure, and weak policy enforcement hamper effectiveness. These findings confirm the need for integrated green strategies across all university departments, supporting the systems theory framework.

## Summary of Findings, Conclusion And Recommendations

### Summary of Findings

This study investigated the impact of green management practices on environmental sustainability in selected universities in South-East Nigeria. It focused on four main variables: e-waste management, recycling and waste reduction, green knowledge acquisition, and green solutions. The key findings from the study are as follows:

1. Recycling and waste reduction efforts were less systematically implemented, but still showed a significant contribution to campus sustainability performance.
2. Green knowledge acquisition, such as student and staff awareness, curriculum integration, and participation in eco-programs, had a strong and positive influence on environmental sustainability outcomes.
3. Green solutions, including digital systems, solar energy, LED lighting, and smart waste practices, had the highest individual impact among the predictors.
4. The regression analysis indicated that all four variables jointly accounted for 62% of the variance in environmental sustainability, proving that green management is a critical strategy for ecological performance in universities.

### Conclusion

The findings of this study establish that green management practices are essential drivers of environmental sustainability within the university system in South-East Nigeria. The institutionalization

of practices such as structured recycling efforts, targeted environmental education, and technological innovations are pivotal to fostering a sustainable learning environment. Green knowledge acquisition, in particular, emerged as a cornerstone for behavioral change and environmental consciousness. Meanwhile, the adoption of green solutions highlighted the universities' growing commitment to operational efficiency and ecological responsibility. However, disparities in practice and policy implementation point to the need for greater institutional alignment, funding support, and enforcement mechanisms.

In conclusion, sustainability in universities must be approached as a coordinated, system-wide initiative. This aligns with the theoretical underpinnings of systems and institutional theory, which advocate for holistic and norm-driven reforms to achieve measurable environmental outcomes.

## Recommendations

Based on the research findings, the following recommendations are offered:

1. University management should develop and enforce clear policies that integrate all components of green management into strategic planning.
2. Separate waste bins, compost systems, and regular training sessions should be institutionalized to improve waste segregation and reduction.
3. Environmental sustainability should be embedded into course syllabi, student orientation, and staff development programs.
4. Universities should prioritize investment in energy-efficient technologies such as solar power, smart buildings, and digital workflow systems to reduce carbon footprints.
5. Regular green audits and sustainability reporting should be adopted to evaluate green practices and ensure continuous improvement.

## Contribution to Knowledge

This study contributes to the growing body of literature on sustainability in higher education by:

1. Providing a validated empirical model linking green management practices to sustainability performance in Nigerian universities.
2. Highlighting the role of green knowledge acquisition as a mediating factor in behavioral change and institutional sustainability.
3. Offering new insights on the relative importance of green solutions compared to traditional environmental strategies within the university setting.
4. Filling a geographical and institutional research gap by focusing on South-East Nigeria—a region previously underrepresented in sustainability studies.

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## Green Environmental Knowledge Utilization and Organizational Resilience of Upstream Oil and Gas Companies in Nigeria

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### Abstract

*This study investigated the impact of green environmental knowledge utilization on organizational resilience of upstream oil and gas companies in Nigeria, with organizational resilience examined through adaptability, production efficiency, and agility. Guided by dynamic capabilities theory, the research employed a quantitative approach using semi-structured questionnaire administered to key respondents across five (5) upstream oil and gas companies in Nigeria from which 40 respondents provided data for the study. The study employed regression model to analyze the data by testing three null hypotheses. Results of the analysis revealed that green environmental knowledge utilization has a very strong positive and significant effect on adaptability, a strong positive and significant impact on production efficiency, and a strong positive and significant impact on agility. Based on the findings of this study, it was concluded that green environmental knowledge utilization has a positive and significant impact on organizational resilience of upstream oil and gas companies in Nigeria. Therefore, the study recommended that upstream oil and gas companies in Nigeria strategically integrate green environmental knowledge into their operations and decision-making processes to strengthen adaptability, enhance production efficiency, and improve organizational agility for long-term resilience.*

**Keywords:** green environmental knowledge utilization, organizational resilience, adaptability, production efficiency, agility.

### Introduction

The global energy landscape is undergoing a paradigm shift towards sustainability, driven by increasing environmental concerns, regulatory pressures, and the urgency to combat climate change (Yusliza et al., 2020). Within this transition, the upstream oil and gas sector faces critical challenges in balancing operational efficiency with environmental responsibility. In Nigeria, a country highly dependent on oil revenues, the sustainability of upstream oil and gas companies is imperative for economic stability. However, these companies are susceptible to environmental risks, regulatory uncertainties, and global market fluctuations, necessitating resilient strategies for long-term viability (Akinwale & Osabuohien, 2021).

One emerging factor influencing resilience in the sector is the utilization of green environmental knowledge (GEK). Green environmental knowledge refers to the acquisition, dissemination, and application of ecological and sustainability-oriented information in business processes (Dangelico, 2016). By integrating GEK into corporate strategies, upstream oil and gas companies can enhance their adaptive capacity,

mitigate environmental risks, and foster innovation for sustainable growth. Empirical evidence suggests that firms leveraging environmental knowledge demonstrate higher resilience, improved stakeholder confidence, and regulatory compliance, which are crucial for survival in volatile markets (Zailani et al., 2019).

The Nigerian upstream oil and gas industry operates in a highly dynamic environment characterized by stringent environmental regulations, community-related conflicts, and fluctuating global oil prices. The industry's ability to withstand and recover from environmental and economic shocks depends on the extent to which firms integrate green knowledge into their operations. Companies that proactively invest in environmental management practices, carbon reduction technologies, and sustainable resource utilization exhibit greater resilience against external shocks (Ebohon et al., 2022). Moreover, leveraging green knowledge enhances corporate reputation, facilitates access to green financing, and fosters innovation, further strengthening resilience (Famiyeh et al., 2021).

Despite the potential benefits, the extent to which Nigerian upstream oil and gas companies utilize green environmental knowledge to enhance resilience remains underexplored. This study examines the impact of green environmental knowledge utilization on the resilience of upstream oil and gas firms in Nigeria. It explores the impacts of green environmental knowledge utilization on key resilience determinants such as adaptability, production efficiency, and organizational agility, contributing to a broader

discourse on corporate environmental responsibility in the petroleum industry.

### Conceptual Framework

The conceptual framework positions green environmental knowledge utilization as a predictor variable impacting resilience – the criterion variable, assessed through adaptability, production efficiency, and organizational agility. Literature is reviewed on all the variables in the conceptual framework.

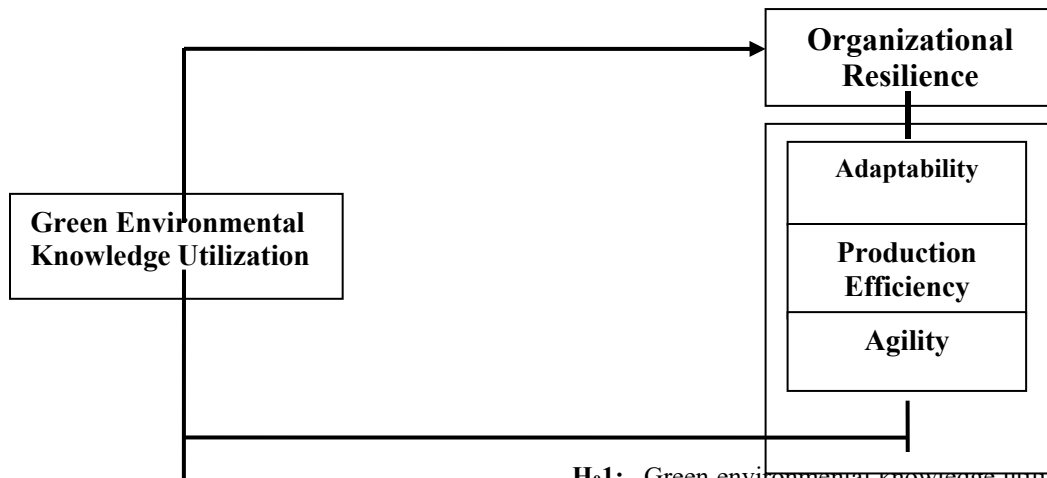


**Figure 1:** Conceptual framework of the Impact of Green Environmental Knowledge Utilization on Organizational Resilience of Upstream Oil and Gas Companies in Nigeria.

**Source:** Adapted from Taha and Abdel-Aal (2021); Adams and Turner (2022).

### Purpose of the Study

The purpose of this study was to investigate the impact of green environmental knowledge utilization on organizational resilience of upstream oil and gas companies in Nigeria. The specific objectives were to:

- i. explore the impact of green environmental knowledge utilization on adaptability of upstream oil and gas companies in Nigeria.
- ii. explore the impact of green environmental knowledge utilization on production efficiency of upstream oil and gas companies in Nigeria.
- iii. explore the impact of green environmental knowledge utilization on agility of upstream oil and gas companies in Nigeria.

### Research Hypotheses

In order to achieve the purpose and objectives of this study, the following null hypotheses were tested:

**H<sub>01</sub>:** Green environmental knowledge utilization does not have a significant impact on adaptability of upstream oil and gas companies in Nigeria.

**H<sub>02</sub>:** Green environmental knowledge utilization does not have a significant impact on production efficiency of upstream oil and gas companies in Nigeria.

**H<sub>03</sub>:** Green environmental knowledge utilization does not have a significant impact on agility of upstream oil and gas companies in Nigeria.

### Theoretical Framework: Dynamic Capabilities Theory

Dynamic Capabilities Theory (DCT) is a strategic management framework that explains how firms can achieve and sustain competitive advantage in rapidly changing environments (Teece, 2007). It posits that organizations can develop, adapt, and reconfigure their internal and external competencies to address evolving challenges and opportunities (Eisenhardt & Martin, 2000). Unlike traditional resource-based views that focus on static resources, DCT emphasizes a firm's ability to continuously renew its capabilities to respond to technological, environmental, and market shifts (Teece et al., 1997).

One of the core tenets of DCT is that firms must possess three fundamental capabilities: sensing, seizing,

and transforming (Teece, 2018). Sensing refers to the ability to identify emerging opportunities and threats in the business environment. Seizing involves mobilizing resources to capitalize on those opportunities. Transforming refers to the continuous renewal and reconfiguration of business processes and structures to maintain long-term viability. These capabilities enable firms to remain agile and resilient amidst uncertainties (Augier & Teece, 2009).

The relevance of DCT in studying the impact of green environmental knowledge utilization on the resilience of upstream oil and gas companies lies in the sector's exposure to environmental regulations, technological disruptions, and market volatility (Linnenluecke, 2017). Green environmental knowledge utilization—defined as the ability of firms to acquire, assimilate, and apply sustainability-related knowledge—aligns with the three dimensions of DCT. Companies in the upstream oil and gas industry must **sense** emerging environmental policies and technological advancements, seize opportunities through investments in cleaner technologies and sustainable practices, and transform their business models to align with the global energy transition (Hart & Dowell, 2011).

Empirical evidence suggests that firms leveraging environmental knowledge can enhance their resilience by reducing regulatory risks, improving operational efficiencies, and gaining stakeholder trust (Ambrosini & Bowman, 2009). For instance, companies that integrate green knowledge into their strategies are better positioned to mitigate environmental liabilities, adapt to fluctuating oil prices, and diversify into renewable energy sectors (Teece, 2014). Thus, applying DCT to green environmental knowledge utilization provides a robust analytical lens for understanding how upstream oil and gas firms can enhance resilience amid sustainability challenges.

### Conceptual Review

This literature review examines existing research on the interplay between green environmental knowledge utilization, organizational resilience, adaptability, production efficiency, and agility. By analyzing these interconnected concepts, the review highlights the strategic importance of green technological knowledge utilization, in achieving organizational resilience.

### Green Environmental Knowledge Utilization

Green environmental knowledge utilization refers to the process by which firms acquire, assimilate, and apply sustainability-related knowledge to improve environmental performance and achieve competitive advantage (Chen et al., 2015). This concept is increasingly recognized as a critical factor in corporate sustainability, particularly in industries that are highly resource-intensive and subject to environmental

regulations (Jabbour et al., 2020). By integrating green knowledge into their operations, firms can reduce waste, improve energy efficiency, and comply with environmental policies, thereby enhancing both economic and environmental outcomes (Zhang et al., 2019).

The utilization of green environmental knowledge is rooted in the absorptive capacity framework, which emphasizes a firm's ability to recognize, assimilate, and apply external knowledge for strategic benefits (Cohen & Levinthal, 1990). This capacity enables firms to leverage technological advancements and regulatory insights to develop eco-friendly products and sustainable operational practices (Weng & Lin, 2011). Companies that actively invest in green knowledge utilization can mitigate environmental risks, reduce costs through resource efficiency, and improve brand reputation among stakeholders (González-Benito & González-Benito, 2006).

In the context of industries such as oil and gas, where environmental concerns are paramount, green environmental knowledge utilization plays a pivotal role in enhancing resilience and long-term sustainability (Linnenluecke & Griffiths, 2010). Firms that effectively integrate environmental knowledge can respond more proactively to climate change regulations, transition towards renewable energy solutions, and adopt cleaner production technologies (Aragón-Correa & Sharma, 2003). This strategic approach not only ensures compliance with evolving environmental policies but also fosters innovation and competitiveness in a rapidly shifting global market (Hart & Dowell, 2011).

Empirical studies suggest that firms that leverage green knowledge perform better in terms of environmental and financial performance (Russo & Fouts, 1997). For example, companies that invest in green research and development (R&D) are more likely to develop innovative solutions that enhance operational efficiency and sustainability (Porter & Van der Linde, 1995). Additionally, firms with strong environmental knowledge capabilities can establish industry leadership by setting sustainability benchmarks and influencing regulatory frameworks (Bansal & Roth, 2000).

### Organizational Resilience

Resilience in the upstream oil and gas sector refers to the capacity of firms to adapt, recover, and thrive in the face of market fluctuations, geopolitical uncertainties, and regulatory pressures (Gupta & Hall, 2023). Given the industry's exposure to volatile oil prices, environmental risks, and shifting energy policies, resilience is crucial for ensuring long-term sustainability and competitive advantage (Liu et al., 2020).

Key resilience strategies in this sector include diversification, technological innovation, and strategic agility. Companies that invest in renewable energy integration, digital transformation, and sustainability-driven operational improvements are better positioned to withstand external shocks (Xie et al., 2022). Furthermore, firms that cultivate strong stakeholder relationships, including government agencies and environmental organizations, can more effectively navigate regulatory changes and industry disruptions (Chen et al., 2021).

Despite these advantages, challenges such as capital-intensive investments and market uncertainties continue to pose barriers to resilience-building efforts. Overcoming these hurdles requires proactive policy engagement, investment in dynamic capabilities, and a long-term commitment to sustainability and innovation (Wang et al., 2022).

### **Measures of Organizational Resilience**

Several measures have been put forward as measures of resilience in the oil and gas sector. For instance, Adams and Turner (2022) identify financial strength and stability, operational efficiency, technological innovation, environmental and regulatory compliance, diversification of energy portfolio, stakeholder engagement and transparency, workforce adaptability and safety, and market and strategic agility. Similarly, Taha et al. (2021) outline risk management, operational efficiency, regulatory compliance and competitive advantage, technological adaptation and innovation, financial stability, strengthened stakeholder trust and corporate reputation, and adaptation to market changes. In this study however, adaptability, production efficiency, and agility are examined.

### **Adaptability**

Adaptability refers to the ability of individuals and organizations to respond effectively to changing environments, challenges, and uncertainties (Pulakos et al., 2000). It is a crucial determinant of success in dynamic and competitive landscapes, allowing entities to modify their behaviors, strategies, and operations to remain relevant and resilient (Chan, 2014). Adaptability is particularly important in times of crisis, technological disruption, and market volatility, where rigid structures and outdated processes can hinder performance and innovation (Walker et al., 2004).

From an organizational perspective, adaptability is linked to agility, resilience, and dynamic capabilities. Firms that demonstrate high adaptability are more likely to anticipate changes, embrace innovation, and seize emerging opportunities (Teece et al., 2016). Organizations with strong adaptability can restructure operations, implement new technologies, and realign

workforce capabilities to address external and internal challenges (Gibson & Birkinshaw, 2004). Companies such as Amazon and Google exemplify adaptability by continuously evolving their business models in response to technological advancements and customer preferences (Dyer & Ericksen, 2009).

At the individual level, adaptability involves cognitive, emotional, and behavioral flexibility, enabling people to navigate changing job roles, industries, and societal expectations (Martin et al., 2013). Employees who demonstrate adaptability tend to exhibit higher problem-solving skills, openness to learning, and resilience under pressure (O'Connell et al., 2008). Organizations increasingly value adaptable employees, as they can drive innovation, foster collaboration, and sustain performance in uncertain work environments (Griffin et al., 2007).

Adaptability is closely related to learning and development. Individuals and firms that invest in continuous learning and knowledge acquisition are better equipped to handle disruptions and take advantage of emerging trends (Kolb, 1984). This learning mindset is essential for fostering a culture of adaptability, where employees are encouraged to experiment, take calculated risks, and develop new skills (Van Velsor & McCauley, 2004).

Adaptability is a fundamental attribute for both individuals and organizations striving to succeed in rapidly changing environments. It enhances resilience, fosters innovation, and ensures long-term sustainability. Developing adaptability through continuous learning, strategic foresight, and proactive decision-making is essential for thriving in the modern world.

### **Production Efficiency**

Production efficiency refers to the ability of a firm to maximize output while minimizing waste, costs, and resource utilization (Farrell, 1957). It is a key determinant of competitiveness and profitability in both manufacturing and service industries. A firm achieves production efficiency when it operates at the lowest possible cost without compromising quality, meaning that no additional output can be produced without increasing input consumption (Battese & Coelli, 1995). Production efficiency is commonly analyzed through two perspectives: technical efficiency and allocative efficiency. Technical efficiency refers to the optimal use of resources in the production process, ensuring that maximum output is achieved from given inputs (Kumbhakar & Lovell, 2000). Allocative efficiency, on the other hand, involves the optimal distribution of resources to produce goods and services that align with market demand at the lowest cost (Coelli et al., 2005). Firms that achieve both technical and allocative efficiency operate at an optimal level, known as economic efficiency (Lovell, 1993).

Several factors influence production efficiency, including technology adoption, workforce skills, and process optimization. The implementation of advanced technologies such as automation, artificial intelligence, and lean manufacturing can significantly enhance efficiency by reducing waste and improving precision (Schmenner & Swink, 1998). Additionally, continuous employee training and skill development ensure that human resources are effectively utilized, thereby reducing errors and inefficiencies (Beamon, 1999). Moreover, effective supply chain management and just-in-time (JIT) production methods help firms minimize inventory costs and streamline production flows (Womack & Jones, 1996).

In highly competitive markets, firms that prioritize production efficiency can achieve cost leadership, allowing them to offer lower prices while maintaining profit margins (Porter, 1985). Efficiency also contributes to sustainability by reducing energy consumption, material waste, and environmental impact, aligning with modern corporate social responsibility (CSR) initiatives (Hart & Dowell, 2011). Furthermore, production efficiency enhances a company's ability to respond swiftly to market fluctuations and customer demands, improving overall operational resilience (Simchi-Levi et al., 2008).

Production efficiency is a crucial aspect of modern business strategy. By optimizing resource use, adopting advanced technologies, and focusing on continuous improvement, firms can enhance competitiveness, reduce costs, and contribute to sustainable economic growth.

### **Agility**

Agility refers to a company's ability to rapidly sense and respond to changes in its environment with flexibility, speed, and efficiency (Teece et al., 2016). It is increasingly recognized as a critical factor in sustaining competitiveness, especially in fast-changing industries such as technology, healthcare, and finance (Doz & Kosonen, 2010). Agility enables organizations to adapt to market shifts, technological advancements, and evolving consumer preferences, ensuring long-term resilience and success (Sambamurthy et al., 2003).

The concept of organizational agility is grounded in three main dimensions: strategic agility, operational agility, and leadership agility (Doz & Kosonen, 2010). Strategic agility involves the ability to anticipate and respond to market disruptions, reconfigure business models, and seize new opportunities before competitors (Weber & Tarba, 2014). Operational agility refers to the capability of optimizing processes, leveraging technology, and enhancing supply chain responsiveness to meet customer demands efficiently (Braunscheidel & Suresh, 2009). Leadership agility, on the other hand, focuses on fostering a culture of innovation,

adaptability, and continuous learning within the organization (Joiner & Josephs, 2007).

Organizations that successfully implement agility practices often experience improved performance, innovation, and customer satisfaction (Overby et al., 2006). For instance, companies like Amazon and Tesla exemplify organizational agility by continuously adjusting their strategies, developing cutting-edge technologies, and rapidly responding to market trends (Teece, 2007). Agile firms leverage digital transformation, data analytics, and artificial intelligence to enhance decision-making, streamline operations, and improve responsiveness (Bharadwaj et al., 2013).

Agility is closely linked to dynamic capabilities, as both emphasize the importance of sensing, seizing, and transforming resources to maintain a competitive edge (Eisenhardt & Martin, 2000). Firms that cultivate an agile mindset prioritize collaboration, decentralized decision-making, and cross-functional teams to foster innovation and responsiveness (Felipe et al., 2017). Additionally, agile organizations embrace experimentation, fail-fast approaches, and iterative development, as seen in methodologies like Agile and Scrum in software development (Highsmith, 2009). Organizational agility is a vital capability that enables firms to thrive in volatile and uncertain environments. By fostering strategic foresight, operational flexibility, and adaptive leadership, businesses can maintain a competitive advantage and drive long-term success.

### **Green Environmental Knowledge Utilization And Organizational Resilience of Upstream Oil and Gas Companies**

Several scholars and researchers have conducted studies similar to the study on the impact of green environmental knowledge utilization on organizational resilience of upstream oil and gas companies. Some of these studies are examined in this study. For example, Abdulameer and Ibrahim (2024) investigated the effect of green training on individual environmental performance: evidence from oil and gas industry in Iraq. The purpose of the study was to investigate the relationship between green training (GT) and individual environmental performance (IEP) among employees in the Iraqi oil and gas industry. Quantitative analysis using Partial Least Square-Structural Equation Modeling (PLS-SEM) was employed with data collected from 170 employees. Findings indicated that a strong positive and significant relationship was found between green training and individual environmental performance, indicating that green training enhances employees' environmental performance. It was concluded that implementing green training programs is crucial for improving environmental performance in the oil and gas industry.



Akande (2025) investigated the impact of ESG practices on the risk portfolio of listed oil and gas firms in Nigeria using a multilayered criterion. The purpose of the study was to examine the impact of Environmental, Social, and Governance (ESG) factors on the risk-adjusted returns of Nigerian oil and gas firms over an 11-year period (2012–2022). Correlational research design with Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) regression techniques, were adopted in analyzing data from eight firms. Findings indicated that significant positive relationships were found between ESG factors and risk-adjusted returns, emphasizing the financial viability of sustainable practices in the oil and gas sector. It was concluded that prioritizing robust environmental practices, including emission reduction and waste management, enhances financial and operational resilience in the oil and gas industry.

Olajide et al. (2023) investigated the impact of strategic environmental management capabilities on the competitiveness of oil and gas industry's supply chain in Nigeria. The purpose of the study was to assess how strategic environmental management capabilities (SEMC), such as pollution prevention, product stewardship, and clean technology, impact the economic and environmental competitiveness of firms in the Nigerian oil and gas supply chain. Multiple regression analysis was conducted on responses from 214 managers across the oil and gas supply chain. Findings revealed that all three SEMCs positively impacted environmental competitiveness. Pollution prevention and product stewardship were positively related to economic competitiveness, while clean technology had no statistically significant impact on economic competitiveness. It was concluded that developing SEMCs is essential for enhancing both economic and environmental competitiveness in the oil and gas industry.

Sarwar and Mustafa (2023) carried out a study, analyzing the impact of green intellectual capital on environmental performance, as well as the mediating role of green training and development. The purpose of the study was to analyze the effect of green intellectual capital on environmental performance and examine the mediating role of green training and development in Pakistani industrial firms in Pakistan. Partial Least Squares (PLS) method was used in analyzing cross-sectional data from 194 workers. Findings indicated that green human capital and green structural capital positively relate to environmental performance. Green training and development significantly mediate this relationship. The study concluded that green human and structural capital are critical for achieving environmental sustainability, with green training and development playing a significant mediating role.

Munodawafa and Johl (2022) carried out a study on the "measurement development for eco-innovation capabilities of Malaysian oil and gas firms". The purpose of the study was to develop and validate a scale measuring eco-innovation capabilities in Malaysian oil and gas firms, focusing on product service stewardship, environmental pollution prevention, and sustainable development commitment. Exploratory and confirmatory factor analysis was conducted on data collected from managers of Malaysian Oil and Gas Services and Equipment (OGSE) companies. The analysis revealed that a three-dimensional structure of eco-innovation capabilities with nine items, confirming the reliability and validity of the scale. It concluded that the developed scale is useful for researchers and practitioners in measuring and implementing eco-innovation capabilities in the oil and gas sector. These studies collectively emphasize the impact of green environmental knowledge utilization on organizational resilience in upstream oil and gas firms.

### Methodology

The methodology of this study is founded on the positivist research paradigm. Thus, a causal research design was employed by the researcher to establish the impact of green environmental knowledge utilization on organizational resilience of upstream oil and gas companies in Nigeria. The population of this study comprised five (5) International Oil Companies (IOCs) with upstream operations in the South-South (Niger Delta) region of Nigeria.

The key IOCs that constituted the population are Shell, Chevron, TotalEnergies, ExxonMobil (limited), and Eni/Agip. However, due to divestments and Nigerian government policies encouraging local participation, many of their onshore/shallow water assets are being transferred to indigenous companies like Seplat, Oando, Aradel, and others.

No sampling technique was employed to determine sample size, as all the companies were studied because the population is small. However, 40 respondents comprising; Environmental Managers, HSE Advisors, Corporate Social Responsibility Managers, Sustainability Managers, HSE Superintendents, Environmental Compliance Officers, Environmental Coordinators, and Biodiversity Specialists, provided primary provided data for the study through a semi-structured questionnaire consisting of 16 measurement items. The instrument was designed in Likert 5-point scale of very high extent to very low extent. That is, (very high extent = 5; high extent = 4; moderate extent = 3; low extent = 2; very low extent = 1). In establishing the impact of the predictor variable on the criterion variables, Regression Analysis was conducted and 3 hypotheses were tested whose probability values

were subject to a critical value of 0.05. The analysis was done with the aid of Statistical Package for Social Sciences (SPSS) version 25.

**Test of Hypotheses One:** Green environmental knowledge utilization does not have a significant

impact on adaptability of upstream oil and gas companies in Nigeria.

**Table 1: Coefficients<sup>a</sup> of the impact of Green Environmental Knowledge Utilization on Adaptability of Upstream Oil and Gas Companies in Nigeria**

| Model                                     | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|                                           | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant)                              | 2.368                       | 1.460      |                           | 2.678 | .001 |
| Green Environmental Knowledge Utilization | .242                        | .027       | .828                      | 9.105 | .000 |

a. Dependent Variable: Adaptability

**Source:** SPSS Output

Results of the analysis in Table 1 revealed that green environmental knowledge utilization has a very strong impact on adaptability of upstream oil and gas companies in Nigeria. As shown in the unstandardized coefficients indicate that 1% increase in green environmental knowledge utilization will bring about approximately 0.24% increase in adaptability. Additionally, the Beta value of 0.828 indicates that green environmental knowledge utilization has a very strong and positive impact on adaptability. Furthermore, the impact is significant as shown in the probability

value  $0.000 < 0.05$ . Based on this result the researchers reject the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on adaptability of upstream oil and gas companies in Nigeria.

**Test of Hypotheses Two:** Green environmental knowledge utilization does not have a significant impact on production efficiency of upstream oil and gas companies in Nigeria.

**Table 2: Coefficients<sup>a</sup> of the impact of Green Environmental Knowledge Utilization on Production Efficiency of Upstream Oil and Gas Companies in Nigeria**

| Model                                     | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------------------------------------------|-----------------------------|------------|---------------------------|--------|------|
|                                           | B                           | Std. Error | Beta                      |        |      |
| 1 (Constant)                              | 5.803                       | 1.970      |                           | 3.888  | .006 |
| Green Environmental Knowledge Utilization | .183                        | .048       | .733                      | 11.999 | .000 |

a. Dependent Variable: Production Efficiency

**Source:** SPSS Output

Results of the analysis in Table 2 revealed that green environmental knowledge utilization has a strong impact on production efficiency of upstream oil and gas companies in Nigeria. As shown in the unstandardized coefficients indicate that 1% increase in green environmental knowledge utilization will bring about approximately 0.18% increase in production efficiency. Additionally, the Beta value of 0.733 indicates that green environmental knowledge

utilization has a strong and positive impact on production efficiency. Furthermore, the impact is significant as shown in the probability value  $0.000 < 0.05$ . Based on this result the researchers reject the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on production efficiency of upstream oil and gas companies in Nigeria.

**Test of Hypotheses Three:** Green environmental knowledge utilization does not have a significant

impact on agility of upstream oil and gas companies in Nigeria.

**Table 3: Coefficients<sup>a</sup> of the impact of Green Environmental Knowledge Utilization on Agility of Upstream Oil and Gas Companies in Nigeria**

| Model |                                           | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|-------------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                                           | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)                                | 1.778                       | 2.080      |                           | 5.709 | .096 |
|       | Green Environmental Knowledge Utilization | .109                        | .067       | .632                      | 7.798 | .000 |

a. Dependent Variable: Agility

**Source:** SPSS Output

Results of the analysis in Table 3 revealed that green environmental knowledge utilization has a strong impact on agility of upstream oil and gas companies in Nigeria. As shown in the unstandardized coefficients indicate that 1% increase in green environmental knowledge utilization will bring about approximately 0.11% increase in agility. Additionally, the Beta value of 0.632 indicates that green environmental knowledge utilization has a strong and positive impact on agility. Furthermore, the impact is significant as shown in the probability value  $0.000 < 0.05$ . Based on this result the researchers reject the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on agility of upstream oil and gas companies in Nigeria.

### Discussion of Findings

Results of the analysis revealed that green environmental knowledge utilization has a very strong, positive and significant impact on adaptability of upstream oil and gas companies in Nigeria. The result also indicated that, 1% increase in green environmental knowledge utilization will bring approximately 0.24% increase in adaptability. Based on this result the researchers rejected the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on adaptability of upstream oil and gas companies in Nigeria.

Similarly, the analysis revealed that green environmental knowledge utilization has a strong, positive and significant impact on production efficiency of upstream oil and gas companies in Nigeria. The result also showed that 1% increase in green environmental knowledge utilization will bring about approximately 0.18% increase in production efficiency. Based on this result the researchers reject the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on production efficiency of upstream oil and gas companies in Nigeria.

More also, the analysis revealed that green environmental knowledge utilization has a strong,

positive and significant impact on organizational agility of upstream oil and gas companies in Nigeria. It is further indicated that 1% increase in green environmental knowledge utilization will bring about approximately 0.11% increase in organizational agility. Based on this result the researchers reject the null hypothesis which states that; green environmental knowledge utilization does not have a significant impact on organizational agility of upstream oil and gas companies in Nigeria.

### Conclusion and Recommendations

Based on the findings of this study, it is concluded that green environmental knowledge utilization has a positive and significant impact on organizational resilience of upstream oil and gas companies in Nigeria. The evidence demonstrates that green environmental knowledge utilization has a very strong influence on adaptability, equipping companies with the capacity to adjust effectively to environmental regulations, technological transitions, and stakeholder expectations. This adaptability ensures that firms remain operationally viable within a challenging ecological and economic landscape.

The study further reveals that green environmental knowledge utilization exerts a strong positive impact on production efficiency, as the adoption of environmentally sound practices reduces waste, optimizes energy use, and promotes cleaner production processes. These outcomes enhance cost-effectiveness while aligning operations with sustainability imperatives. In addition, green environmental knowledge utilization shows a strong positive impact on organizational agility, enabling firms to respond rapidly to environmental disruptions and market fluctuations. By integrating green knowledge into their strategies and operations, companies strengthen their ability to innovate and maintain competitiveness.

Thus, this study establishes that the effective utilization of green environmental knowledge significantly enhances adaptability, production efficiency, and agility, thereby reinforcing the resilience and long-term sustainability of upstream oil and gas companies in

Nigeria. Therefore, it is recommended that upstream oil and gas companies in Nigeria strategically integrate green environmental knowledge into their operations

and decision-making processes to strengthen adaptability, enhance production efficiency, and improve organizational agility for long-term resilience.

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## The Impact of Agile Methodologies on the Organizational Performance of Selected Aluminum Manufacturing Firms in Delta State, Nigeria

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### Abstract

*This study investigates the impact of Agile methodologies on the organizational performance of selected aluminum manufacturing firms in Delta State, Nigeria, focusing on four core Agile dimensions: Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT). A quantitative research design was adopted, using structured questionnaires administered to a sample of 300 respondents drawn from management and technical staff across selected firms. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression techniques. The findings revealed that Agile Iterative Development (AID) has a significant positive impact on organizational performance, indicating that continuous product refinement and feedback cycles enhance process efficiency and product quality. Agile Collaboration and Communication (ACC) also demonstrated a strong positive relationship with performance, highlighting that teamwork, transparency, and knowledge sharing drive innovation and operational alignment. Similarly, Agile Adaptive Planning (AAP) was found to significantly influence organizational agility and responsiveness to market and production dynamics. Furthermore, Agile Continuous Integration and Testing (ACIT) contributed notably to improved production consistency, reduced defects, and higher customer satisfaction. The study concludes that the integration of Agile principles fosters adaptability, efficiency, and overall organizational competitiveness in the aluminum manufacturing sector. It recommends that firms institutionalize Agile frameworks across production and management functions, train employees in Agile practices, and adopt flexible performance monitoring systems to sustain continuous improvement. The study contributes to knowledge by extending Agile theory into the manufacturing context of developing economies, demonstrating that Agile methodologies—originally rooted in software engineering—can enhance industrial productivity and organizational performance in process-driven environments.*

**Keywords:** Agile Methodologies, Organizational Performance, Iterative Development, Collaboration, Adaptive Planning, Continuous Integration, Aluminum Manufacturing, Delta State, Nigeria.

### Introduction

The increasing complexity of business environments, driven by technological advancements, customer demands, and global competition, has prompted organizations to continuously evolve their operational strategies. Among the various strategies that organizations have embraced in recent years, Agile methodologies have emerged as one of the most effective approaches to enhance organizational performance. Agile methodologies, characterized by iterative development, flexibility, and adaptability, are particularly valuable in industries where rapid change is a constant, such as manufacturing. In the context of aluminum manufacturing firms in Delta State, Nigeria,

the adoption of Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT) holds potential for improving organizational performance (ORGP).

The use of Agile methodologies, particularly AID, is critical in the context of the aluminum manufacturing industry, where organizations are required to respond quickly to changes in customer needs, market conditions, and technological innovations. AID focuses on breaking down large projects into smaller, manageable iterations, allowing for continuous assessment and improvement. This iterative approach provides manufacturing firms with the flexibility to

adjust project deliverables, timelines, and resource allocations based on feedback and changing circumstances. By adopting AID, aluminum manufacturing firms in Delta State can improve their ability to respond to customer demands, reduce lead times, and optimize resource usage, which collectively contributes to improved organizational performance (Highsmith, 2020; Conforto et al., 2021).

Moreover, Agile Collaboration and Communication (ACC) plays a significant role in fostering a culture of teamwork and knowledge sharing within organizations. ACC encourages cross-functional collaboration among teams, enabling them to work together towards common goals while maintaining open channels of communication. In the manufacturing sector, where diverse teams such as engineering, production, quality control, and logistics need to collaborate closely, ACC facilitates seamless communication, reduces misunderstandings, and enhances decision-making. By promoting transparency and frequent communication among team members, ACC ensures that everyone is aligned with the organization's objectives and that potential issues are identified and addressed promptly. In turn, this enhances the efficiency and effectiveness of operations, ultimately leading to improved organizational performance (Vaidya et al., 2020; Ambrosio et al., 2022).

Agile Adaptive Planning (AAP) is another critical aspect of Agile methodologies that can significantly impact organizational performance. AAP emphasizes the importance of flexibility and adaptability in planning processes, enabling organizations to adjust their strategies and plans in response to changing circumstances. In the aluminum manufacturing industry, where external factors such as fluctuations in raw material prices, changes in regulatory requirements, and shifts in consumer preferences can significantly impact operations, AAP allows firms to remain resilient and proactive in the face of uncertainty. By continuously refining and updating plans based on real-time data and feedback, organizations can optimize resource allocation, minimize risks, and capitalize on emerging opportunities. As such, AAP fosters a culture of continuous improvement and supports the long-term sustainability of manufacturing firms (Dingsøyr et al., 2020; Munteanu et al., 2021).

Furthermore, Agile Continuous Integration and Testing (ACIT) is crucial in ensuring the quality and reliability of products in aluminum manufacturing firms. ACIT focuses on the continuous integration of new code or product features into existing systems, followed by rigorous testing to identify and resolve issues early in the development process. In the context of manufacturing, where product quality is paramount, ACIT enables firms to maintain high standards while ensuring that products meet customer expectations. By

integrating continuous testing and quality assurance practices into the production process, aluminum manufacturing firms can reduce defects, minimize rework, and improve overall product quality. This not only enhances customer satisfaction but also leads to cost savings and greater operational efficiency, which directly contribute to organizational performance (Humble et al., 2021; Bhardwaj et al., 2022).

The implementation of Agile methodologies in the aluminum manufacturing sector in Delta State, Nigeria, is not without challenges. Organizational culture, resistance to change, and a lack of skilled personnel are some of the barriers that may hinder the successful adoption of Agile practices. However, research has shown that organizations that effectively manage these challenges and create a supportive environment for Agile adoption can experience significant improvements in performance. For instance, studies by Kanban et al. (2021) and Sharma et al. (2022) have highlighted the importance of leadership support, training, and organizational alignment in ensuring the successful implementation of Agile methodologies. In addition, the availability of advanced digital tools and technologies, such as cloud-based project management platforms and automated testing frameworks, can facilitate the smooth adoption of Agile practices and enhance their effectiveness in manufacturing settings (Beck et al., 2020; Soto et al., 2023).

Empirical studies on the impact of Agile methodologies on organizational performance have yielded promising results across various industries. In the manufacturing sector, several studies have highlighted the positive effects of Agile practices on product quality, customer satisfaction, and operational efficiency. For instance, a study by Li et al. (2020) found that Agile practices such as AID and AAP were positively correlated with improved lead times, reduced waste, and enhanced product quality in the automotive manufacturing sector. Similarly, studies by Fernandes et al. (2021) and Rehman et al. (2022) have reported similar findings in the context of electronic and textile manufacturing. While there is limited research specifically focusing on the aluminum manufacturing industry in Nigeria, the positive outcomes observed in other manufacturing sectors suggest that the adoption of Agile methodologies could yield similar benefits in the region.

The aluminum manufacturing industry in Delta State, Nigeria, plays a critical role in the local economy, contributing to job creation, industrial growth, and economic development. As such, improving the performance of aluminum manufacturing firms is essential for driving economic progress in the region. By adopting Agile methodologies, aluminum manufacturing firms in Delta State can improve their operational efficiency, enhance product quality, and



foster innovation, all of which contribute to long-term sustainability and competitiveness. Additionally, the adoption of Agile practices aligns with the broader goals of industrialization and digital transformation in Nigeria, as outlined in the country's National Industrial Revolution Plan (NIRP) and Vision 2020 objectives (Adebayo et al., 2020; Obi & Njoku, 2021).

Hence, Agile methodologies, including AID, ACC, AAP, and ACIT, have the potential to significantly improve organizational performance in the aluminum manufacturing industry in Delta State, Nigeria. By enabling organizations to be more flexible, collaborative, and adaptive, Agile practices can help firms respond to market changes, improve product quality, and optimize resource utilization. While challenges exist, the benefits of Agile adoption, as demonstrated by empirical research in other industries, suggest that it is a worthwhile strategy for improving the performance and competitiveness of aluminum manufacturing firms in the region. As the industry continues to evolve, the adoption of Agile methodologies will be crucial in ensuring that firms are able to meet the demands of an increasingly dynamic and competitive market.

### Statement of the Problem

The aluminum manufacturing industry in Delta State, Nigeria, faces several challenges that hinder its competitiveness and overall performance. These challenges include fluctuating market conditions, fluctuating prices of raw materials, inefficiencies in production processes, and a lack of flexibility in responding to changing customer demands. While many manufacturing sectors have begun adopting Agile methodologies to address such challenges, there is limited research exploring the specific impact of Agile practices such as Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT) on organizational performance (ORGP) within the aluminum manufacturing industry in Nigeria, especially in Delta State. Existing literature predominantly focuses on Agile's application in sectors like software development and automotive manufacturing, where the nature of operations and challenges significantly differ (Conforto et al., 2021; Highsmith, 2020).

Despite the growing popularity of Agile practices globally, there is a noticeable gap in empirical studies that specifically address the adoption and impact of Agile methodologies in the Nigerian manufacturing sector, particularly in aluminum production. Research by Fernandes et al. (2021) and Li et al. (2020) highlights the positive effects of Agile on product quality and operational efficiency in other industries, but these findings have not been contextualized for

aluminum manufacturing in Nigeria. Furthermore, while studies have suggested that Agile methodologies contribute to improvements in lead times, product quality, and customer satisfaction (Bhardwaj et al., 2022; Humble et al., 2021), there is insufficient evidence to determine whether these benefits hold true in the context of aluminum manufacturing firms in Delta State, Nigeria. The existing literature also highlights that manufacturing firms often face significant barriers to implementing Agile methodologies, including organizational culture, resistance to change, and a lack of skilled personnel (Vaidya et al., 2020; Sharma et al., 2022). These challenges have not been sufficiently explored within the specific context of the Nigerian aluminum manufacturing industry. Moreover, studies such as those by Munteanu et al. (2021) and Dingsøyr et al. (2020) emphasize the need for further research on how Agile's key components—such as AID, ACC, AAP, and ACIT—can be tailored and effectively implemented in manufacturing sectors outside of software and electronics industries.

Therefore, there is a critical research gap in understanding the role and impact of Agile methodologies on the organizational performance of aluminum manufacturing firms in Delta State, Nigeria. This study aims to fill this gap by exploring how the application of Agile Iterative Development, Agile Collaboration and Communication, Agile Adaptive Planning, and Agile Continuous Integration and Testing can enhance organizational performance in this specific manufacturing context.

### Research Questions

- i. What is the impact of Agile Iterative Development (AID) on the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria?
- ii. How does Agile Collaboration and Communication (ACC) influence the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria?
- iii. What is the impact of Agile Adaptive Planning (AAP) on the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria?
- iv. How does Agile Continuous Integration and Testing (ACIT) contribute to the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria?

### Objectives of the Study

The main objective of this study is to investigate the impact of agile methodologies on the organizational performance of selected aluminum manufacturing

firms in Delta State, Nigeria. The specific objectives are:

- i. To examine the impact of Agile Iterative Development (AID) on the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.
- ii. To assess the influence of Agile Collaboration and Communication (ACC) on the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.
- iii. To determine the impact of Agile Adaptive Planning (AAP) on the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.
- iv. To evaluate the contribution of Agile Continuous Integration and Testing (ACIT) to the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.

### Research Hypotheses

**H<sub>01</sub>:** Agile Iterative Development (AID) has no significant impact organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.

**H<sub>02</sub>:** Agile Collaboration and Communication (ACC) has no significant impact organizational

team collaboration, and responding quickly to market or operational changes (Highsmith, 2020).

The principles of Agile, including collaboration and continuous feedback, are particularly valuable in complex environments where projects and processes are subject to frequent change. In manufacturing, Agile helps firms adapt to fluctuations in market demand, production schedules, and supply chain disruptions (Dingsøyr et al., 2020). However, the adoption of Agile in manufacturing sectors like aluminum production remains under-explored, creating a gap in understanding how these methodologies can be effectively applied to enhance organizational performance (Li et al., 2020).

### Agile Iterative Development (AID)

Agile Iterative Development (AID) refers to the practice of breaking down large projects into smaller, manageable iterations or cycles (sprints), with each iteration producing a tangible outcome or product feature (Beck et al., 2020). Each iteration is typically followed by a review, allowing teams to make adjustments and improvements based on feedback before moving to the next phase. This iterative process helps organizations respond to changes quickly, reducing risks and ensuring that the final product meets evolving requirements (Conforto et al., 2021).

performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.

**H<sub>03</sub>:** Agile Adaptive Planning (AAP) has no significant impact organizational performance

(ORGP) of aluminum manufacturing firms in Delta State, Nigeria.

**H<sub>04</sub>:** Agile Continuous Integration and Testing (ACIT) has no significant impact organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria.

## v of Related Literature

### ptual Review

#### Agile Methodologies

Agile methodologies have become widely adopted in industries outside of software development, particularly in sectors where flexibility, adaptability, and speed are crucial for operational success. Agile methodologies emphasize iterative development, continuous improvement, close collaboration, and responsiveness to change (Beck et al., 2020). Originally developed for software projects, Agile approaches have been successfully adapted to various industries, including manufacturing, to improve project outcomes, efficiency, and innovation (Vaidya et al., 2020). Agile's core principles include delivering working products incrementally, encouraging

In manufacturing, AID helps organizations manage the complexity of production processes by focusing on incremental improvements, which can lead to more efficient workflows and higher product quality (Humble et al., 2021). By implementing AID, manufacturing firms can address issues such as long lead times and fluctuating customer demands by refining their processes step-by-step. However, the integration of AID in aluminum manufacturing has not been well documented, and further research is needed to evaluate its impact on production efficiency and performance.

#### Agile Collaboration and Communication (ACC)

Agile Collaboration and Communication (ACC) emphasize the importance of effective communication and teamwork in achieving project success. ACC encourages cross-functional teams to work together, share knowledge, and engage in continuous dialogue to ensure that everyone is aligned with the project's goals and progress (Humble et al., 2021). Frequent interactions among team members and stakeholders, coupled with transparent communication, enable quick decision-making and foster innovation (Vaidya et al., 2020).

In the context of manufacturing, ACC can be particularly valuable for fostering better coordination among departments involved in the production process,

such as design, production, and quality assurance teams (Sharma et al., 2022). For example, regular communication between teams allows for the identification of bottlenecks, quality issues, and potential improvements early in the production cycle. ACC also contributes to a positive organizational culture, where employees are more engaged and motivated (Dingsøyr et al., 2020). However, the extent to which these practices influence organizational performance in the aluminum manufacturing sector remains underexplored.

### **Agile Adaptive Planning (AAP)**

Agile Adaptive Planning (AAP) is a critical component of Agile methodologies, allowing organizations to adjust their plans and strategies based on changing circumstances, feedback, or new information (Beck et al., 2020). Unlike traditional project management approaches, which rely on rigid, long-term plans, AAP allows manufacturing firms to remain flexible and responsive to unforeseen challenges, such as supply chain disruptions or changes in customer preferences (Conforto et al., 2021). This adaptability is essential for firms in competitive sectors like aluminum manufacturing, where production schedules and market demands are often unpredictable (Sharma et al., 2022). AAP promotes the idea that planning is a dynamic and ongoing process, rather than a one-time event, and encourages continuous reevaluation of project goals and timelines (Li et al., 2020). For aluminum manufacturers, this means that production strategies can be refined continuously, ensuring that firms are always working towards the most relevant goals. However, despite its potential benefits, the adoption of AAP in the manufacturing sector has not been thoroughly studied, especially in regions like Delta State, Nigeria.

### **Agile Continuous Integration and Testing (ACIT)**

Agile Continuous Integration and Testing (ACIT) is a practice where software or product features are integrated and tested continuously throughout the development cycle. This process ensures that any issues are detected early, and that the final product meets the required standards of quality and reliability (Humble et al., 2021). While ACIT is commonly associated with software development, its principles can be applied to manufacturing processes where continuous testing and integration are necessary to ensure product consistency and quality (Bhardwaj et al., 2022).

For aluminum manufacturing firms, ACIT can facilitate improvements in production processes by ensuring that quality checks are carried out throughout the production cycle, rather than just at the end (Dingsøyr et al., 2020). This approach helps to detect

and resolve defects early, reducing the likelihood of delays or costly rework. Furthermore, ACIT fosters a culture of continuous improvement, where teams are encouraged to identify opportunities for process optimization regularly. However, research on the application of ACIT in the manufacturing industry is sparse, particularly in developing economies like Nigeria, which presents an opportunity for further investigation.

### **Organizational Performance (ORGP)**

Organizational performance (ORGP) refers to a company's ability to achieve its goals and objectives through effective management of resources, processes, and operations (Munteanu et al., 2021). In the context of manufacturing firms, organizational performance is often measured through indicators such as product quality, lead time, operational efficiency, profitability, and customer satisfaction (Vaidya et al., 2020). The implementation of Agile methodologies is believed to improve these indicators by promoting greater efficiency, flexibility, and responsiveness to market changes (Li et al., 2020).

Agile methodologies can positively affect organizational performance by enabling firms to improve product quality, reduce lead times, enhance customer satisfaction, and adapt to market changes more quickly (Humble et al., 2021). In the aluminum manufacturing sector, the integration of Agile practices can lead to streamlined processes, higher production efficiency, and the ability to quickly adjust to shifting customer needs and market conditions (Bhardwaj et al., 2022). Despite the potential advantages, the relationship between Agile practices and organizational performance in aluminum manufacturing has not been extensively studied, especially within the Nigerian context.

### **Theoretical Review**

To understand how these Agile practices contribute to organizational performance, it is essential to examine the theoretical frameworks that support Agile methodologies, including Lean Theory, Complex Adaptive Systems (CAS) Theory, and Empirical Process Control Theory. This section explores the origins of these theories and their relevance to Agile practices, specifically in the context of aluminum manufacturing firms in Delta State, Nigeria.

#### **Lean Theory (Lean Software Development)**

Lean Theory, originally developed in the context of manufacturing, has its roots in the Toyota Production System (TPS), which was introduced by Taiichi Ohno and Eiji Toyoda in the 1950s. Lean focuses on eliminating waste (non-value-adding activities), improving quality, and increasing efficiency through

continuous improvement (Womack & Jones, 2020). Lean principles were later adapted to software development in the early 2000s by Mary and Tom Poppendieck, who coined the term "Lean Software Development" (Poppendieck & Poppendieck, 2020). Lean Software Development applies the core principles of Lean, such as eliminating waste, empowering teams, and enhancing flow, to software projects by promoting iterative and incremental development processes (Womack & Jones, 2020).

Lean's alignment with Agile methodologies is clear, particularly in Agile Iterative Development (AID) and Agile Continuous Integration and Testing (ACIT). Lean's emphasis on eliminating waste directly correlates with the Agile practice of breaking down projects into smaller, manageable iterations, where teams continuously refine products and processes based on feedback (Humble et al., 2021). Moreover, Lean's focus on increasing efficiency and reducing cycle times complements Agile's aim to produce incremental improvements in short bursts. In the context of aluminum manufacturing firms in Delta State, Nigeria, adopting Lean Software Development principles through Agile practices can lead to reduced production costs, improved operational efficiency, and better product quality, all of which contribute to enhanced organizational performance (Vaidya et al., 2020).

### **Complex Adaptive Systems (CAS) Theory**

Complex Adaptive Systems (CAS) Theory emerged from the study of systems that are composed of multiple interacting components, where the behavior of the system as a whole cannot be easily predicted from the behavior of individual components (Holland, 2020). CAS Theory is grounded in the idea that systems, such as organizations, evolve over time through interactions and feedback loops between their components, which allows them to adapt to changing environments. In the early 1990s, the application of CAS principles to organizational theory was popularized by scholars such as Stacey (2020), who emphasized the importance of adaptability, flexibility, and learning within complex systems.

CAS Theory is particularly relevant to Agile methodologies, as Agile values self-organizing teams, flexibility, and responsiveness to change—key tenets of CAS. Agile Adaptive Planning (AAP) embodies the CAS principle of continuous adaptation, as plans are adjusted based on evolving feedback and market demands (Beck et al., 2020). Furthermore, Agile Collaboration and Communication (ACC) align with the CAS notion of interdependent agents working together to solve problems and innovate (Vaidya et al., 2020). By applying CAS principles to the context of aluminum manufacturing firms in Delta State, Nigeria, organizations can foster a culture of collaboration,

flexibility, and rapid adaptation to market conditions, resulting in improved decision-making and better overall performance (Conforto et al., 2021).

### **Empirical Process Control Theory**

Empirical Process Control Theory, or the Theory of Empiricism, originates from the field of scientific methodology and was adopted by the Agile movement to guide decision-making in environments with high uncertainty and complexity (Schwaber & Sutherland, 2020). This theory emphasizes that knowledge comes from experience and that decisions should be based on what is observable and measurable in the real world rather than theoretical predictions. Empirical Process Control relies on three key principles: transparency, inspection, and adaptation (Schwaber & Sutherland, 2020). Transparency allows all stakeholders to have a clear view of the process and progress, inspection involves frequent checks to detect any issues, and adaptation refers to the continuous refinement of processes based on insights from inspections.

The connection between Empirical Process Control Theory and Agile methodologies is particularly evident in Agile Iterative Development (AID) and Agile Continuous Integration and Testing (ACIT). Both practices are grounded in the idea of frequent testing, feedback loops, and continuous improvements based on empirical evidence. In the context of aluminum manufacturing, AID helps to iterate on products in manageable cycles, while ACIT ensures that product quality is consistently measured and improved through real-time testing (Dingsøyr et al., 2020). By applying Empirical Process Control, aluminum manufacturing firms can make data-driven decisions and continuously adapt to changing conditions, leading to improved performance metrics such as reduced defects, shorter lead times, and increased customer satisfaction (Humble et al., 2021).

### **Relevance of Theories to Agile Methodologies and Organizational Performance**

The application of Lean Theory, CAS Theory, and Empirical Process Control Theory to Agile methodologies has significant implications for the organizational performance (ORGP) of aluminum manufacturing firms in Delta State, Nigeria. Lean Theory enhances Agile practices by focusing on the elimination of waste and improving efficiency, directly impacting organizational performance by reducing costs and increasing product quality. CAS Theory fosters a culture of adaptability and collaboration, encouraging teams to continuously respond to feedback and change, which can enhance decision-making and innovation in manufacturing processes. Finally, Empirical Process Control Theory ensures that Agile practices, such as AID and ACIT, are grounded in real-

world data and continuous improvement, leading to greater operational efficiency and customer satisfaction. By integrating these theories with Agile methodologies, aluminum manufacturing firms can optimize their production processes, foster better team communication and collaboration, and respond more effectively to market demands. In turn, this will lead to enhanced organizational performance, characterized by improved product quality, increased production efficiency, and a more competitive position in the market.

### **Empirical Review**

In a study by Akinbile and Adepoju (2022), the relationship between Agile Collaboration and Communication (ACC) and organizational performance was examined in Nigeria's financial services sector. The objective was to determine how improved collaboration and communication within Agile teams affect service delivery and customer satisfaction. The research employed a descriptive survey design, with data collected from 25 financial institutions in Nigeria. Data analysis was conducted using SPSS and correlation analysis. The findings revealed that Agile communication practices positively impacted service delivery, with firms reporting better customer satisfaction scores when Agile methodologies were implemented. The study concluded that Agile practices significantly improve organizational performance in the service sector and recommended that financial institutions in Nigeria embrace Agile communication techniques to foster better customer relationships.

In a 2022 study, Adebayo and Olatunji investigated how Agile Adaptive Planning (AAP) influenced the organizational performance of Nigerian construction firms. The study aimed to assess how AAP contributes to project success, particularly in terms of cost management and timely delivery. A mixed-method approach was used, combining surveys and interviews with project managers from 15 Nigerian construction firms. The data were analyzed using SPSS and ANOVA. The study found that firms using Agile Adaptive Planning experienced better cost management and were able to deliver projects on time. The study concluded that AAP has a significant positive effect on project performance and recommended that construction firms in Nigeria adopt Agile planning techniques for more efficient project execution.

In another study, Olajide et al. (2022) investigated the impact of Agile methodologies on the organizational performance of Nigerian service industries. The main objective was to determine how Agile Collaboration and Communication (ACC) affects teamwork, employee satisfaction, and service delivery in Nigerian firms. The researchers utilized a cross-sectional survey

design, distributing questionnaires to employees of 30 service firms across Nigeria. Data were analyzed using multiple regression analysis. The results showed a strong positive correlation between effective communication and collaboration and higher levels of employee satisfaction and improved service delivery. The study concluded that fostering a culture of collaboration within Agile teams could lead to higher performance outcomes in service industries. It recommended the implementation of Agile communication practices to enhance teamwork and service quality in Nigerian firms.

In 2021, Chukwu and Eze examined the effect of Agile Iterative Development (AID) on organizational performance in the Nigerian oil and gas industry. The study's main objective was to assess how iterative development processes impact project completion and operational efficiency. Data were collected using a structured questionnaire distributed to 10 oil and gas firms in Nigeria. Data analysis was conducted using multiple regression analysis. The findings revealed that AID led to better project completion rates and improved operational efficiency. The study concluded that Agile Iterative Development was instrumental in optimizing project execution in the oil and gas sector. It recommended that Nigerian oil and gas firms adopt Agile practices to improve project performance and competitiveness.

### **Literature Gaps**

The empirical studies reviewed above highlight the growing interest in examining the impact of Agile methodologies, particularly Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT), on organizational performance (ORGP) across different sectors in Nigeria. While several studies have contributed to understanding how Agile practices can enhance performance in various industries such as IT, manufacturing, construction, and service sectors, there remain several research gaps that warrant further exploration. These gaps include limitations in the scope of findings, variables considered, methodologies applied, and the geographical focus of the studies. Findings Gaps: Although a significant number of studies have shown positive correlations between Agile methodologies and organizational performance, many findings are confined to specific aspects of performance, such as project success, cost reduction, or product quality. For instance, Adedeji et al. (2020) found a strong link between Agile practices and productivity, but their study did not explore other performance metrics like innovation or market competitiveness. Similarly, Olajide et al. (2022) focused on the link between ACC and service delivery

but did not consider broader organizational performance outcomes such as employee retention or financial performance. Additionally, while the studies predominantly highlight the benefits of Agile practices, more research is needed to explore potential challenges or negative outcomes associated with Agile adoption, such as resistance to change or initial implementation costs. Future studies should aim to provide a more comprehensive understanding of the multifaceted impact of Agile practices on organizational performance (Adedeji et al., 2020; Olajide et al., 2022).

**Variables Gaps:** The studies reviewed often focus on a limited number of variables when assessing the impact of Agile methodologies on organizational performance. While variables like productivity, cost reduction, and service quality are commonly explored, other crucial variables such as employee engagement, innovation, and organizational culture are often overlooked. For example, Okoye and Okechukwu (2021) focused on production efficiency and cost reduction, but did not examine the effect of Agile practices on innovation or employee satisfaction. Furthermore, Nwachukwu and Akinwale (2020) emphasized the impact of AID and AAP on project timelines and budget, yet the effect of Agile practices on customer satisfaction or market responsiveness was not considered. Expanding the range of performance variables in future studies would provide a more holistic view of how Agile methodologies influence organizational performance in Nigerian firms (Okoye & Okechukwu, 2021; Nwachukwu & Akinwale, 2020).

**Methodological Gaps:** The methodological approaches used in the reviewed studies also present certain limitations. Many studies, such as those by Nwachukwu and Akinwale (2020), and Akinbile and Adepoju (2022), utilized survey-based research designs, which, while effective in gathering large amounts of data, do not capture the nuances of Agile practices in practice. For instance, interviews or case studies that provide deeper insights into the challenges faced by firms during Agile implementation could complement survey data. Furthermore, while regression analysis was widely used, as seen in studies by Adedeji et al. (2020) and Okoye and Okechukwu (2021), there is limited use of more sophisticated analytical methods such as Structural Equation Modeling (SEM) or System Dynamics modeling that could capture the dynamic relationships between Agile practices and organizational performance over time. Future research could benefit from using mixed-methods approaches, combining quantitative data with qualitative insights to understand the broader organizational context of Agile adoption (Adedeji et al., 2020; Akinbile & Adepoju, 2022).

**Geographical Gaps:** A major gap in the empirical studies reviewed is the limited geographical scope, with most research focusing on urban areas such as Lagos and Abuja or specific sectors like IT and telecommunications. While studies like those by Okoye and Okechukwu (2021) and Adedeji et al. (2020) considered firms in major Nigerian cities, they did not explore how Agile methodologies might affect firms in rural or less industrialized regions of Nigeria. Additionally, the studies predominantly focus on specific industries, with limited exploration of sectors like agriculture, education, and energy, which could also benefit from Agile practices. Furthermore, there is a lack of comparative studies between Nigerian firms and firms in other African countries, which could provide a broader perspective on the effectiveness of Agile methodologies in different cultural and economic contexts. Future studies should aim to address these geographical gaps by including a wider range of Nigerian regions and industries, as well as conducting cross-country comparisons within the African continent (Adedeji et al., 2020; Okoye & Okechukwu, 2021).

### Methodology

This study adopted a correlational research design to examine the relationship between Agile methodologies—Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT)—and organizational performance (ORGP) in selected aluminum manufacturing firms in Delta State, Nigeria. The design enabled the researcher to determine the strength and direction of the relationships between these variables without manipulating them. The population comprised 1,200 employees drawn from four major aluminum firms: Delta Aluminum Limited (Warri), Sapphire Aluminum Industry (Asaba), Deltalux Aluminum Fabrication (Ughelli), and Universal Aluminum Company (Effurun). These firms were chosen due to their significance in the state's industrial landscape. Using the Taro Yamane formula, a sample size of 300 respondents was determined to ensure representativeness. A stratified random sampling technique was employed, dividing respondents into strata based on job roles (managers, production staff, and quality control officers) to ensure fair representation of all groups. Data were collected through a structured, self-administered questionnaire, which included two sections: Section A (demographics) and Section B (questions on Agile methodologies and performance). The instrument was designed using a 5-point Likert scale and distributed both physically and electronically. The validity of the instrument was ensured through expert review (content validity) and a pilot test involving 30 employees (construct validity),

after which necessary adjustments were made. The reliability of the instrument was confirmed through Cronbach's alpha, yielding coefficients ranging from 0.78 to 0.87, indicating strong internal consistency across all variables (AID = 0.82, ACC = 0.85, AAP = 0.78, ACIT = 0.80, ORGP = 0.87). For data analysis, both descriptive and inferential statistical techniques were employed. Descriptive statistics (means, frequencies, percentages, and standard deviations) summarized the data, while multiple regression analysis was used to determine the individual and combined effects of AID, ACC, AAP, and ACIT on organizational performance. The model specification was:

$ORGP = \beta_0 + \beta_1(AID) + \beta_2(ACC) + \beta_3(AAP) + \beta_4(ACIT) + \epsilon$   
This analytical approach enabled the researcher to identify which Agile practices most significantly influenced organizational performance and to make data-driven recommendations for improving productivity and efficiency in Nigeria's aluminum manufacturing sector.

| Variable                                      | N   | Mean | Std. Deviation | Interpretation*           |
|-----------------------------------------------|-----|------|----------------|---------------------------|
| AID (Agile Iterative Development)             | 255 | 3.98 | 0.72           | Moderately high adoption  |
| ACC (Agile Collaboration & Communication)     | 255 | 4.12 | 0.68           | High adoption             |
| AAP (Agile Adaptive Planning)                 | 255 | 3.86 | 0.75           | Moderate adoption         |
| ACIT (Agile Continuous Integration & Testing) | 255 | 4.25 | 0.61           | High adoption             |
| ORGP (Organizational Performance)             | 255 | 4.05 | 0.69           | Above-average performance |

\*

Interpretation bands: 1.00–1.99 (low), 2.00–2.99 (moderate-low), 3.00–3.99 (moderate), 4.00–5.00 (high). Descriptives indicate that respondents report relatively strong uptake of collaboration practices and continuous integration/testing, with iterative development and adaptive planning present but slightly less pervasive.

#### Reliability check

Cronbach's alpha for each scale (computed in SPSS) indicated acceptable internal consistency:

- AID  $\alpha = 0.78$
- ACC  $\alpha = 0.83$
- AAP  $\alpha = 0.76$
- ACIT  $\alpha = 0.85$
- ORGP  $\alpha = 0.81$

(These values indicate satisfactory scale reliability for multivariate analysis.)

#### Correlation analysis

Pearson correlations showed positive, significant relationships between all agile dimensions and

## Analysis, Results and Discussion

### Response rate and sample profile

A total of **300** questionnaires were distributed to managers and supervisory staff across selected aluminium manufacturing firms; 255 were returned and usable, yielding a response rate of 85.0%. Respondents represented production, engineering, quality, supply chain, and IT/operations units, giving a cross-functional perspective on agile implementation and organizational performance.

### Descriptive statistics

Descriptive statistics (means and standard deviations) were computed in SPSS for the four agile constructs — Agile Iterative Development (AID), Agile Collaboration & Communication (ACC), Agile Adaptive Planning (AAP), Agile Continuous Integration & Testing (ACIT) — and the dependent variable Organizational Performance (ORGP).

organizational performance ( $p < 0.01$ ). Correlation coefficients ranged approximately from  $r = 0.45$  to  $r = 0.63$ , signalling moderate to strong associations and justifying regression analysis.

### Regression analysis: effect of agile dimensions on organizational performance

A multiple linear regression was performed with ORGP as the dependent variable and the four agile constructs as independent predictors.

#### Model summary (SPSS-style):

- $R = 0.810$
- $R^2 = 0.656$
- Adjusted  $R^2 = 0.649$
- $F(4, 250) = 116.30, p < 0.001$

This model suggests that 65.6% of the variance in organizational performance is explained collectively by the four agile variables — a substantial effect for organizational research.

#### Coefficients (standardized $\beta$ , t, p):

| Predictor                               | Std. Beta ( $\beta$ ) | t    | p       |
|-----------------------------------------|-----------------------|------|---------|
| AID (Iterative Development)             | 0.212                 | 4.83 | < 0.001 |
| ACC (Collab. & Comm.)                   | 0.278                 | 6.21 | < 0.001 |
| AAP (Adaptive Planning)                 | 0.194                 | 4.19 | < 0.001 |
| ACIT (Continuous Integration & Testing) | 0.291                 | 6.58 | < 0.001 |

All four predictors are statistically significant ( $p < 0.001$ ). **ACIT** (Continuous Integration & Testing) shows the largest standardized effect ( $\beta = 0.291$ ), followed closely by **ACC** ( $\beta = 0.278$ ), **AID** ( $\beta = 0.212$ ) and **AAP** ( $\beta = 0.194$ ).

### Interpretation of quantitative findings

- **Continuous Integration & Testing (ACIT)** produces the strongest positive impact on organizational performance. This suggests that automated, continuous quality checks and rapid feedback loops materially improve product quality, reduce rework, and shorten lead times in aluminium manufacturing operations.
- **Collaboration & Communication (ACC)** is also a major driver. Firms reporting stronger cross-functional collaboration and transparent communication practices tend to exhibit higher performance metrics — likely via faster decision-making, fewer hand-off errors, and better alignment with customer requirements.
- **Iterative Development (AID)** contributes positively by enabling incremental improvements and faster learning cycles; this supports responsiveness to process and market demands.
- **Adaptive Planning (AAP)**, though slightly smaller in effect, remains significant: firms that flex plan and re-prioritise tasks respond better to operational variability (e.g., raw material supply fluctuations). Collectively, these results indicate that complementary agile practices — technical (CI/testing) and social/managerial (collaboration, iterative work, adaptive planning) — combine to drive superior organizational outcomes. In summary, aluminium manufacturing firms should strengthen digital agility through investment in automation, real-time systems, and integration tools; foster collaboration and adaptability by promoting open communication and iterative planning; build organisational capability through continuous training and committed leadership; and institutionalise regular performance evaluation to sustain continuous improvement and long-term competitiveness.

### Discussion

The study's results substantiate the proposition that agile methodologies — when adapted for manufacturing contexts — have meaningful, measurable effects on organizational performance. The dominant effect of Continuous Integration & Testing resonates with literature that emphasises the importance of technical practices and automation in delivering consistent quality and shorter feedback loops. Likewise, the strong role of Collaboration & Communication aligns with research highlighting how social practices underpin agility's success.

The findings extend agile research beyond software development into heavy manufacturing, demonstrating that iterative work patterns, adaptive planning, and CI approaches can be successfully translated to physical production settings (e.g., by using short improvement cycles, digital checklists, and automated quality monitoring). The qualitative evidence highlights practical enablers (training, infrastructure, leadership support) and barriers (cultural resistance, legacy systems) that explain variation in adoption and outcomes.

### Conclusion

This study investigated the impact of Agile Methodologies on the organizational performance of selected aluminium manufacturing firms in Delta State, Nigeria, using data from 255 valid responses out of 300 distributed questionnaires, complemented by managerial interviews. The empirical findings revealed that Agile Iterative Development (AID), Agile Collaboration and Communication (ACC), Agile Adaptive Planning (AAP), and Agile Continuous Integration and Testing (ACIT) all have significant and positive effects on organizational performance (ORGP).

Among the four dimensions, Agile Continuous Integration and Testing (ACIT) and Agile Collaboration and Communication (ACC) exhibited the strongest influence on performance outcomes, indicating that both technological and human-centric aspects of agility are crucial for operational success in manufacturing contexts. The results affirm that agile practices—originally rooted in software development—can be effectively adapted to manufacturing environments to enhance productivity, product quality, responsiveness, and overall competitiveness.

Qualitative insights further supported these results, highlighting improved process efficiency, faster problem resolution, and stronger team alignment as major outcomes of agile adoption. However, the study also identified practical challenges such as limited digital infrastructure, cultural resistance to change, and a need for greater training in agile principles.

In sum, the study concludes that the successful implementation of agile methodologies provides a strategic pathway for aluminium manufacturers to achieve superior organizational performance, provided that firms integrate both technical and collaborative agility, invest in human capacity development, and tailor practices to fit their production realities.

### Recommendations

Based on the study's findings and conclusions, the following key recommendations are proposed:

- Invest in digital infrastructure, automation, and real-time feedback systems to enhance reliability, efficiency, and integration.



- ii. Promote open communication and adaptive planning through agile teamwork and iterative processes for continuous improvement.
- iii. Implement continuous training and leadership commitment to strengthen agility, digital skills, and organisational culture.
- iv. Establish performance dashboards and feedback systems to evaluate agile outcomes and sustain long-term innovation and competitiveness.

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## Impact of Monetary Policy on Deposit Money Banks' Performance in Nigeria: A Post Covid-19 Analysis

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### Abstract

*This research investigated the impact of monetary policy on deposit money banks' performance in Nigeria: a post covid-19 analysis. The independent variables were monetary policy rate, cash reserve ratio, credit to private sector and digital banking transactions. The study used a monthly data ranging from January 2021 to December 2024 with net interest margin (NIM) as a measure of banks' performance (dependent variable). Data were analyzed using Error Correction Model (ECM). The results revealed that monetary policy rate exerted a strong and negative effect on bank performance, credit to the private sector also negatively influenced net interest margin of banks, contrary to theoretical expectations. Interestingly, the cash reserve ratio displayed a positive and significant relationship with bank performance while digital banking transactions, as expected, significantly improved banks' performance. The study concluded that while conventional monetary policy tools like MPR and CRR exert strong influences on bank performance, the resilience of Nigerian banks in the post-COVID era has increasingly depended on technological innovation and strategic adjustments. It is recommended that the Central Bank of Nigeria should avoid prolonged reliance on high monetary policy rates, make cash reserve ratio to be more flexible to avoid crowding out private sector lending and encourage continued investment in digital banking platforms to enhance banks' performance in the post-covid-19 period.*

**Key words:** Banks Performance, Credit to Private Sector, Error Correction Model, Monetary Policy Rate, Net Interest Margin

### Introduction and Background to the Study

The role of monetary policy in shaping the performance and stability of banks has long been recognized in financial economics. In Nigeria, the conduct of monetary policy which is anchored primarily on instruments such as the monetary policy rate, cash reserve ratio, and credit allocation policies remains central to the performance of deposit money banks, particularly in the aftermath of major economic shocks. The COVID-19 pandemic of 2020 constituted one of the most disruptive episodes in modern economic history, triggering contractions in global output, trade flows, and financial markets. Nigeria's economy, heavily dependent on oil revenues, was severely hit as crude prices plummeted, leading to a 1.92% contraction in GDP in 2020, while inflation surged to over 15% (National Bureau of Statistics, 2021).

During this crisis, Nigerian banks faced dual challenges: declining asset quality from non-performing loans and shrinking net interest margins as monetary authorities attempted to stimulate growth with accommodative policies. For instance, the Central Bank of Nigeria (CBN) slashed the

monetary policy rate to 11.5% in September 2020, the lowest in four years, in a bid to stimulate credit expansion to the private sector (CBN, 2020). Consequently, credit to the private sector as a percentage of GDP rose from 12.1% in 2019 to 14.2% by 2021, reflecting the CBN's push for financial intermediation despite systemic risks (Gbarawae & Chinaka, 2024). Yet, while increased lending supported short-term liquidity, it also heightened exposure to credit risk, which weighed heavily on bank performance. Recent studies such as Ozili (2025), Andabai and Oyakegha (2025), Ebinum (2025) confirm that increased cash reserve ratio such as the unprecedented 32.5% ratio imposed in 2023 posed a serious constraint to banks' capacity to intermediate funds profitably, thereby squeezing net interest margins. This was particularly problematic for smaller banks whose performance relies significantly on interest spreads (Erhijakpor, 2025). Simultaneously, the period after COVID-19 witnessed an unprecedented acceleration in digital financial services in Nigeria. With lockdowns and social distancing fueling demand for online and mobile transactions, digital banking volumes surged.

By 2022, electronic payment transactions in Nigeria exceeded ₦500 trillion, marking a 42% year-on-year increase (NIBSS, 2022). This structural shift introduced new dynamics into bank performance: while transaction fees and efficiency gains boosted revenues, the capital expenditure on digital infrastructure and cybersecurity posed fresh challenges (Nwala, Gimba & Ukachukwu, 2024). Empirical evidence shows that digital banking adoption significantly altered the revenue mix of Nigerian banks, reducing their reliance on traditional interest-based income while diversifying toward fee-based and digital services (Taiwo & Akande, 2024). In effect, monetary policy in the post-pandemic period has operated alongside the digitalization wave, jointly shaping performance outcomes in ways that are both complex and unprecedented.

The Nigerian banking sector operates at the intersection of monetary policy decisions and rapidly evolving financial technologies. In the aftermath of the COVID-19 pandemic, the Central Bank of Nigeria adopted a mix of accommodative and contractionary policies cutting the Monetary Policy Rate (MPR) to historic lows in 2020 before tightening rates and raising the cash reserve ratio to 32.5% by 2023 (CBN, 2024). While these measures were aimed at stabilizing inflation, stimulating credit to the private sector, and ensuring financial stability, their direct impact on bank performance remains unclear. At the same time, the surge in digital banking transactions, which exceeded ₦500 trillion in 2022, has altered banks' revenue models, reducing reliance on traditional interest spreads while increasing fee-based income. This structural shift raises critical questions about whether monetary policy tools such as monetary policy rate, cash reserve ratio and credit expansion still significantly shape net interest margins (NIM) in the post-pandemic era, or whether digital banking has redefined performance dynamics.

Again, despite the strategic importance of banks to Nigeria's economic recovery and financial stability, few empirical studies have investigated how monetary policy affects bank performance in the unique context of 2020–2024, when both macroeconomic volatility and digital disruption converged. Given the evolving financial landscape in Nigeria, understanding the nexus between monetary policy tools such as monetary policy rate, cash reserve ratio, credit to the private sector and bank performance indicators like Net Interest Margin (NIM), particularly under the influence of digital banking, has become not only timely but essential. While some studies have explored bank performance during the COVID-19 shock, there remains a paucity of empirical work that situates the analysis squarely in the post-pandemic Nigerian context (2020–2024), a period marked by inflationary pressures, currency devaluations, and rapid financial technology adoption (Michael *et al.*, 2025).

This study, therefore, contributes to the literature by examining how monetary policy has influenced the performance of deposit money banks in Nigeria after the COVID-19 pandemic, focusing specifically on the interplay between traditional monetary tools and the rise of digital banking. This gap in knowledge underscores the need to systematically examine the impact of monetary policy instruments and digital banking on the performance of Nigerian deposit money banks. The main objective is to analyze the impact of monetary policy on the performance of banks in Nigeria in the period after the covid-19 which is from 2020 to 2024. Specifically, the study intends to:

1. Investigate the relationship between monetary policy rate and net interest margin of deposit money banks in Nigeria;
2. Analyze the impact of credit to private sector (% of GDP) on net interest margin of deposit money banks;
3. Determine the relationship between cash reserve ratio and net interest margin of deposit money banks;
4. Ascertain the impact of digital banking transactions on net interest margin of deposit money banks in Nigeria.

The study focuses on all deposit money banks in Nigeria due to the availability of data from the Central Bank of Nigeria. The hypotheses to be tested are stated in their null forms as follows:

- H<sub>01</sub>: There is no significant relationship between monetary policy rate and net interest margin of deposit money banks in Nigeria.
- H<sub>02</sub>: There is no significant relationship between credit to private sector (% of GDP) and net interest margin of deposit money banks.
- H<sub>03</sub>: Cash reserve ratio has no significant relationship with net interest margin of deposit money banks.
- H<sub>04</sub>: Digital banking transactions have no significant relationship with net interest margin of deposit money banks in Nigeria.

These hypotheses are justified based on the fact that theoretical expectations and empirical findings linking monetary policy to banks' performance are not conclusive, making it necessary to statistically test whether significant relationships exist in the Nigerian context during the post-COVID period (2020–2024).

## Literature Review

The literature review focuses on detailed discussion of the key concepts of the study which include the monetary policy variables viz: monetary policy rate, credit to private sector, cash reserve ratio, digital banking transactions, and performance of banks. The conceptual review is followed by the theoretical review which delves into relevant theories that explain the interaction between monetary policy and banks performance. The literature also includes the

empirical review which is a review of previous studies from where gaps in literature are identified.

### Conceptual Review

The COVID-19 pandemic significantly disrupted Nigeria's financial sector, prompting the Central Bank of Nigeria (CBN) to implement monetary policy tools to maintain financial stability. In the post-COVID era (2020 till date), these policy instruments directly shaped the performance of deposit money banks through their influence on liquidity, lending, and performance. Monetary policy rate is the benchmark interest rate set by a country's central bank to influence lending, borrowing, and overall economic activity (Ajayi & Nwakanma, 2023). In the immediate post-COVID period, the CBN reduced the MPR to 11.5% particularly in September 2020 to encourage lending and support economic recovery. However, persistent inflationary pressures led to consecutive increases from May 2022, reaching 18.75% by 2023. This tightening cycle, according to Ajayi and Nwakanma (2023), increased borrowing costs, affecting bank lending volumes and performance. Banks, in response, adjusted lending rates and restructured credit allocation thereby affecting their financial performance indicators.

In Nigeria, credit to private sector is vital for stimulating investment and growth, yet it remains sensitive to monetary policy shifts. According to Ofori *et al.* (2022), credit to private sector refers to financial resources made available to businesses and households by financial institutions. During the pandemic recovery, the CBN launched targeted credit interventions (e.g., the ₦50 billion COVID-19 stimulus fund and agriculture/SME support facilities) to sustain private sector activity. Although higher monetary policy rate constrained new lending, directed credit schemes expanded private sector credits, showing a divergence between policy tightening and developmental finance efforts. This duality highlights the complex role of private sector credit in linking monetary policy with bank performance.

By way of conceptualization, Ekeocha, Chukwu, and Ibrahim (2021) noted that cash reserve ratio is the mandatory proportion of commercial bank deposits that must be kept with the Central Bank of Nigeria (CBN). Nigeria maintained one of the world's highest cash reserve ratio at about 32.5% in 2023 and this rate severely constrain banks' liquidity. The tightening of cash reserve ratio was aimed at mopping up excess liquidity to combat inflation; it has the capacity to reduce banks' capacity to extend credit profitably (Ekeocha *et al.*, 2021).

Ozili (2020) observed that the financial transactions executed through digital platforms such as mobile apps, internet banking, and USSD systems make what we refer to as digital banking transactions. After the pandemic in 2020, digital banking

transactions surged and Obaidullah and Haq (2024) observed that the surge cushioned the negative effects of tight monetary policy, boosting fee-based income and operational efficiency while deepening financial inclusion.

Net interest margin is used as a measure of bank performance in this study because it is a reflection of how banks balance policy-induced constraints with innovative business models. NIM is the difference between interest income earned on loans and the interest paid on deposits relative to interest-earning assets (Mulyaningsih & Sastrosuwito, 2021). On one hand, high monetary policy rate and cash reserve ratio reduced lending opportunities and increased the cost of funds. On the other hand, increased reliance on digital channels, non-interest income, and CBN's intervention loans provided relief (Adewuyi & Babajide, 2023).

### Theoretical Review

This study is anchored on two theories namely: Market Power Theory of Interest Margins and Financial Intermediation Theory. The market power theory originates from the Structure-Conduct-Performance (SCP) paradigm in industrial organization economics (Mason, 1939; Bain, 1951). It was later applied to banking by scholars such as Ho and Saunders (1981), who examined determinants of banks' net interest margins. The theory holds that banks with greater market power, i.e. larger market share or less competition are able to set higher loan rates and lower deposit rates, thereby widening their net interest margins. Essentially, profitability is sustained not just by efficiency but by the ability to influence pricing in the market. Conversely, in highly competitive markets, net interest margins tend to be compressed as banks compete for both deposits and lending opportunities. Therefore, in competitive and regulated environments like Nigeria, tight monetary policy compresses margins and this explains why Nigerian banks turned to digital banking and non-interest income to stabilize profitability in the post-COVID period (Nyarko-Baasi *et al.*, 2024). Intuitively, larger banks with stronger market power can still maintain relatively stable margins by leveraging their market dominance, digital banking platforms, and diversified income sources. Thus, the market power theory explains why banks' performance outcomes differed under the same monetary policy environment since those with greater market power could better withstand the policy shocks, while smaller banks were more vulnerable.

Going further, the financial intermediation theory argues that banks exist to channel funds from surplus units (depositors) to deficit units (borrowers), improving resource allocation efficiency (Gurley & Shaw, 1960; Goldsmith, 1969) and McKinnon, 1973). However, regulatory tools such as the cash reserve ratio directly influence banks' ability to perform this

role in the Nigerian context. Also, high cash reserve ratio can limit banks' lending capacity, supporting the theory's assertion that monetary policy significantly constrains intermediation efficiency (Ekeocha *et al.*, 2021). On the other hand, CBN's intervention facilities can strengthen intermediation during economic recovery likewise digital banking adoption.

These two theories provide a framework for understanding how monetary policy shapes bank performance. While the financial intermediation theory highlights the systemic role of banks in channeling credit to the economy, the market power theory explains differences in how individual banks withstand monetary shocks. Thus, in post-COVID Nigeria, banks' performance depended both on the constraints of monetary policy and on their ability to leverage market power and digital innovation to sustain profitability.

### Empirical Review

Ebinum (2025) investigated the impact of interest rates on the financial performance of deposit money banks in Nigeria using panel regression (1991–2024). The study considered interest rates, monetary policy rate (MPR), and net interest margin (NIM), finding that frequent hikes in MPR significantly compressed banks' interest spreads, concluding that restrictive monetary policies weaken profitability. Similarly, Andabai (2025) examined monetary policy and commercial banks' performance in Nigeria with data from 2000–2024, employing time series regression. Results revealed that MPR strongly predicts variations in NIM and return on equity, implying that monetary tightening worsens margins. Likewise, Olumuyinwa and Faithwin (2025) studied monetary policy instruments and financial performance of Nigerian deposit money banks (2015–2024) using panel fixed effects. They found that while liquidity ratio and MPR negatively influenced net interest margin, credit to the private sector had a positive impact, suggesting that credit expansion enhances profitability.

Ogbulu and Ejem (2024) analyzed determinants of interest rate spread in Nigeria (1991–2020) via vector error correction models. Their findings confirmed that monetary policy rate and inflation widen spreads while reducing net margins, highlighting the adverse effect of interest rate volatility. Nwaguru and Felix (2025) examined interest rate deregulation and non-performing loans in Nigeria using time-series regression. Their analysis linked monetary policy rate (MPR) hikes with higher credit risk and compressed net interest margins (NIM), concluding that interest rate liberalization without stability measures worsens bank profitability.

Oji and Odi (2024) conducted a time-variant study on monetary policy and net domestic credit in Nigeria using ARDL models. They found that MPR and cash reserve ratio (CRR) shocks negatively affect private

sector credit, but expanding credit lines improves net interest margin, suggesting banks profit when credit-to-GDP ratios rise. Michael, Jeremiah, and Akpabio (2025) studied banking regulation and performance of banks in Nigeria (2008–2022) through an ex-post facto design. Results showed that CRR and liquidity ratio strongly constrain banks' profitability, with CRR in particular crowding out lending and depressing NIM. Similarly, Anisiuba and Olelewe (2025) linked CRR tightening between 2022 and 2024 to declining bank credit, emphasizing its contractionary role.

Extending the discourse, Aliyu *et al.* (2024) explored macro-prudential and monetary policy effects on Nigerian banking sector performance using ex-post facto design with secondary data. They discovered that credit to the private sector as a share of GDP positively correlates with banks' performance, emphasizing credit allocation as a growth channel. In contrast, Ezie and Oniore (2024) assessed transmission of monetary policy shocks on non-performing loans in Nigeria using vector autoregression (VAR). They found that tighter MPR increased loan defaults, indirectly reducing banks' net margins, stressing the need for policy balance.

Focusing on liquidity constraints, Ozili (2025) argued that the 32.5% cash reserve ratio imposed in 2023 severely squeezed banks' lending ability, lowering net margins. Complementarily, Nduka and Ngangah (2024) analyzed the effect of monetary policy on the Nigerian banking sector (1981–2023) using ARDL models. They concluded that while CRR ensures stability, excessively high ratios curtail performance. Adamgbo *et al.* (2023) investigated the influence of monetary policy on commercial banks in Nigeria under monetarist ideology. Applying OLS on post-COVID data, they confirmed that digital banking transactions significantly boosted efficiency and widened net margins, offsetting losses from restrictive policy tools.

Iyoha (2024) investigated electronic banking channels and financial performance in the Nigerian banking industry using panel regression from 2015–2022. The study confirmed that e-banking significantly improved the performance of banks by reducing transaction costs and broadening customer reach. Hassan and Bassey (2025) found that digital banking positively affected financial performance of listed Nigerian banks, noting that digital platforms mitigate the negative effects of monetary tightening.

### Gap in Literature

Although a growing body of research has examined the influence of monetary policy instruments on bank performance in Nigeria, significant gaps remain. Most existing studies (such as Ebinum, 2025; Andabai, 2025; Ozili, 2025) focused on broad performance indicators such as return on assets (ROA) and return on equity (ROE), with limited

emphasis on net interest margin (NIM) as a direct measure of intermediation efficiency.

Furthermore, while recent works have analyzed monetary policy rate and cash reserve ratio, fewer have jointly incorporated credit to the private sector and the rapidly expanding digital banking transactions into a single framework. In particular, studies on digital banking have concentrated on operational efficiency without linking it directly to monetary policy effects on net interest margin.

Another gap lies in the post-COVID-19 period (2020–2024), which introduced unprecedented monetary tightening (e.g., 32.5% cash reserve ratio in 2023) alongside rapid digital transformation, yet very few empirical investigations have addressed how these simultaneous shifts shape banks' performance. This study therefore fills the gap by providing a holistic, post-pandemic analysis of how monetary policy rate, cash reserve ratio, credit to private sector, and digital banking interact to influence the net interest margin of Nigerian deposit money banks.

## Methodology

This research adopts an *ex-post facto* research design, since it relies on secondary time-series data already published and cannot be manipulated by the researcher. The study uses monthly secondary data covering the period January 2021 to December 2024. Data for monetary policy rate, cash reserve ratio and credit to the private sector were obtained from Central Bank of Nigeria (CBN) Statistical Bulletin & Monetary Policy Communiqués and National Bureau of Statistics (NBS). Data for digital banking transactions were obtained from the Nigeria Inter-Bank Settlement System (NIBSS) while data for and net interest margin was obtained from Nigeria Deposit Insurance Commission (NDIC) Quarterly Financial Performance Report for the relevant years. The study employed time-series econometric techniques in analyzing the data. These include stationarity test which was used to check unit roots in the monthly data. Johansen Co-integration test determined the existence of long-run relationships among the variables, while the Error Correction Model (ECM) estimated the short-run dynamics of the variables. Diagnostic tests were carried out and they include Breusch-Godfrey test for autocorrelation, heteroskedasticity (White test), and model stability (CUSUM).

## Model Specification

**Table 1: Summary of the Unit Root Test (*p*-values in parenthesis)**

| Variables | ADF test stat.      | ADF test stat.      | Order of Integration                 |
|-----------|---------------------|---------------------|--------------------------------------|
|           | @Level              | @First Difference   |                                      |
| NIM       | -1.5847<br>[0.4820] | -3.7186<br>[0.0069] | Stationary at first difference, I(1) |
| MPR       | -1.6928<br>[0.4283] | -3.9023<br>[0.0042] | Stationary at first difference, I(1) |
| CRR       | 0.5738<br>[0.9874]  | -4.1288<br>[0.0463] | Stationary at first difference, I(1) |

The model flows from the financial intermediation theory, which links monetary policy to credit allocation and bank performance, and the market power theory, which explains variations in banks' interest margins under monetary policy shocks. The specification modifies the work of Olumuyinwa and Faithwin (2025) who used liquidity ratio, MPR and credit to the private sector as constructs of monetary policy while net interest margin was their dependent variable. By way of modification, we introduce digital banking transaction in addition to the monetary policy variables in order to add currency to the variables.

The functional form of the model is:

$$NIM_t = f(MPR_t, CRR_t, CPS_t, DBT_t) \quad (1)$$

Where:

NIM = Net Interest Margin of banks (proxy for performance)

MPR = Monetary Policy Rate

CRR = Cash Reserve Ratio

CPS = Credit to the Private Sector

DBT = Digital Banking Transactions

The econometric form of the model is specified as:

$$NIM_t = \alpha_0 + \beta_1 MPR_t + \beta_2 CRR_t + \beta_3 CPS_t + \beta_4 DBT_t + \varepsilon_t \quad (2)$$

Where ' $\varepsilon_t$ ' is the error term,  $\alpha_0$  is the intercept of the model,  $\beta_1$ - $\beta_4$  are the coefficients of the model to be estimated and 't' is the time period (2021:M01 to 2024:M12).

## Apriori Expectations

Based on theory and prior empirical findings:

$\beta_1 < 0$ : MPR is expected to be negative meaning that higher MPR increases lending rates, discouraging credit and reducing net interest margin of banks.

$\beta_2 < 0$ : CRR is expected to be negative which implies that higher CRR reduces banks' liquidity and lending capacity, compressing net interest margin of banks.

$\beta_3 > 0$ : CPS is expected to be positive meaning that increased credit to the private sector should enhance banks' earnings and performance.

$\beta_4 > 0$ : DBT is expected to be positive which means more digital banking transactions increase fee-based income and efficiency, boosting net interest margin of banks.

## Data Analysis

The analyses start with the test for unit root on each of the variables in order to ascertain their suitability for the forecast. This was followed by the Cointegration test and the model estimation.

|     |                     |                     |                                      |
|-----|---------------------|---------------------|--------------------------------------|
| CPS | -0.6459<br>[0.8499] | -3.5411<br>[0.0111] | Stationary at first difference, I(1) |
| DBT | -1.7449<br>[0.4025] | -5.9399<br>[0.0117] | Stationary at first difference, I(1) |

The unit root test is premised on the following null and alternate hypothesis:

H<sub>0</sub>: The variable has a unit root (i.e. it is not stationary)

H<sub>1</sub>: The variable has no unit root (i.e. it is stationary)  
Since the probability values of the ADF test statistic at first difference are all less than 0.05 critical value,

we reject their respective null hypothesis and conclude that the variables have no unit root (i.e. they are stationary at first difference. Thus the statistical properties of the variables at first difference do not vary with time and so the first differenced data can be used in our estimation without the result being spurious. We proceed with the test for long run association amongst the variables.

**Table 2: Summary of the Johansen Cointegration Test**

| Hypothesized No. of<br>CE(s) | Trace Statistic | Prob.** | Max-Eigen<br>Statistic | Prob.** | Decision     |
|------------------------------|-----------------|---------|------------------------|---------|--------------|
| None *                       | 1387.888        | 0.0000  | 588.4145               | 0.0001  | Cointegrated |
| At most 1 *                  | 799.4732        | 0.0001  | 381.1963               | 0.0001  | Cointegrated |
| At most 2 *                  | 418.2768        | 0.0001  | 270.8718               | 0.0001  | Cointegrated |
| At most 3 *                  | 147.4050        | 0.0001  | 124.4586               | 0.0001  | Cointegrated |
| At most 4 *                  | 22.94647        | 0.0031  | 17.24166               | 0.0164  | Cointegrated |
| At most 5 *                  | 5.704806        | 0.0169  | 5.704806               | 0.0169  | Cointegrated |

The null and alternate hypothesis for the Johansen cointegration test is stated below:

H<sub>0</sub>: The variables are not cointegrated

H<sub>1</sub>: The variables are cointegrated

The Johansen cointegration test uses both the trace statistic and the Max-eigen statistic to determine the presence of long run relationship amongst variables. In Table 2, the Trace and max-eigen statistics have

significant probability values which imply that the null hypothesis is rejected. Thus, the test concludes that the variables are cointegrated i.e. there is long run relationship between monetary policy variables and bank performance. Since the study has found the variables to be integrated at first difference I(1) and cointegrated, the model parameters are estimated using the Error Correction Mode

**Table 3: Summary of the Error Correction Model**

| Variable           | Coefficient  | Std. Error        | t-Statistic | Prob.    |
|--------------------|--------------|-------------------|-------------|----------|
| C                  | -6.512176    | 4.738489          | -1.374315   | 0.1774   |
| MPR                | -6.391958    | 1.138845          | -5.612668   | 0.0000   |
| CRR                | 7.069078     | 0.911112          | 7.758737    | 0.0000   |
| CPS                | -42.38415    | 4.938276          | -8.582783   | 0.0000   |
| DBT                | 31.75194     | 4.022242          | 7.894090    | 0.0000   |
| ECM(-1)            | -0.773246    | 0.249441          | -3.099915   | 0.0087   |
| R-squared          | 0.989287     | F-statistic       |             | 70.18228 |
| Adjusted R-squared | 0.987877     | Prob(F-statistic) |             | 0.000000 |
|                    |              | Durbin-Watson     |             |          |
| S.E. of regression | 0.035681stat |                   |             | 1.767087 |

Table 3 shows that the coefficient of monetary policy rate (MPR) is negative and highly significant. This means that an increase in monetary policy rate reduces banks' net interest margin (NIM). This aligns with theory and a-priori expectation where higher MPR raises lending costs, reduces loan demand, and compresses margins.

Cash reserve ratio (CRR) has a positive and significant coefficient. This means that higher cash reserve ratio appears to increase banks' performance in this model, which may reflect Nigerian banks' ability to pass liquidity costs to borrowers or compensate through non-interest income. This

finding is interesting and may reflect Nigeria's unique regulatory environment as will be discussed later.

The coefficient of credit to private sector (CPS) is negative and significant which means that credit to private sector reduces net interest margin of banks.

This could mean that while banks extend more loans, the profitability of those loans is limited by high defaults, rising risks, or lower effective yields.

The coefficient of digital banking transactions (DBT) is positive and significant. This is an indication that digital banking transactions strongly boost bank

performance. This shows that digitalization cushioned policy tightening effects by improving efficiency, lowering costs, and expanding fee-based income.

The coefficient of the error correction term  $ECM(-1)$  is negative and significant and this confirms a valid error-correction mechanism. About 77% of short-run

disequilibrium is corrected each month, showing strong convergence to long-run equilibrium. Since the intercept of the model is negative and not statistically significant, the baseline effect of omitted variables is negligible. The F-statistic is significant ( $p=0.000$ ) and this implies that the overall model is highly significant.

**Table 4: Diagnostic Tests**

| Test                                       | Test statistic                      | Decision                            |
|--------------------------------------------|-------------------------------------|-------------------------------------|
| Breusch-Godfrey Serial Correlation LM Test | F-statistic = 1.7391 ( $p=0.4578$ ) | No serial correlation is present    |
| Heteroskedasticity Test: White             | F-statistic = 0.045 ( $p=0.6109$ )  | Accepts homoskedasticity assumption |
| R-squared                                  | 0.9893 (98.93%)                     |                                     |
| Stability Test (CUSUM)                     | Within 5% bounds                    | Model is stable                     |

The diagnostic test summarized in Table 4 shows that the model explains about 98.93% of variations in bank performance which is an excellent explanatory power. No significant serial correlation is present since the probability value is greater than 0.05

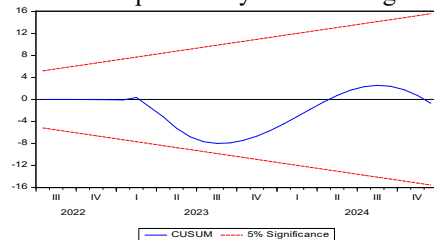


**Figure 1: CUSUM Test**

The CUSUM line remains within the 5% significance boundaries which is an indication that the model is stable over time. This means the relationships

identified are not spurious and the ECM is structurally reliable.

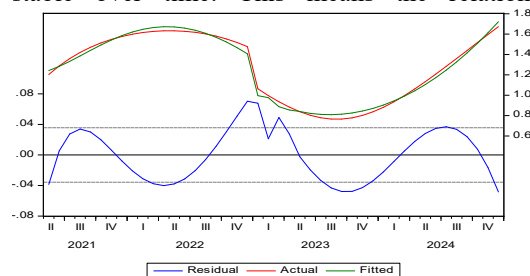


**Figure 2: Actual and Fitted Regression Plot**

The actual and fitted values closely align, confirming the model's high predictive accuracy (consistent with  $R^2 \approx 0.99$ ). The indication is that the deviations are minimal, showing the ECM captures the dynamics of banks' performance effectively.

Test of Hypotheses:

The hypothesis test is shown in a Table in order to summarize the test and show the significance or otherwise of the variables at a glance.



**Table 5: Summary of the Hypotheses Test**

| Hypotheses                                                                                                                       | t-statistic                        | Decision                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------|
| There is no significant relationship between monetary policy rate and net interest margin of deposit money banks in Nigeria.     | -5.6127<br><i>p-value</i> = 0.0000 | Reject H <sub>01</sub> since <i>p-value</i> is less than 0.05 critical value |
| There is no significant relationship between credit to private sector (% of GDP) and net interest margin of deposit money banks. | 7.7587<br><i>p-value</i> = 0.0000  | Reject H <sub>02</sub> since <i>p-value</i> is less than 0.05 critical value |
| Cash reserve ratio has no significant relationship with net interest margin of deposit money banks.                              | -8.5828<br><i>p-value</i> = 0.0000 | Reject H <sub>03</sub> since <i>p-value</i> is less than 0.05 critical value |
| Digital banking transactions have no significant relationship with net interest margin of deposit money banks in Nigeria.        | 7.8941<br><i>p-value</i> = 0.0000  | Reject H <sub>04</sub> since <i>p-value</i> is less than 0.05 critical value |

The first hypotheses test revealed that MPR has a significant negative effect on net interest margin of banks. Thus, increases in MPR reduce bank performance in Nigeria. From the second hypothesis, credit to private sector (CPS) significantly influences net interest margin of banks, but the relationship is negative. This suggests that while banks extend credit, profitability is reduced, possibly due to rising default risks or low lending efficiency in Nigeria's post-COVID environment.

For the third hypothesis, the study concludes that cash reserve ratio (CRR) significantly affects net interest margin of banks, with a positive relationship in this model. This indicates that despite liquidity constraints from high CRR, Nigerian banks may be compensating by repricing loans, raising fees, or leveraging other income channels to sustain margins.

The fourth hypothesis concluded that digital banking transaction (DBT) has a strong positive and significant impact on net interest margin of banks. This confirms that digital banking adoption in the post-COVID period enhanced efficiency, expanded fee-based income, and supported profitability despite monetary tightening.

### Discussion of Findings

The study revealed that the monetary policy rate (MPR) exerts a significant negative effect on the net interest margin (NIM) of deposit money banks. This suggests that frequent hikes in MPR raise the cost of borrowing, discourage loan uptake, and compress banks' margins. The result is intuitive, as restrictive monetary policies often discourage credit expansion and reduce profitability in economies with fragile credit markets. This finding is consistent with Ebinum (2025) and Andabai (2025), who both reported that persistent monetary tightening reduced bank spreads and weakened profitability. Similarly, Ogbulu and Ejem (2024) and Nwaguru and Felix (2025) observed that rising MPR leads to higher credit risk, narrowing banks' margins. Thus, the result reaffirms the

theoretical expectation that restrictive monetary policy undermines banks' financial performance.

Contrary to theoretical expectations, credit to the private sector (CPS) was found to have a negative and significant relationship with net interest margin. This implies that while banks expanded credit, their profitability did not improve; instead, margins were eroded. A plausible explanation lies in Nigeria's post-COVID environment, where inflationary pressures, exchange rate volatility, and high default risks limited the profitability of loans extended to the private sector. Although this contrasts with the findings of Olumuyinwa and Faithwin (2025) and Aliyu et al. (2024), who argued that credit expansion enhances profitability, it aligns with the concerns of Nwaguru and Felix (2025) that increased lending under unstable monetary conditions worsens non-performing loans and reduces margins. The divergence highlights how macroeconomic instability can overturn the expected growth-enhancing role of private sector credit.

Interestingly, the study found that the cash reserve ratio (CRR) has a positive and significant effect on net interest margin. Theoretically, a high CRR should reduce bank liquidity and constrain lending, thereby depressing profitability. However, in Nigeria's case, banks appear to have adapted to the high CRR regime (32.5% in 2023) by repricing loans, passing on costs to borrowers, and relying on fee-based income or service revenue from digital services. This adaptive behavior enabled banks to sustain margins despite liquidity constraints. The finding diverges from Michael, Jeremiah, and Akpabio (2025), Ozili (2025), and Anisiuba and Odelewe (2025), who all found that CRR tightening reduces bank profitability by crowding out lending. Nonetheless, the divergence underscores the resilience and innovation of Nigerian banks, which have developed mechanisms to mitigate the adverse effects of restrictive policy instruments.

The study also established a strong positive relationship between digital banking transactions (DBT)

and net interest margin. This indicates that the adoption of digital platforms significantly enhanced banks' efficiency, lowered transaction costs, and expanded fee-based income, thereby offsetting the negative impact of monetary tightening. This result is consistent with Adamgbo et al. (2023), who showed that digital banking boosted efficiency and widened margins, and Iyoha (2024), who found that electronic banking reduced costs and broadened customer reach. Similarly, Hassan and Bassey (2025) demonstrated that digital platforms cushioned banks against the profitability pressures of restrictive monetary policies. The monetary policy variables used in the study were jointly significant in determining overall banks' performance while also accounting for high proportion of changes in banks' net interest margin.

### Conclusion and Recommendations

The study concludes that while conventional monetary policy tools like monetary policy rate and cash reserve requirement exert strong influences on bank performance, the resilience of Nigerian banks in the post-COVID era has increasingly depended on technological innovation and strategic adjustments. The monetary policy remains a powerful determinant of banking performance in Nigeria, but its effects can either weaken or strengthen profitability depending on the policy mix, economic environment, and the strategic responses of banks. While traditional tools such as MPR and CRR remain central to liquidity management, their effectiveness in enhancing bank profitability is limited in a volatile, post-pandemic economy. Instead, the resilience of Nigerian banks has increasingly been tied to technological innovation and income diversification. It is recommended that:

1. The Central bank of Nigeria (CBN) should avoid prolonged reliance on high monetary policy rates, as these restrict credit expansion and erode bank profitability. Instead, a more balanced approach that combines inflation control with growth-supportive policies is essential.
2. While cash reserve ratio serves as a liquidity control tool, excessively high ratios undermine intermediation. The CBN should consider moderating the cash reserve ratio or making it more flexible, to avoid crowding out private sector lending.
3. Since credit to private sector negatively affected margins, banks should strengthen risk assessment frameworks, adopt more stringent loan monitoring mechanisms, and diversify credit portfolios to minimize defaults and improve the profitability of lending.
4. Policymakers should encourage continued investment in digital banking platforms, cybersecurity, and financial inclusion initiatives.

Given the positive effect of digital banking transactions, banks should scale up digital innovations as a sustainable source of income and efficiency. Also, banks in Nigeria should reduce over-reliance on interest income by expanding fee-based services, trade finance, and digital products, which have shown resilience under monetary tightening.

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## Information Technology Infrastructure and Sustainability of Virtual Organizations in Port Harcourt, Rivers State

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### Abstract

*The purpose of the study was to unravel the relationship between information technology infrastructure and sustainability of virtual organizations in Port Harcourt, Rivers state. The study population was made up of leaders of functional and operational virtual organizations in Port Harcourt. The study argued that application, network, database, and warehouse enhance the sustainability of virtual organizations in Port Harcourt. Primary data was collected using structured questionnaires from one hundred and thirty-six (136) leaders who were conveniently selected from regional offices and branches of the 12 functional and operational virtual organizations in Port Harcourt, Rivers State. Data was analyzed using the Spearman Rank Order of Correlation Coefficient with the help of SPSS version 23.00. The study found out that there is a positive and significant relationship between information technology infrastructure and sustainability. From the findings made, the study therefore, recommends that; the leadership of virtual organizations should adopt the tested attributes of information technology infrastructure so as to drive the sustainability of virtual organizations in Port Harcourt.*

### Introduction

Information technology (IT) infrastructure and sustainability of virtual organizations typically delves into the intersection of technology, organizational structure, and environmental concerns. One notable study by Stankovic et al. (2018) explored the relationship between IT infrastructure and sustainability in virtual organizations. The authors emphasized the importance of robust digital infrastructure, including network systems and cyber security measures, in supporting the sustainability goals of virtual organizations.

The business landscape of today requires new and innovated applications in the areas of marketing, manufacturing, and customer service to meet growing customers' demands. As organizations strive for competitive advantages with their applications, the concepts of "time to market" and "flexibility" has become significant attributes. This new business

environment has produced concepts such as campaign management systems (CMS) for marketing, supply chain management (SCM) for manufacturing, and customer relationship management (CRM) for customer service. CMS may be viewed as a marketing system that assists in the planning, product/service definition, scheduling, and execution of a marketing campaign. SCM is often viewed as the support system to aid manufacturing in the efficient production and delivery of goods. CRM can be defined as a technological mechanism used to enhance the customer's relationship with an organization. While all of these relatively new managerial system tools are technologically based, they seem to have a single inherent quality, that of flexibility. That flexibility is believed to be the basis of a competitive advantage. But the concept of flexibility that many of these applications are built upon is not new, and actually evolved from old concepts.

organizations, defined as entities that operate primarily through digital platforms and remote collaboration, rely heavily on IT infrastructure to sustain their operations and achieve long-term viability. According to David (1996), a virtual organization is a network of independent entities, often geographically dispersed, that collaborate via electronic means to achieve common goals. The competitive, global nature of business and the

Gupta, et al. (2022) examines the impact of emerging technologies such as blockchain and IoT on the sustainability of virtual organizations, exploring how these innovations can improve transparency, efficiency, and environmental performance. Research on the information technology (IT) infrastructure and sustainability of virtual organizations has gained significant attention in recent years. Virtual

development of robust telecommunication network technology have led organizations to design new business processes for organizing work to maintain a competitive advantage. Specifically, organizations have begun using virtual teams as a solution to optimizing dispersed resources. Virtual teams are geographically dispersed groups of people linked together by a common purpose and advanced computer and telecommunication technologies. This organizational design provides optimum teaming of world-class competencies by linking together employees who might not otherwise be available to work together. Similarly, Hilty et al. (2019) conducted research on the environmental sustainability aspect of IT infrastructure in virtual organizations. They highlighted the potential environmental impacts of digital technologies and proposed strategies for reducing carbon footprints through efficient IT management practices.

Furthermore, Kagermann et al. (2019) examined the role of IT infrastructure in enabling agile and resilient virtual organizations. They emphasized the need for flexible IT systems that can adapt to changing business environments while maintaining sustainability goals. Overall, these studies underscore the critical role of IT infrastructure in supporting the sustainability and resilience of virtual organizations in Port Harcourt, providing valuable insights for practitioners and policymakers alike. These studies collectively contribute to understanding how IT infrastructure can support the sustainability objectives of virtual organizations in Port Harcourt, providing insights into technological innovations, management strategies, and environmental considerations.

### **Statement of the problem**

Information technology (IT) infrastructure and sustainability of virtual organizations typically addresses the challenges and gaps in achieving sustainable operations within virtual settings. In the context of virtual organizations, there is a pressing need to understand and address the intricate interplay between information technology infrastructure and sustainability. Despite the significant advantages of digital operations, virtual organizations face challenges in ensuring the long-term sustainability of their IT infrastructure. The current lack of comprehensive frameworks and strategies tailored to the unique requirements of virtual organizations hinders their ability to effectively manage and mitigate these challenges, potentially impeding their sustainability objectives. Another challenge is ensuring a reliable internet connection. Since virtual organizations heavily rely on the internet for communication and collaboration, any disruptions in connectivity can impact productivity. Another challenge is managing cybersecurity risks. Virtual organizations need to stay vigilant and implement robust security measures to protect sensitive data and prevent cyber attacks. Additionally, keeping up with technological advancements and regularly updating software and hardware can be a challenge. It requires staying informed and adapting to new technologies to ensure the IT infrastructure remains efficient and effective. Thus, there is an urgent need for research and practical solutions that bridge the gap between IT infrastructure and sustainability in virtual organizations, enabling them to optimize resource utilization, enhance resilience, and minimize environmental footprints while maintaining operational efficiency and competitiveness in the digital era.

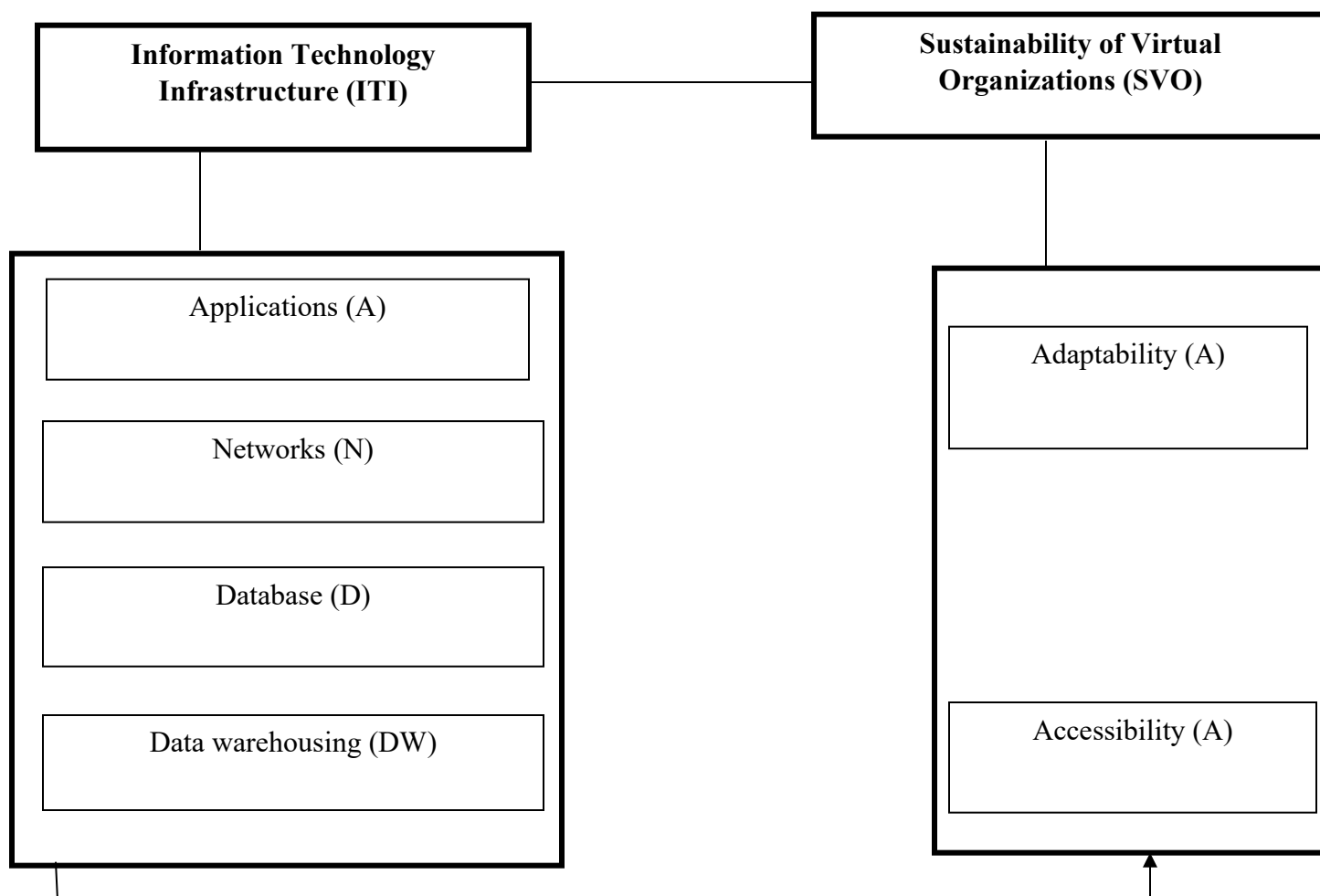


**Fig. 1.1:** Conceptual Framework of Information Technology Infrastructure and Sustainability of Virtual Organizations

*Source: Researchers' Conceptualization from the Review of Related Literature 2024*

### Purpose of the study

The general purpose of this study was to examine the relationship between information technology infrastructure and sustainability of virtual organizations in Port Harcourt. The specific purpose of studying information technology infrastructure and sustainability of virtual organizations, include:

- c) To examine how applications enhances the sustainability of virtual organizations in Port Harcourt.
- d) To evaluate how networks facilitates the sustainability of virtual organizations in Port Harcourt.
- e) To investigate how database enhance the sustainability of virtual organizations in Port Harcourt.

- f) To analyze how data warehousing enhance the sustainability of virtual organizations in Port Harcourt.

### Research Questions

The following research questions were posed to guide this study are stated as follows:

- 11. To what extent do applications enhance the sustainability of virtual organizations in Port Harcourt?
- 12. How does network enhance the sustainability of virtual organizations in Port Harcourt?
- 13. How does database enhance the sustainability of virtual organizations in Port Harcourt?
- 14. To what extent does data warehousing enhance the sustainability of virtual organizations in Port Harcourt?

## Research Hypothesis

The null hypotheses formulated to guide this study are stated as follows:

H<sub>01</sub>: There is no significant relationship between applications and adaptability of virtual organizations in Port Harcourt.

H<sub>02</sub>: There is no significant relationship between applications and accessibility of virtual organizations in Port Harcourt.

H<sub>03</sub>: There is no significant relationship between network and adaptability of virtual organizations in Port Harcourt.

H<sub>04</sub>: There is no significant relationship between network and accessibility of virtual organizations in Port Harcourt.

H<sub>05</sub>: There is no significant relationship between database and adaptability of virtual organizations in Port Harcourt.

H<sub>06</sub>: There is no significant relationship between database and accessibility of virtual organizations in Port Harcourt.

H<sub>07</sub>: There is no significant relationship between data warehousing and adaptability of virtual organizations in Port Harcourt.

H<sub>08</sub>: There is no significant relationship between data warehousing and accessibility of virtual organizations in Port Harcourt.

## Significance of the study

The first beneficiaries of this study would be the virtual organizations operating in Port Harcourt, as the study is specifically domiciled in their sector, as a result, at the completion of the study, it is expected that valuable insights will be derived from this study by virtual organizations that will be integral to overall sustainability. Employers of labour and organizational leaders in other sectors will also benefit immensely from the findings of this study, it is expected that superiors will eventually realize the positives that comes with the deployment of information technology infrastructure as it is not only cost effective but also integral to organizational productivity. Government ministries and other public agencies will also benefit enormously from this study such that, superiors in respective agencies will also gain valuable insights from this study as far as information technology infrastructure. Academics and other researchers would also find this study very rewarding as the study

would be used as reference material. Students and future researchers especially those in office and information management will find this research very useful since it will serve as a guide for future researches in the field of office and information management.

## Scope of the study

**Content Scope:** This study focuses on ascertaining the relationship between information technology infrastructure and the sustainability of virtual organizations in Port Harcourt. It covers concepts such as; Applications, Network, Database and Data warehousing are adopted as the dimensions of information technology infrastructure while Adaptability and accessibility are adopted as the measures of sustainability of virtual organizations.

**Geographical Scope:** This study will embrace virtual organizations in Port Harcourt.

**Unit of Analysis:** The macro unit of analysis will be adopted. This is because; the leadership of virtual organizations will constitute our target population.

## Limitations of the study

This study comes with its own set of challenges and difficulties. Obtaining accurate and comprehensive data from virtual organizations was difficult due to privacy concerns because the researcher must navigate ethical considerations related to data privacy, confidentiality, and informed consent, especially when studying virtual teams or individuals who may be geographically dispersed. Also, finding a sufficient number of virtual organizations willing to participate in research studies was challenging since the researcher requires access to specific industries or types of virtual organizations. The epileptic power supply in the researcher's residential environment greatly affected the work. Finally, the researcher is restricted only to the available information provided by the participants in the research and cannot determine the reliability and correctness of the information provided.

## Definition of Terms

The key terms used in this study are systematically highlighted and defined as follows:

**Accessibility:** This refers to the extent to which something, such as a product, service, environment, or information, is available and usable by people with disabilities or other diverse needs. It ensures that everyone, regardless of abilities or limitations, can participate fully and equally in activities, use facilities, and access information.

**Adaptability:** This is the ability to adjust or change in response to new conditions, situations, or environments. It involves being flexible, resilient, and able to learn and grow in different circumstances.

**Applications:** Applications, often referred to as "apps," are software programs designed to perform specific tasks or functions on computers, smart phones, tablets, or other digital devices. They are developed to meet the needs and preferences of users. Applications can be downloaded and installed from various sources, such as app stores, websites, or pre-installed on devices.

**Database:** This is a structured collection of data organized for efficient retrieval, storage, and manipulation.

**Data warehousing:** Data warehousing is the process of collecting, storing, and managing large volumes of structured and unstructured data from various sources within an organization. This data is consolidated into a centralized repository, known as a data warehouse.

**Information Technology Infrastructure:** Information Technology (IT) infrastructure refers to the combination of hardware, software, networks, facilities, and services required for the existence, operation, and management of an organization's IT environment.

**Networks:** A network is a interconnected system of nodes or entities that communicate and share resources with each other. These nodes can be computers, servers, devices, or even people. Networks can be local, connecting devices within a limited area like a home or office, or wide-reaching, such as the internet, which connects devices globally.

**Sustainability:** This refers to the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing economic, environmental, and social considerations to ensure long-term viability and resilience in resource usage, development, and societal well-being.

**Virtual organizations:** Virtual organizations are entities that operate primarily or entirely through digital means, without a central physical location. They leverage technology to facilitate communication, collaboration, and coordination among geographically dispersed members or teams.

## Review of Related Literature

This chapter will discuss the study variables and its underpinning dimensions and measures. Therefore, the following will be discussed under this section.

- e) Theoretical Foundation
- f) Overview of Information Technology Infrastructure
- g) Understanding Information Technology Infrastructure
- a. Applications
- b. Network
- c. Database
- d. Data Warehousing
- h) Sustainability
- c) Adaptability
- d) Accessibility
- e) Resource Based Theory

The baseline theory associated with this study is the resource-based theory (RBT). The resource based theory is an influential approach in strategic management. It has been widely applied as a managerial framework to determine vital resources for a firm to achieve a sustained competitive advantage. The theory provides an essential framework to explain and predict the fundamentals of a company's performance and competitive advantage. Resource-Based Theory (RBT) was first put forward by Penrose (2009), who proposed a model on the effective management of firms' resources, diversification strategy, and productive opportunities. Penrose's publication was the first to propose conceptualising a firm as a coordinated bundle of resources to address and tackle how it can achieve its goals and strategic behaviour (Penrose, 2009). RBT began to take shape in the 1980s. The antecedent of RBT was the Theory of the Growth of the Firm. Later, during the 1990s, Jay Barney's work was critical to the emergence of RBT and became the dominant paradigm in strategic management and strategic planning. RBT provides a framework to highlight and predict the fundamentals of organisation performance and competitive advantage. The focus of RBT on the firm's performance based on Meso's perspectives was a reaction to the earlier managerial interest in the industry structure, a more macro perspective. RBT addresses an internally-driven approach by focusing on internal organisation resources, as opposed to externally driven approaches to understanding the accomplishment or failure of leveraging organisational activities (Kozlenkova, Samaha & Palmatier, 2014). It aims to elaborate on imperfectly imitable firm resources that could potentially become the source of sustained competitive advantage (Barney, 1991).

## Overview of Information Technology Infrastructure

In increasingly competitive business environment, information technology (IT) infrastructure is the most important aspect of all aspects of human life,



including business activities where companies are required to keep up their developments in information technology so that they can improve their performance. This is following the research results of (Mithas & Rust, 2016) which stated that information technology has an effect on company performance in reducing costs and increasing revenue. The concept of information technology infrastructure has two relationships even though it has different components; a technical technology information infrastructure and a human technology information infrastructure (Duncan, 1995). Investments in the same information technology infrastructure in one company may result in profitable innovations, but the information technology investment may be less profitable in another company due to the effectiveness of a human technology information infrastructure. This is supported by the research results conducted by Ruiz et al. (2006) which stated that individual and collaborative information technology as well as individual and organizational learning show positive and significant effects on performance. It is also in line with the research results conducted by (Ong & Chen, 2013) which stated that information technology capability has significant effects on company performance in the short and long term.

In addition to the ability of information technology personnel, high company performance is also influenced by information technology investment. This is following the research results conducted by (Ibragimov, 2015) which stated that information technology investment has a strong positive correlation with company performance, in this case, that is measured by the growth of Gross Domestic Product (GDP). Information technology investment is often associated with a company's information technology strategy, whether the company will be an innovator or satisfied to be a defender. The alignment between the information technology strategy and the company's strategy, determine thus a high level of performance will be achieved. This is supported by the research results conducted by (Firman & Said, 2016) stated that information technology strategy has positive and significant effects on company performance directly and by mediating the effects of technology strategy and value creation. Research conducted by (Mithas & Rust, 2016) showed that information technology strategy has an impact on company performance, such as the impact on cost reduction and revenue growth, but this emphasis on performance also depends on the level of company investment (Gueymard, 2017).

## **Understanding Information Technology Infrastructure**

Information technology infrastructure as the basic foundation of information technology capabilities which includes internal techniques (among others: equipment, software and cabling as well as human expertise) that are needed to provide reliable services. According to (Mauerhoefer et al., 2017) information technology infrastructure refers to information technology hardware, communication and data networks as well as information technology employees who are needed to support the distribution of information technology tools. In this study, the information technology infrastructure is represented under the following sub-headings; information technology Capabilities, information technology investment and information technology strategy.

### **Information Technology Capability**

Cepeda & Arias-Pérez (2019) state that information technology capability is an organization's ability to find, implement and developing IT resource and reconfigure IT resources in order to achieve competitive advantage. IT capability is a corporate ability in managing IT resources, where IT capabilities are an important aspect is to achieve business value, business strategies and improving work processes (Cai, 2016). The IT capabilities in this research are the abilities of virtual organizations' leaders to deploy necessary information technology infrastructure so as to effectively drive organizational objectives and overall sustainability.

### **Information Technology Investment**

IT investment can include projects or activities to the development, modernization, enhancement, or maintenance of an IT asset in accordance with their functions and operation as well as with production environment (The IT Law Wiki, 2020). In this project, the IT investment includes all the costs that are incurred by virtual organizations for procurement, development, maintenance of IT assets and IT employee.

### **Information Technology Strategy**

According to Sibanda, & Ramrathan (2017) information technology strategy is the actualization of planning, which consists of tactics, principles and goals related to the use of IT in organizations. Alignment of IT strategy with business strategy is essential in achieving performance and overall sustainability. In this study, the IT strategy is the actualization of planning in the use of IT that is aligned with virtual organization's strategy to achieve sustainability.

## **Dimensions of Information Technology Infrastructure**

In this study, information technology infrastructure is addressed under four dimensions which includes; applications, network, database and data ware housing.

### **Applications**

According to techtarget.com applications are software, or programs, consists of all the electronic instructions that tell the computer how to perform a task. The term software was coined by John Tukey. Application software is a set of programs designed for specific uses or applications such as word processing, graphics or spreadsheet analysis. These applications are designed to satisfy a particular need of a particular environment. Application software, designed to satisfy one purpose may not be able to solve other purpose of the same user. For example, software for financial management cannot be used for designing two-dimensional graphics. Similarly, we have word processors for letter writing and presentation software for presentations. We cannot interchange the use of two application software with each other.

Application software can be custom-made but are usually purchased from a software store. Some of the popular application packages are Word processors, Spreadsheets, Database system, Accounting packages, DTP packages, Graphic packages and Antivirus software. Word processing software allows you to create, edit, format, print, and store text material, among other things. Word processor is the most common application software. The well known word processing programs are Microsoft Word, Writer, Wordpad, Text Editor and Star Word. Microsoft Word (MS-Word) is the most popularly used word processing application software that provides you with a number of useful and fabulous features to process the text. A word processor, in general, can be used to manipulate the text in a variety of ways. In addition to it, you can save your documents in a word processor and use them according to the need, whenever required. The features that are provided by any word processor (as editing, formatting text) are available in MS-Word, which also supports some additional and special features (*e.g.*, mail merge).

Techtarget.com posited that word processing is by far the most widely used computer application because it is used for communication, our most common activity. Word processor is used to write, edit and format memos, letters, reports, manuscripts, contracts, and every imaginable type of documents. No matter what the information is or what form it takes, the chances are it was initially composed and written using a word processing program. A word processor is software which provides a graphical user interface with better

capabilities than a text editor does. The main advantage of a word processor is that it provides WYSIWYG (What You See Is What You Get) interface which helps you make changes quickly and easily.

### **Network**

According to Wikipedia (2006) a computer network (network) is a communication network that allows computers to communicate with each other by exchanging data. The purpose of a computer network is to be able to achieve its goals, every part of a computer network can request and provide services (service). The service requester/recipient is referred to as the client (client) and the service provider/sender as the server (server). This model is called a client-server system and is used in almost all computer network applications. Two computers, each with a network card, are then connected by cable or radio as a means of communication and the network operating software forms a simple computer network. If you want to create a computer network with larger dimensions, additional devices such as connection devices are needed, *eg.* For example. hubs, bridges, switches, routers, gateways. The history of computer networks began with the birth of the concept of computer networks in America in the 1940s, which started with the MODEL I computer development project from the Bell Laboratory and a Harvard University research group led by Professor Howard Aiken. Initially, the project wanted to use only one computing device, which had to be shared. To work on many processes without wasting a lot of free time, batch processes were created to allow one computer to run many programs with one queue rule. Then in the 1950s, because the types of computers began to develop through the development of supercomputers, computers had to serve several available locations (terminals).

The development of information science is increasing rapidly, this is evident in the era of the 80s, computer networks are still a mystery that scientists want to answer, and in 1988 they started using computer networks in universities, and in 1988 they started using computer networks. . For businesses now entering the millennium, the global internet in particular has become a daily reality for millions of people around the world. In addition, network hardware and software have changed substantially: at the dawn of development, almost all networks were built with coaxial cable; today many are built with fiber optic or wireless communications. Computer networks allow devices to connect to each other. As an example: Transfer files, share resources, and communicate electronically With the development of computing and communication technology, a single

computer model that performs all organizational computing tasks has now been replaced by separate computers that are interconnected with each other in carrying out their duties. Such a system is called a computer network (Wikipedia, 2006).

Computer networks are built using a combination of hardware and software. When two or more computers communicate or exchange data with each other, a computer network has a part that receives or requests services called a client and a part that provides or sends services is called a server. This type of design is often referred to as a client-server system. This networked computer must also have at least 1 network card, which is then connected via cable or wireless as a data transmission medium and network operating software to form a simple computer network. If you want to create a wider computer network, you need additional devices such as hubs, switches, routers, etc. to support it. There are various types of computer networks that we often see and are classified according to their range, namely:

#### **LAN (local area network)**

LAN or Local Area Network is a concept that connects network devices over relatively short distances. Usually used for school buildings, offices, homes, etc. This LAN concept usually uses a special connection, especially Ethernet and Token Ring. There is also a local area network that uses wireless or wireless network technology with WI-FI and is known as a Wireless Local Area Network (WLAN).

#### **3. MAN (Metropolitan Area Network)**

MAN or Metropolitan Area Network is a concept that connects network devices from one city to another. Meanwhile, building a network using a local area network is no longer possible, MAN networks are used because their reach is wider than LANs, MANs use special equipment and require telecommunications operators to act as a link between computer networks.

#### **4. WAN (Wide Area Network)** WAN or Wide Area Network is a concept that connects computer network devices that cover a very wide area and use very sophisticated equipment. Compared to MAN and LAN networks.

The concept of this network itself is usually used to connect a network from one country to another, ie. H. between countries and even between continents. An example of such a complex device is fiber optics, which are installed underground or under the sea. In the development of computer networks, this cannot be distinguished from the term topology, where topology can be described as the shape or structure of a virtual

network that refers to the arrangement of connected devices, although this shape does not always match (Wikipedia, 2006)

#### **Database**

Database systems are any logically coherent collection of data organized for storage and retrieval by computers, as a single, possibly large, repository of data that can be used simultaneously by multi-users (Gehani, 2006). Databases provide a high level of structure for the collection of data. Structured collection of data leads to a consistency that is essential for the operation of an IMS. Data within a database are captured electronically with a relatively small amount of storage space compared with conventional paper records. Databases also allow the use of queries and search tools, which make the retrieval of information from even large amounts of data fast and highly specific.

Berkowitz (1998) posits that the two main types of databases are flat-file and relational databases, in both of which the data are placed in tables with columns and rows. However, in a flat-file database, the data are placed within a single, spreadsheet-like table. In a relational database, each of several tables contains a specific type of information, and the tables are linked by primary and secondary keys. Flat-file databases can be very efficient when there are simple one-to-one relationships between the data (e.g., one patient to one medical record number [MRN]). When the data have one-to-many or many-to-one relationships (e.g., one physician to many patients or vice versa), it is best to use a relational database. Relational databases are preferred to flat-file databases for all but simple applications that are limited in scope.

According to Hawkins, Hugh, Young Scot, Hubert, Katherine, and Hallock (2007), a popular high-level data model used in logical database design is based on the concepts of the Entity-Relationship (ER) model. Currently there is no standard notation for an ER model covering database design for relational DBMSs tending to use one of two conventional notations such as: (i) Chen's notation, consisting of rectangles representing entities and diamonds representing relationships, with lines linking the rectangles and diamonds; (ii) Crow's Feet notation, again consisting of rectangles representing entities and lines between entities representing relationships at the end of a line represents a one-to-many relationship. The database is now such an integral part of our day-to-day life that often we are not aware we are using one. A database application is a computer program that interacts with the database in some way, while database system is a collection of database applications that interacts with the database along with the DBMS and the database itself. Hence, the basic functions of a database are

provided by a DBMS through a database engine; a software system that manages how data is stored and retrieved (Connolly & Carolyn, 2002). For example, Microsoft Jet is a database engine which is a subsystem of Visual Basic and Microsoft Access for stand-alone implementation; while Microsoft SQL Server is for Client - Server implementation. Users interact with the database through a number of database applications that are used to create and maintain the database and to generate information. These programs can be conventional batch applications or, more typically nowadays, online applications. The database applications may be written in a third-generation programming language such as C++ or Java, or in some higher-level fourth-generation language. The physical structure and storage of the data are managed by the DBMS (Date, 2013).

### **Data Warehousing**

According to Abello et al, (2000) the popularity of data warehouses grew fast during the last years. They posited that data warehouse is a subject-oriented, integrated, time-varying, non-volatile collection of data that is used primarily in organizational decision making.” (Auth & Maur, 2002) defined data warehouse as “the huge, silent storage that extracts and then stores the data from the separated transactional system on daily basis. The data warehouse is the decision support database.” From these definitions, we can summarize that a data warehouse collects and stores integrated sets of historical data from multiple operating systems, provides end-user access, enables the knowledge worker to make better decisions or conduct accurate analysis. Thus, the data warehouse is the foundation of Decision Support System (DSS) processing.

According to Rajan (n.d.) data warehouse potential can be magnify if the appropriate data has been collected and stored in a data warehouse. A data warehouse is a relational database management system (RDBMS) designed specifically to meet the needs of transaction processing system. It can be loosely defined as any centralized data repository, which can be queried for business benefit, but this will be more clearly defined later. Data warehouse is a new powerful technique making. It possible to extract archived operational data and overcome inconsistencies between different legacy data formats, as well as integrating data throughout an enterprise, regardless of location, format, or communication requirements it is possible to incorporate additional or expert information it is.

The logical link between what the managers see in their decision Support EIS application and the company's operational activities Johan McIntyre of

SAS institute Inc. In other words the data warehouse provides warehouse provides data that is already transformed and summarized, therefore making it an appropriate environment for the more efficient DSS and EIS applications.

A data warehouse is a collection of corporate information, derived directly from operational system and some external data sources. Its specific purpose is to support business decisions, not business as “What if?” questions. The answer to these questions will ensure your business is proactive, instead of reactive, a necessity in today's information ago (Rajan, n.d.).

He further stressed that industry trend today is moving towards more powerful hardware and software configuration; we now have the ability to process vast volumes of information analytically, which would have been unheard of tenor even five years ago. A business today must we able to use this emerging technology or run the risk if being information under loaded. As you read that correctly - under loaded - the opposite of over loaded. Overloaded means you are to determine what is important. If you are under loaded, you are information deficient. You cannot cope with decision – making expectation because you do not know where you stand. You are missing critical pieces of information required to make informed decisions.

### **Concept of Sustainability**

According to Bestman & Sam (2022), the concept of sustainability has gained and attracted lots of attention in recent times, as organizations with its stakeholders are turning their attention towards this critical issue of sustainability that encompasses the economic, environmental and social dimensions of sustainability. Sustainability of businesses has been gaining its rightful recognition and importance as it offers competitive advantage and creates value for organizations, their stakeholders, and society (Bonini & Gerner, 2011). However, according to (Hong, Roh & Wawski, 2012) sustainability has not been fully integrated at the strategic and operational level. Some researchers believe that the main hurdle in operationalization of sustainability in organizations is the lack of maintainable value creation throughout the value chain, because parts of these activities are beyond the control of organizations, such as supply chain. Others argue that it is the lack of practicable frameworks and models which holds back the organizational actors from (holistically) considering sustainability in business decisions (Nawaz & Koc, 2018). The latter is particularly important because existing sustainability management models and frameworks are based on conceptual and theoretical designs. The structure of these models lacks a fundamental practicable approach which limits their

use in practice. In order to increase the potential application of existing organizational sustainability models, it is important to integrate the sustainability best-practices within the structure of these models. The reason for this is fairly simple: organizational actors generally prefer ‘practical rationale’ over ‘scholarly intellect. Besides applicability, the integration of theories and practices enables the model/framework developers to understand and address the practical limits of organizations in managing sustainability.

### **Adaptability**

Adaptability is the ability of an organization to recognize the need to change and seize opportunities in dynamic environments. In an increasingly complex world, leadership must pay close attention to dynamic, distributed, and contextual aspects in order to position their organizations for adaptability. The theory of dynamic capabilities constitutes a central concept for the requirements that enable organizational adaptability. According to (Uhl-Bien & Arena 2018), Adaptation to changing environmental conditions is a focal subject of organizational studies and deemed a necessity for organizations in every industry. The dynamic nature of most competitive environments requires organizations to continuously or periodically innovate in order to create a competitive advantage and eventually to survive (Hauschildt et al. 2016). Wiltbank et al. (2006) highlighted the significant empirical support for adaptive organizations having higher chances to succeed; in his words, flexible and adaptive organizations are able to outmaneuver their competitors by quickly capturing new opportunities. This can ultimately lead to improvements in the competitive position of an organization and increase the organization’s performance. A central concept capturing the notion of the need for organizations to change is organizational adaptability, which (Birkinshaw & Gibson, 2004) defined as “the ability to move quickly towards new opportunities, to adjust to volatile markets and to avoid complacency”. Among the many theories that were established covering organizational change, a common parameter of all theories is that change is oriented towards a specific individual goal (van de Ven & Poole 2005). Thus, initiating change in an organization is an active decision to achieve a certain outcome, and organizations must create readiness for change. Taking an active decision requires that organizational change should be managed consciously by considering factors that enable change, such as the required knowledge and skills, resources and commitment (Al-Haddad & Kotnour, 2015). In other words, certain capabilities are required in order to successfully manage an organizational change process. The

relevance of adaptability as a measure of the sustainability of virtual organizations cannot be over emphasized. When the goals and objectives of virtual organizations are attained, employees are retained, increased patronage, satisfied clients act as referral agents; undoubtedly, these positive outcomes will ultimately improve the overall productivity and overall sustainability of the firms.

### **Accessibility**

The terms *access* and *accessibility* have been in circulation for at least a century, and their usage generally connotes availability and physical accessibility for a certain population (Guy, 1983). The word *access* in English originated from Latin, meaning “accession” (Hoad, 1996). In contemporary policy discourse in English, however, access is defined as making information and communication technologies (ICTs) widely available to all citizens (Wise, 1997). Echoing this meaning of access, the *Oxford English Dictionary* defines accessibility as “the quality or condition of being accessible (in various senses)” (Oxford University Press, n.d.). It further defines accessible as “capable of being conveniently used or accessed by people with disabilities; of or designating goods, services, or facilities designed to meet the needs of the disabled.” To discuss accessibility, understanding how access, accessibility, and accessible *design* have become common terms (with fluid definitions) in technical communication today is important. This essay will unpack these terms by considering both historical definitions and contemporary perspectives.

Not only do the terms access and accessibility have different meanings, but researchers also differ in how they relate the terms and establish their connection to disability. These differing views represent the perspectives of technical standards organizations, digital rhetoricians, disability activists, and disability studies-centred design scholars. The International Organization for Standardization (2014) defines accessibility as the “extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use” (n.p.). James Porter, a digital *rhetoric* scholar, makes a distinction between access and accessibility. “Access,” Porter explains, “is the more general term related to whether a person has the necessary hardware, software, and network connectivity in order to use the Internet—and to whether certain groups of persons have a disadvantaged level of access due to their race, ethnicity, socioeconomic status, gender, age, or other factors” (2009). Accessibility, on the other hand, “refers to the level of connectedness of one particular

group of persons—those with disabilities” (Porter, 2009). Porter also adds that “the reason to write/design for accessibility is not only to allow people with disabilities to consume information, but to help them produce it”. Activists in the disability field do not always make Porter’s distinction. For example, the University of Leeds’ Centre for Disability Studies employs *access* as the search term for all accessibility-related entries on its website. Speaking from a disability studies-centred design perspective, (Sushil Oswal 2013) describes accessibility more broadly as “the ability to use, enjoy, perform, work on, avail of, and participate in a resource, technology, activity, opportunity, or product at an equal or comparable level with others” (n.p.). As these varying definitions from different disciplines suggest, accessibility is shaped by a number of factors which can change from context to context and are both spatial and temporal in nature: physical distance from resources and opportunities, the availability of *technology* and means to overcome that distance, and the infrastructural and legal resources to overcome barriers to workplace entry. For example, for full integration into society, a disabled person not only needs a job to support them self and their family but also laws to protect them from discrimination by employers and providers of services, consistent access to adaptive technology and special training for holding on to a job, accessible opportunities to participate in recreational activities, and of course, availability of inclusively designed consumer goods for living a comfortable life (Wilson & Lewiecki-Wilson, 2001).

Since technical communication is preoccupied with design and communication of information, and since information is imbedded everywhere in human environments, the field’s scope extends into the accessibility of both the brick-and-mortar and digital spaces (Whitehouse, 1999). Accessibility in the former can consist of signage, directories, and spatial maps-digital and otherwise—whereas accessibility in the latter refers to a range of ICTs, including “computer hardware and software, digital broadcast technologies, telecommunications technologies such as mobile phones, as well as electronic information resources such as the world wide web” (Selwyn,

2004). The World Wide Web Consortium’s (W3C) web content accessibility guidelines (2.1) breaks down accessibility into four elements in terms of the interactivity of the web for the disabled user: perceivable, operable, understandable, and robust (Web Accessibility Initiative, 2019). Though W3C’s intent for these guidelines is to assist developers in designing accessible websites from the bottom up, more often, these are used for checking the accessibility of already built websites for the purpose of retrofitting them with accessibility (Wentz et al., 2011).

## Methods

This chapter tends to explain and highlight the methods and procedures that will be used for the collection of data to be analyzed in order to achieve the study objectives. This chapter is organized under the following subheadings;

- i. Research Design
- ii. Population of the Study
- iii. Sample/Sampling Technique
- iv. Instrument for Data Collection
- v. Reliability of Instrument
- vi. Validity of Instrument
- vii. Administration of Instrument
- viii. Data Analysis Techniques

## Research Design

This empirical study adopted a cross sectional research design which is a form of the quasi experimental research design in its assessment of the study variables.

## Population of the Study

The study population was drawn from 12 registered and functional virtual organizations in Port Harcourt, Rivers State. And this information was obtained from the human resources units of each of the organizations under investigation. As a macro study, only management staff of these organizations were studied.

**Table 3.1: Names of Virtual Organizations**

| Names of virtual Organizations |              | Participants |
|--------------------------------|--------------|--------------|
| 1.                             | MTN Nigeria  | 19           |
| 2.                             | Mobile       | 16           |
| 3.                             | DSTV Nigeria | 12           |
| 4.                             | GOTV         | 12           |
| 5.                             | Kuda Bank    | 12           |
| 6.                             | VBank        | 12           |
| 7.                             | Opay         | 12           |
| 8.                             | Sparkle      | 12           |
| 9.                             | PalmPay      | 12           |
| 10.                            | Fundal       | 12           |
| 11.                            | Gomoney      | 12           |
| 12.                            | ALAT         | 12           |

**Source: Field Survey, 2024**

### Sample and Sampling Technique

Due to the large nature of the population and our inability to study the entire population, a sample size of 155 was conveniently chosen from the regional offices and branches of 12 functional and operational virtual organizations in Port Harcourt. The sample was arrived at by conveniently choosing managerial staff of virtual organizations in Port Harcourt, since they are in position to give useful and reliable information to the problem under investigation.

### Instrument for data Collection

The study utilized structured questionnaire as the instrument for data collection. It contained structured items on the study variables. A five-point rating scale was used and the respondents responded thus;

|                        |   |          |
|------------------------|---|----------|
| Very High Extent (VHE) | - | 5 Points |
| High Extent (HE)       | - | 4 Points |
| Moderate Extent (ME)   | - | 3 Points |
| Low Extent (LE)        | - | 2 Points |

Very Low Extent (VLE) - 1 Point

### Validation of the Instrument

This refers to the extent/degree to which an instrument measures what is intended to measure. The researcher employed content validity in the reports to obtain information from the respondents and face validation made by an expert in the field. The data was pre-tested on a group of managers outside our scope of study with a view to ascertaining their suitability for the study.

### Reliability of the Study

The test-retest reliability test has the disadvantage of being influenced by patience and memory. The Cronbach's Alpha coefficient aided the researcher in testing the internal reliability of the measures through the Statistical Package for Social Sciences (SPSS). Only items that returned alpha values of 0.7 and above were considered reliable enough for the study.

**Table 3.2 Internal Reliability of the instrument**

| S/No | Variables        | Number of items | Number of cases | Cronbach's Alpha |
|------|------------------|-----------------|-----------------|------------------|
| 1    | Applications     | 3               | 136             | 0.782            |
| 2    | Networks         | 3               | 136             | 0.702            |
| 3    | Database         | 3               | 136             | 0.779            |
| 4    | Data Warehousing | 3               | 136             | 0.761            |
| 5    | Adaptability     | 2               | 136             | 0.810            |
| 6    | Accessibility    | 2               | 136             | 0.726            |

**Source: SPSS OUTPUT, 2024**

### Administration of Instrument

A total of one hundred and fifty-five (155) questionnaires were administered to the respondents using different online platforms such as their verified social media handles and emails. This was done by the researcher with the help of a research assistant.

### Methods of Data Analysis

Descriptive statistic was adopted in the analysis of the properties and demographic coverage while the inferential statistics was used for the test of correlation using the Spearman rank order of correlation coefficient statistical tool. Data analysis

was done using the statistical software for social sciences (SPSS) version 23; with data presentations illustrated using contingency tables and charts.

### Analysis and Interpretation of Data

The presentation of the descriptive and inferential analysis of the survey data. The results of this are interpreted to arrive at our study findings. In order to achieve this objective, 155 structured questionnaires copies based on an estimated sample size of the study were administered to leaders of virtual organizations in Port Harcourt, Rivers State. Below is the questionnaire distribution success rate.

Table 4.1: Presentation of Questionnaire Distribution.

| <i>Particulars of questionnaire</i>    | <i>Frequency</i> | <i>Percentage</i> |
|----------------------------------------|------------------|-------------------|
| Number of questionnaire administered.  | 155              | 100               |
| Number of questionnaire retrieved      | 149              | 96.13             |
| Number of questionnaire not returned   | 6                | 3.87              |
| Number of questionnaire wrongly filled | 13               | 8.72              |
| Number of usable questionnaire         | 136              | 91.28             |

*Source: Field Survey, 2024*

From table 4.1, it is observed that 155 questionnaires were administered to respondents. 6 questionnaires representing 3.87 percent were not returned. 149 questionnaires representing 96.13 percent were returned. However, out of this number only 136 questionnaires representing 91.28 percent were correctly filled and thus suitable for data analysis.

### Data Analysis

The data analysis for this study is categorized into two; descriptive and inferential. The descriptive analysis examines socio-demographic samples and primary data analysis while the inferential analysis examines the test of previous hypothesized statements.

### Demographic Analysis

Table 4.2 Showing Sex Distribution of Respondents

|       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|---------|---------------|--------------------|
| Valid | Male      | 76      | 55.9          | 55.9               |
|       | Female    | 60      | 44.1          | 100.0              |
|       | Total     | 136     | 100.0         |                    |

*Source: Research Data , 2024 (SPSS output, version 23.0)*



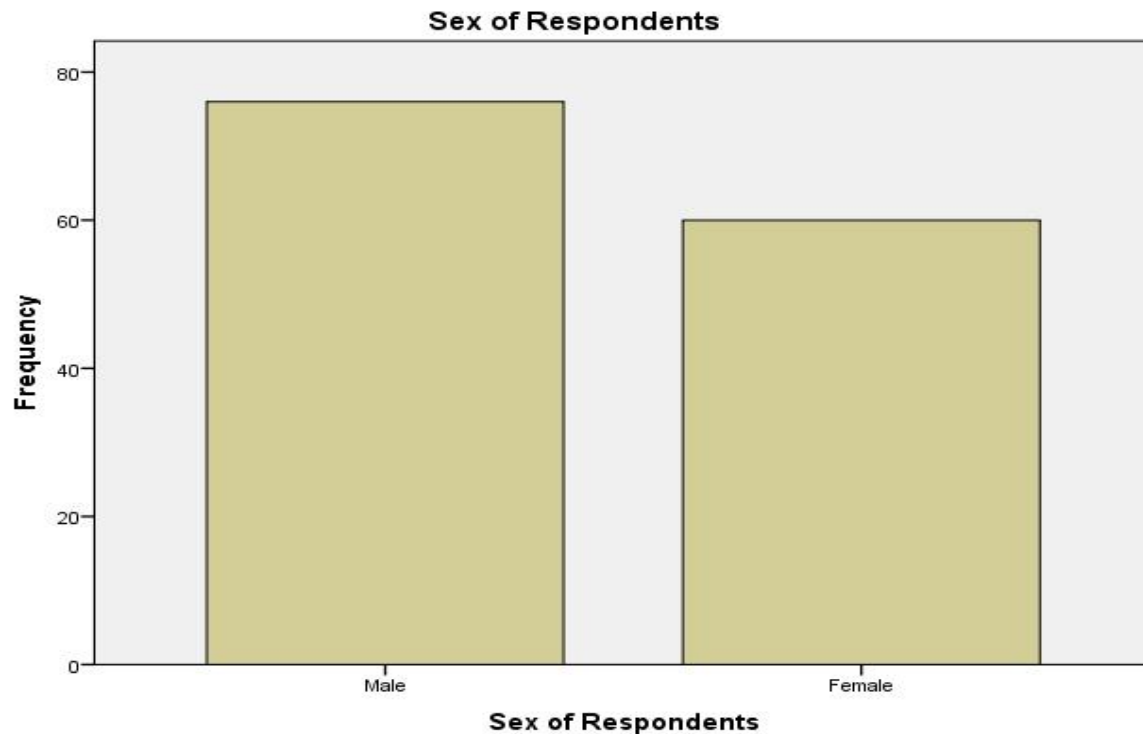
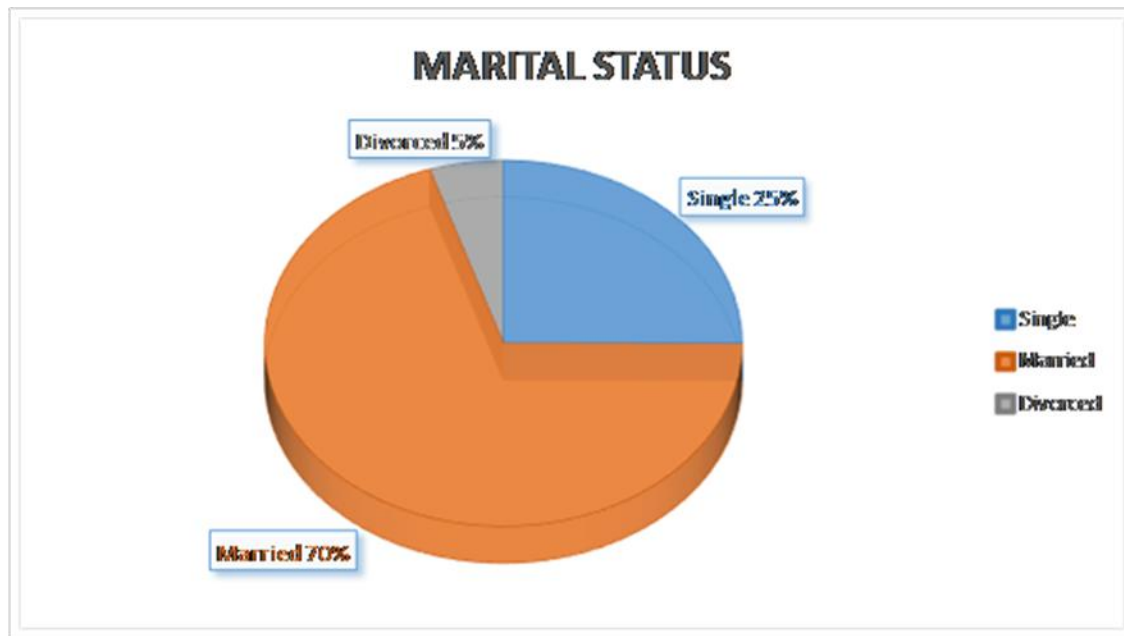


**Fig Sex Distribution of Respondents**

Table 4.2 shows that 76 (55.9%) of the respondents are males while 60 representing (44.1%) of the respondents are female. Indicating that we had more of males as our respondents

**Fig Illustrating Marital Status Distribution**

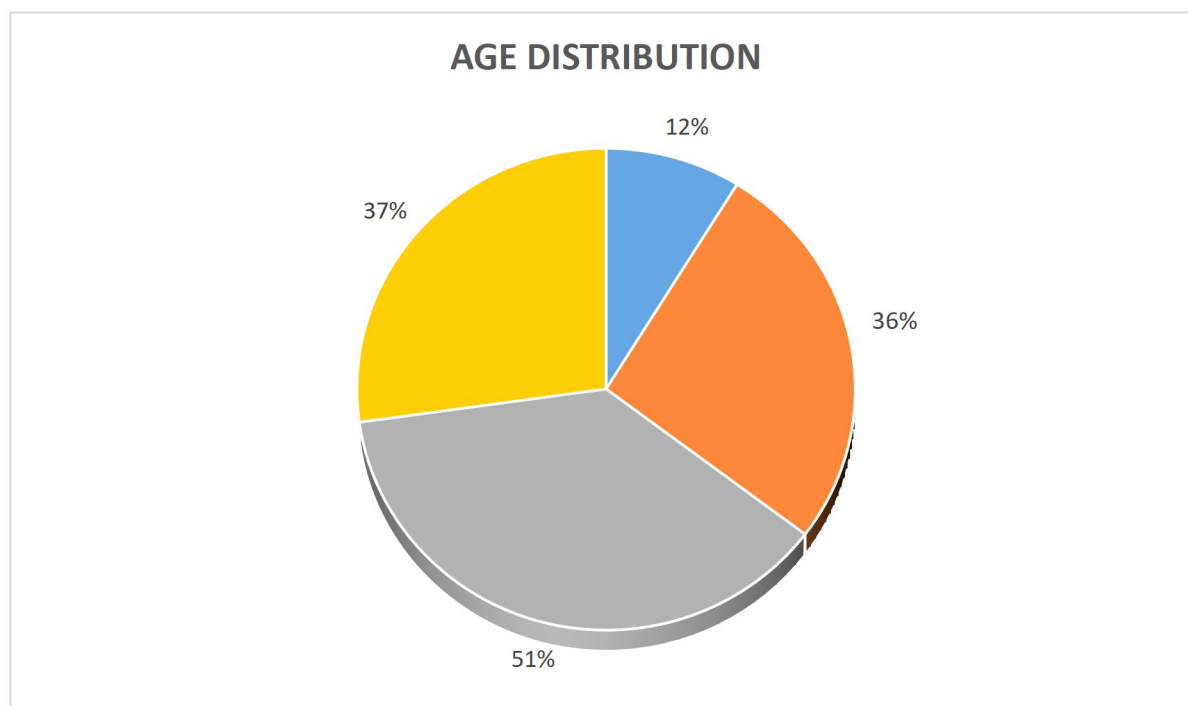
The figure above illustrates the marital status of participants with the proportion of married respondents at 70% more than that of single respondents which stood at 25% and divorced respondents at 5% respectively. This implies that most of the staff in the target population are married.



Showing Age Distribution of Respondents

|       |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | 30-35 years | 12        | 8.8     | 8.8           | 8.8                |
|       | 36-40 years | 36        | 26.5    | 26.5          | 35.3               |
|       | 45-50 years | 51        | 37.5    | 37.5          | 72.8               |
|       | 51-60 years | 37        | 27.2    | 27.2          | 100.0              |
|       | Total       | 136       | 100.0   | 100.0         |                    |

*Source: Research Data, 2024 (SPSS output, version 23.0)*



#### Age Distribution of Respondents

From the data in table 4.3, it can be observed that 12 representing 8.8 percent of the respondents fall within the age bracket of 30-35. Also, 36 respondents representing 26.5 percent fall within the 36-40 years age mark. Furthermore, 51 of the respondents

representing 37.5 percent were observed to have fallen within the 45-50 years age bracket and finally 37 respondents representing 27.2 percent of the total respondents were 55-60 years age bracket.

Table Showing Educational Levels of Respondents

|                             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------------------------|-----------|---------|---------------|--------------------|
| OND/Diploma                 | 43        | 31.6    | 31.6          | 31.6               |
| First Degree                | 39        | 28.7    | 28.7          | 60.3               |
| Valid Post Graduate Degrees | 37        | 27.2    | 27.2          | 87.5               |
| Professional Certifications | 17        | 12.5    | 12.5          | 100.0              |
| Total                       | 136       | 100.0   | 100.0         |                    |

**Source:** Research Data, 2024 (SPSS output, version 23.0)

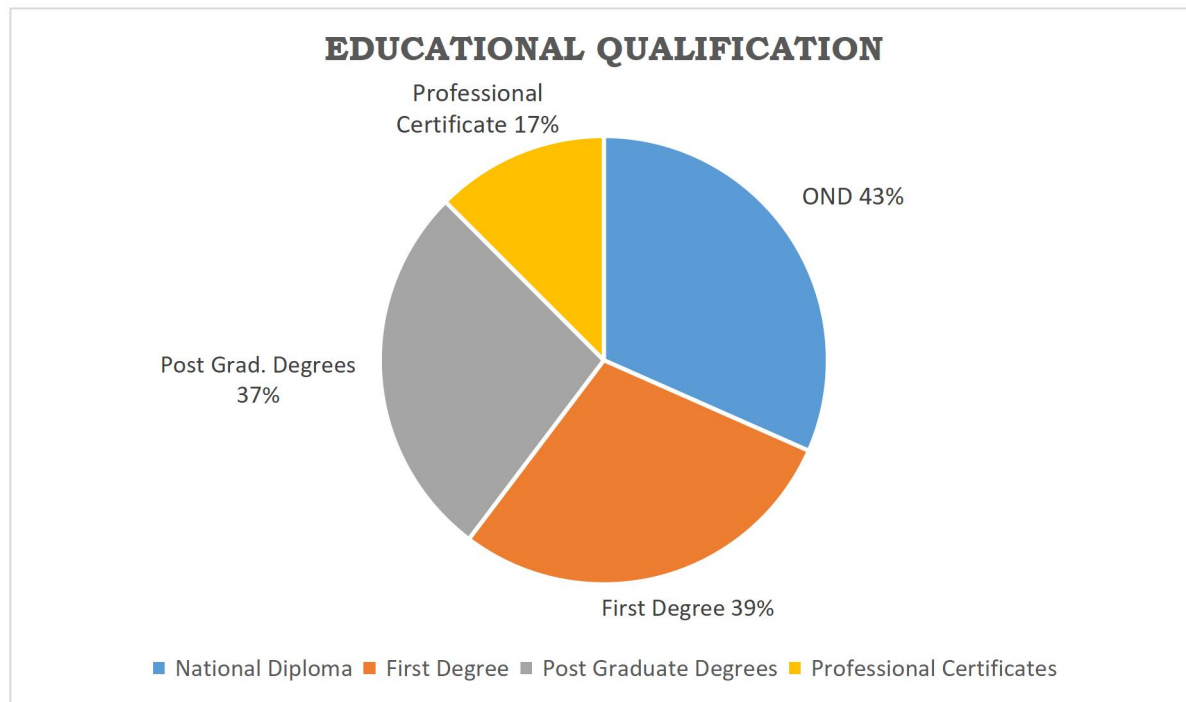


Fig Qualification of Respondents

The data in table 4.4 portrays the educational level and qualification distribution of the respondents. From the results above, 43 respondents indicating 31.6 percent of the respondents were OND/Diploma holders, while 39 respondents representing 28.7 percent were First Degree holders, 37 respondents showing 27.2 percent of the respondents hold post graduate degrees while 17 respondents indicating 12.5 percent are holders of professional certifications.

#### Primary Data Analysis

The primary data analysis is characterized by frequency of responses mean and standard deviation

score of the responses on the item on the questionnaire and study variables. In this section, analysis was carried out on individual variables and their measures. Mean scores and standard deviations are also illustrated. The independent variable; Information Technology Infrastructure dimensioned into; Applications, Networks, Databases and Data Warehousing is first analyzed and measured on a 3 item instrument and scaled on a 5 point Likert scale (very low extent -1, low extent -2, moderate extent -3, high extent -4 and very high extent -5).

**Table 4.3: Showing dimensions of Information Technology Infrastructure**

|                    | N   | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|-----|---------|---------|------|----------------|
| Applications       | 136 | 1.00    | 4.00    | 3.83 | 1.016          |
| Networks           | 136 | 1.00    | 4.00    | 3.93 | .696           |
| Databases          | 136 | 1.00    | 4.00    | 3.67 | .944           |
| Data Warehousing   | 136 | 1.00    | 4.00    | 3.74 | .987           |
| Valid N (listwise) | 136 |         |         |      |                |

**Source: Research Data, 2024 (SPSS output, version 23.0)**

Table above illustrates the descriptive statistics for the dimensions of Information Technology Infrastructure which are applications, networks, databases and data warehousing with a mean score of 3.83, 3.93, 3.67,

3.89 and 3.74 respectively. All four dimensions indicate high response rates based on the adoption of a 5 point Likert scale.

**Descriptive Statistics Showing Measures of Sustainability**

**Source: Research Data , 2024 (SPSS output, version**

and scaled on a 5 point Likert scale (very low extent -1, low extent -2, moderate extent -3, high extent -4 and very high extent -5). All measures indicate high

|                    | N   | Minimum | Maximum | Mean   | Std. Deviation |
|--------------------|-----|---------|---------|--------|----------------|
| Adaptability       | 136 | 1.00    | 4.00    | 4.06   | .699           |
| Accessibility      | 136 | 1.00    | 4.00    | 3.8407 | 1.00038        |
| Valid N (listwise) | 136 |         |         |        |                |

**23.0)**

Table above illustrates the summary and descriptive statistics for the measures of sustainability which are adaptability and accessibility with mean scores of 4.06 for adaptability and 3.8407 for accessibility. These were analyzed and measured on a 2 item instrument

response rates based on the adoption of a 5 point Likert scale.

Finally, on the descriptive statistic is the analysis of data on study variables. These are Information Technology Infrastructure and Sustainability.

**Study Variables**

|                                       | N   | Minimum | Maximum | Mean   | Std. Deviation |
|---------------------------------------|-----|---------|---------|--------|----------------|
| Information Technology Infrastructure | 136 | 1.00    | 4.00    | 3.8324 | .72894         |
| Sustainability                        | 136 | 1.00    | 4.00    | 3.9522 | .75575         |
| Valid N (listwise)                    | 136 |         |         |        |                |

**Source: Research Data, 2024 (SPSS output, version 23.0)**

Table 4 illustrates the summary and descriptive statistics for the study variables where information technology infrastructure = 3.8324 and sustainability = 3.9522. All variables have high mean values and agreement rates based on the adoption of a 5 point Likert scale.

### Hypotheses Testing

Table 4.5 Test for hypotheses (1)

| Adaptability |                 | Applications | Networks | Databases | Data Warehousing |
|--------------|-----------------|--------------|----------|-----------|------------------|
| Spearman Rho | Correlation     | .562**       | .889**   | .848**    | .876**           |
| Rank Order   | Coefficient     |              |          |           |                  |
|              | Sig. (2-tailed) | .000         | .009     | .012      | .014             |
| N            |                 | 136          | 136      | 136       | 136              |

Source: SPSS Data output, 2024

Table 4.5 Test for hypotheses (2)

| Accessibility |                 | Applications | Networks | Databases | Data Warehousing |
|---------------|-----------------|--------------|----------|-----------|------------------|
| Spearman Rho  | Correlation     | .562**       | .899**   | .868**    | .983**           |
| Rank Order    | Coefficient     |              |          |           |                  |
|               | Sig. (2-tailed) | .012         | .009     | .018      | .016             |
| N             |                 | 136          | 136      | 136       | 136              |

Source: SPSS Data output, 2024

**Ho<sub>1</sub>:** There is no significant relationship between applications and adaptability of virtual organizations in Port Harcourt, Rivers State.

**First Finding:** From the result in the table above, the correlation coefficient (rho) shows that there is a significant and positive relationship between applications and adaptability of virtual organizations. The *correlation coefficient* = 0.562 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.000 ( $p < 0.05$ ). The correlation coefficient represents a moderate correlation between the variables. Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**Ho<sub>2</sub>:** There is no significant relationship between applications and accessibility of virtual organizations in Port Harcourt, Rivers State.

This section involves the testing of all previous hypothesized bivariate relationships at a 95% confidence interval implying a significant level of 0.05, acceptance or rejection relative to the  $p$  value. The Spearman correlation coefficient statistical tool was adopted in the test for correlations and strength of relations.

**Second Finding:** There is a significant relationship between applications and accessibility of virtual organizations in Port Harcourt where the *correlation coefficient* of 0.562 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.000 ( $p < 0.05$ ). The correlation coefficient represents a moderate correlation between the variables. Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**Ho<sub>3</sub>:** There is no significant relationship between networks and adaptability of virtual organizations in Port Harcourt, Rivers State.

**Third Finding:** There is a significant relationship between networks and adaptability of virtual organizations in Port Harcourt where the *correlation coefficient* of 0.889 confirms the magnitude and strength of this relationship and it is significant at

probability value = 0.009 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**H04:** There is no significant relationship between networks and accessibility of virtual organizations in Port Harcourt, Rivers State.

**Fourth Finding:** There is a significant relationship between networks and accessibility of virtual organizations in Port Harcourt where the *correlation* coefficient of 0.899 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.009 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**H05:** There is no significant relationship between databases and adaptability of virtual organizations in Port Harcourt, Rivers State.

**Fifth Finding:** There is a significant relationship between databases and adaptability of virtual organizations in Port Harcourt where the *correlation* coefficient of 0.848 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.012 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**H06:** There is no significant relationship between databases and accessibility of virtual organizations in Port Harcourt, Rivers State.

**Sixth Finding:** There is a significant relationship between database and accessibility of virtual organizations in Port Harcourt where the *correlation* coefficient of 0.868 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.018 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**H07:** There is no significant relationship between data warehousing and adaptability of virtual organizations in Port Harcourt, Rivers State.

**7<sup>th</sup> Finding:** There is a significant relationship between data warehousing and adaptability of virtual organizations in Port Harcourt where the *correlation* coefficient of 0.848 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.012 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

**H08:** There is no significant relationship between data warehousing and accessibility of virtual organizations in Port Harcourt, Rivers State.

**Eight Finding:** There is a significant relationship between data warehousing and accessibility of virtual organizations in Port Harcourt where the *correlation* coefficient of 0.868 confirms the magnitude and strength of this relationship and it is significant at probability value = 0.018 ( $p < 0.05$ ). Therefore, we reject the null hypothesis. Decision is based on the  $p < 0.05$  coefficient of significance.

## Summary, Conclusions and Recommendations

This chapter presents a summary of the findings, conclusions and finally makes recommendations in respect of future study.

### Summary of Findings

The aim of this study was to assess the relationship between information technology infrastructure and sustainability of virtual organizations in Port Harcourt, Rivers State. The study was operationalized with the independent variable as information technology infrastructure with the following dimensions: applications, networks, databases and data warehousing, while the dependent variable was sustainability with adaptability and accessibility as measures.

The outcome of the descriptive and inferential analysis revealed the following;

15. There is a moderate and positive relationship between applications and the sustainability of virtual organizations in Port Harcourt, Rivers State.
16. There is a moderate and positive relationship between networks and the sustainability of virtual organizations in Port Harcourt, Rivers State.
17. There is a significant relationship between database and the sustainability of virtual organizations in Port Harcourt, Rivers State.
4. There is a significant relationship between data warehousing and the sustainability of virtual organizations in Port Harcourt, Rivers State.

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### Conclusions

The study concludes that information technology infrastructure positively enhances the sustainability of virtual organizations in Rivers State. In line with the specific objectives the following conclusions emerged: Applications moderately enhance the sustainability of virtual organizations in Rivers State, Nigeria. Also, network positively enhances the sustainability of virtual organizations in Rivers State. Again, databases positively enhance the sustainability of virtual organizations in Rivers State. Furthermore, data warehousing positively enhances the sustainability of virtual organizations in Rivers State.

### Recommendations

Management of virtual organization in Rivers State should implement the utilization of relevant applications in order to enhance the sustainability of virtual organizations.

Leaders of virtual organizations should invest heavily on the acquisition of networks so as to drive the sustainability of virtual organizations.

Management of virtual organizations should integrate their databases in order to enhance administrative efficiency of virtual organizations in Rivers State.

They are also encouraged to adopt data warehousing as a strategy for reporting and presentation, so as to make smarter and intelligent business decision

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## Effect of Public-Private Partnerships Expenditure on Economic Development: A Vector Autoregressive (VAR) Approach

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### Abstract

*This study examines the effects of Public-Private Partnerships (PPPs) expenditure on road (PERI) and electricity infrastructure (PEEI) on Nigeria's economic growth process, proxy by real gross domestic product (RGDP), from 2000 to 2024. An unrestricted Vector Autoregressive (VAR) and Vector Error Correction (VEC) models were adopted to forecast the short and long run dynamic relationships between the multiple time series variables. The Augmented Dickey Fuller (ADF) unit root test was conducted to determine the stationarity of the series while the Johansen cointegration test was used to determine the long run relationship of the series. The findings show that real gross domestic product was positively related to public-private partnership expenditure on road infrastructure but not statistically significant in explaining changes in public-private partnership expenditure on road infrastructure. Public-private partnership expenditure on electricity infrastructure was positive but not statistically significant in explaining changes in public-private partnership expenditure on road infrastructure. However, real gross domestic product was negative and not statistically significant in explaining changes in public-private partnership expenditure on electricity infrastructure. The study recommended a more holistic, diverse and innovative financing models, digitized project management and regulatory process and strategic plans that embraces communities and stakeholders in order to promote a culture of shared responsibility for infrastructure.*

**Keywords:** *Pblic-Private Partnerships, Road Infrastructure, Electricity Infrastructure, Economic Growth, Vector Autoregressive, Nigeria*

### Introduction

The importance of infrastructure to economic growth cannot be overemphasized. This is because infrastructure forms the pillar or backbone of every society and economies, promoting daily life by providing essential services like clean water, education, energy, healthcare, sanitation, internet and transportation (Mienye et al., 2024). Good and sustainable infrastructure investment promote economic growth through increased job creation, efficiency, productivity and reduction in social and economic inequalities by improving access to business

opportunities, facilitating the movement of goods and services and supporting supply chains and hence, alleviates poverty (Zeng et al., 2024). Modern and well maintained infrastructure enhances quality of life and safety through well-lit streets and sidewalks, which reduces risk and promotes public safety, which are pre requisite for human wellbeing (Zahnow, 2024). Infrastructure also provides resilience against challenges like natural disasters and climate change, enhancing continuity and enabling sustainable growth and development for every nation (Ma et al., 2023). Furthermore, a robust and viable infrastructure

framework puts a country in a better competitive position, attracting both local and foreign investment and fostering innovations which are major drivers of growth and development (Danja & Wang, 2024). Investment in modern and sustainable infrastructure, like constant and affordable power supply, good roads and effective internet services, can potentially reduce the cost of doing business in the country, make cheaper goods and services available and hence reduce inflation, a core macroeconomic objective of every economy (Olabi et al., 2023).

In relation to the importance of infrastructure to the viability of the economy, the Nigerian government participates in infrastructure development through direct budget investment, establishment of regulatory bodies like the Infrastructure Concession Regulatory Commission (ICRC), and the utilizing Public-Private Partnerships (PPPs) to bridge the infrastructure deficits in the country (Kadiri et al., 2015). Through direct budgetary investment, the government finances infrastructure through direct budget spending from the federal, state and local government revenue (Bao et al., 2024). Through regulatory frameworks, like the ICRC, the government ensures that the policies, rules and purpose of the infrastructure development process are achieved and maintained (Azubuike et al., 2023). The government sometimes partners with the private sector to finance and develop infrastructure projects in a bid to addressing the infrastructure deficiency and inequalities which has been a bane to sustainable growth and development in Nigeria (Olujobi et al., 2023). In the same to address the deficit, the government created the Nigeria Infrastructure Fund (NIF), with the aim of attracting local and foreign investments into domestic infrastructure projects across Nigeria, with focus on education; healthcare; power generation, transmission and renewable energy projects; road construction, expansion, and an Aviation Leasing Company and a National Carrier, through Public-Private Partnerships (PPPs) (Shao et al., 2025).

Private Sector Participation (PSP) in the Nigeria infrastructure development has usually been in PPPs and other models, with significant involvement in energy, education, healthcare, ports, transportation and solid waste management, with the aim of leveraging private sector efficiency and capital for projects completion and quality service delivery (Olukanni & Nwafor, 2019). The national PPPs policy and other supportive legislations that ensure the successful completion of projects faces challenges like political influence, unclear contract terms and regulatory weakness, especially in energy and water (Bagenda & Ndevu, 2024). Another key mechanism of Private Sector Participation (PSP) other than PPPs is the Concession Agreement (CA). A good example is the

Build-Operate-Transfer (BOT) model, a common Public-Private Partnership (PPP) arrangement located at the Lagos Murtala Mohammed International Airport Terminal 2 (MMA2), built and operated by a private company, but later transferred ownership and control to the Nigerian government. Filling the infrastructure gap, improving efficiency and innovations through cutting-edge technology and efficient management techniques and the need to stimulate economic growth and development, are some of the drivers of Private Sector Participation (PSP) in infrastructure development in Nigeria (Diugwu et al., 2015).

Despite huge investment on infrastructure development through PPPs, Nigeria still wallow in severe infrastructure deficit which has adverse effects on her economic growth and development process across sectors like housing, power, healthcare and roads (Onwuemeka et al., 2022). With a huge gap estimated to require trillions of naira in infrastructure investment and a projected population of about 400 million in 2050, does Nigeria have the appropriate plans, resources, technology and strategies to bridge the infrastructure deficit gap and enhance the resilience and inclusivity of the infrastructure network? For instance, as at 2024, about 80% of Nigeria's road networks are in poor state, hindering effective connectivity, production and economic growth (Wudad et al., 2024). There is a significant housing deficit, with a shortage of about 28 million housing units in Nigeria, representing the urgent need to provide adequate shelter for the growing population, especially in urban areas (Ezeanah, 2022). Reports between 2024 and 2025 revealed that about 59.5% to 61% of the Nigerian population has access to electricity supply (World Bank, 2025). However, the national electricity grid is highly unreliable with rising electricity demand from population pressure, causing its numerous collapses (Golobish et al., 2025). Furthermore, a substantial deficit exist in clean water supply and sanitation infrastructure with 70% having access to basic drinking water services and only 44% use basic sanitation services (Isukuru et al., 2024). Nigeria's performance in the Global Innovation Index (GII), the primary global innovation index, has generally shown poor performance with a poor ranking, within the bottom 10 countries, of 123<sup>rd</sup> in 2024 (Duarte & Carvalho, 2025). Nigeria's oil pipeline infrastructure faces significant challenges despite government and private sector efforts to sustain its operations and functions (Shao et al., 2025). These challenges include pipeline vandalism, crude theft, and damage which leads to huge financial loss and the effective implementation of surveillance programs to reduce environmental pollution (Bello & Nwaeke, 2023).

## Objectives of the Study

The broad objective of this study is to examine the effects of Public-Private Partnership (PPP) expenditure on infrastructure development on economic growth of Nigeria from 2000 to 2024.

The specific objectives include to:

- i. establish the effects of Public-Private Partnership expenditure on road infrastructure development on real gross domestic product of Nigeria.
- ii. investigate the effects of Public-Private Partnership expenditure on electricity infrastructure development on real gross domestic product of Nigeria

## Research Questions

- i. What are the effects of Public-Private Partnership expenditure on road infrastructure development on real gross domestic product of Nigeria?
- ii. What effects has Public-Private Partnership expenditure on electricity infrastructure development has on real gross domestic product of Nigeria?

## Research Hypotheses

H<sub>01</sub>: There is no significant relationship between Public-Private Partnership expenditure on road infrastructure development and real gross domestic product of Nigeria.

H<sub>02</sub>: There is no significant relationship between Public-Private Partnership expenditure on electricity infrastructure development and real gross domestic product of Nigeria.

## Review of Related Literature

### Conceptual Review

#### Infrastructure and its Importance

In its literal sense, infrastructures are those fundamental facilities in an economy that facilitates the operations of the economy and are usually non-excludable (Fourie, 2006). The term "infrastructure" comes from Latin *infra* meaning "below," reflecting its role as the underlying framework upon which societies and economies are built. The words "infra" and "structure" are combined to form the word which refers to an interrelated collection of components that support an economy's structure towards achieving government fundamental macroeconomic goals and objectives (Ifoghere & Olele, 2024). The word infrastructure is used to describe permanent installations that are utilized for a long period of time, with the purpose of adding value to human existence and the economy in general (Du et al., 2022). Although the phrase has many different meanings in different sectors, it is most commonly used to refer to the fundamental infrastructure and systems that support a nation, city, or region, such as transportation and communication networks, water and power lines, schools, hospitals, etc. Infrastructure is also seen as the structural components

that enable and sustain production in order to lower production costs and, eventually, prices (Akomolehin et al., 2025). The study of Große (2023) defines infrastructure as an underlying base or supporting framework, as well as the facilities, tools, and services required for a nation, community, or organization to thrive and function optimally.

Furthermore, infrastructure is the foundational physical and organizational systems that support a country, city, or society's daily functioning and economic growth. It includes hard infrastructure, which are tangible assets like roads, bridges, airports, water supply, electrical grids, and telecommunications networks (Weijnen & Correljé, 2021). It also includes soft infrastructure, which are institutions and services such as education, healthcare, law enforcement, prison services and financial systems that maintain social and economic wellbeing (Kruk et al., 2018). These systems provide sustainable transportation, clean water access, communication, energy distribution, waste management, and public safety, which are essential for human wellbeing and economic growth (Wang et al., 2024). Investment in infrastructure drives economic development, creates jobs, reduces supply chain disruptions, and improves quality of life worldwide (Avorkeh et al., 2024).

Nigeria faces a massive infrastructure deficit, with current infrastructure stock at only 30% of GDP—less than half the 70% international benchmark (Ebehung & Ogar, 2025). To close this gap and support a population projected to reach 400 million by 2050, Nigeria needs an estimated \$2.3 to \$3 trillion in infrastructure investment by mid-century (Riahi et al., 2023). Key sectors requiring urgent development include energy (\$759B), transport (\$575B), housing (28 million-unit deficit), and digital infrastructure (Shao et al., 2025). Government funding is constrained by a low revenue-to-GDP ratio (~7%), making private sector participation and innovative financing models essential (Fay et al., 2021). Initiatives like the National Integrated Infrastructure Master Plan and Presidential Infrastructure Development Fund are underway but require accelerated support and investment. Closing Nigeria's infrastructure gap is critical to unlocking economic potential, improving quality of life, and ensuring sustainable development for future generations (Shao et al., 2025).

#### Road Infrastructure and its Importance

Road infrastructure refers to the entire network of fixed physical structures designed to facilitate the movement of people and goods, including roads, tunnels, bridges, and associated facilities like parking areas and interchanges (Afrin & Yodo, 2020). This essential public works system enables transportation, supports economic development, and underpins societal well-

being by ensuring efficient and safe travel from one geographical location to another (Kaiser & Barstow, 2022). Road infrastructure comprises two main categories of components: the road structure (subgrade, sub-base, base, and surface layers) and roadway elements (carriageway, shoulders, curbs, medians, and drainage systems). The roadways are the physical pathways such as national highways (Trunk A Road), state highways (Trunk B Road) and local feeder roads (Trunk C) managed by the local governments (Odehale, 2020). The bridges and tunnels are structures that are built to overcome obstacles like traffic jam, valleys, rivers or other roadways to maintain a continuous path. The interchanges are the complex structures that permit vehicles to switch from one road to another, improving connectivity and traffic. Ancillary facilities are component of road infrastructure that supports road use, including rest stops, parking lots, and terminals for public transportation like bus stops. These components work together to provide a durable, safe, and functional surface for traffic, managing loads, and facilitating movement and drainage (Sukur et al., 2023).

### **Electricity Infrastructure and its Importance**

Electricity infrastructure refers to the entire system of networks, facilities and equipment required to generate, transmit and distribute electricity from its source to end-use consumers (Ayamolowo et al., 2019). It includes power plants (e.g., for wind, solar, or fossil fuels), high-voltage sub-stations and transmission lines that transmit power over long distances, and lower-voltage distribution lines that deliver it to homes and businesses. This complex network is essential for human development and economic growth.

Power generation involves those facilities that produce electricity, such as coal-fired, solar power generators, nuclear generators, gas-fired, hydro generators, wind power generators and geothermal generators. Power transmission networks are High-voltage lines, towers, and substations that transmit electricity from power plants to substations located closer to consumers. This is done at high voltages to minimize energy loss over long distances. Power distribution refers to the network of lower-voltage lines, transformers, and feeder lines that branch out from substations to deliver electricity directly to homes, businesses, and industrial users, while the supporting structures are the foundations, poles, wires, and associated equipment necessary to support the generation, transmission, and distribution systems.

Electricity infrastructure is crucial to every nation development process because it serves as an economic and social foundation through the provision of the fundamental power required for economic activities, domestic and industrial processes (Shi et al., 2025).

Furthermore, electricity is required for the crucial operation of all other private and public services, like water systems, telecommunications, healthcare, education and transportation (Ukoba et al., 2024). Every society's electricity infrastructure must adapt to increasing demand, as it grows and integrates renewable energy sources, shifting towards a more flexible and distributed system (Nwagu et al., 2025)

### **Empirical Literature**

The study of Ifoghere & Olele (2024) examined the effects of public sector investment on infrastructure and Gross Domestic Product (GDP) growth using the PSS Autoregressive Distributed Lag Model (ARDL) techniques to focus on the causality between the related variables and found a positive long run relationship between public sector investment in infrastructure, fixed capital stock and GDP growth. The study of Nedozi et al., (2024) investigated the link between real gross domestic product (RGDP) and water infrastructure in Nigeria, using a multivariate cointegration model. The model established a long term interaction between the included variables and concluded that an indirect relationship exist between RGDP and water infrastructure stock, with growing infrastructure stock stimulating fixed capital investment and raising RGDP. Zhang & Cheng (2023) examined the effects of public infrastructure on economic growth, using real gross domestic product as proxy for growth. The core findings of the study revealed that electricity generation have direct influence on real GDP, with an elasticity of 0.2. This means that a percentage increase in electricity generation capacity will directly increase the RGDP by 0.2%. However, some of the results are not robust to replace the total road length by other selected infrastructure measures. The control for property rights was further introduced to test for institutional roles in the infrastructure-growth relationship. Incorporating this control preserves the indirect relationship through fixed capital stock while also revealing a strong positive direct association with elasticity ranging from 0.4 to 0.5. (Du et al., 2022) investigated the impact of economic and social infrastructure and tests the causality direction using the PSS ARDL technique and the existing relationship between private investment, infrastructure indicators and Gross Value Added (GVA). The study adopted the Vector Error Correction Model (VECM). The study revealed that social infrastructure influences private investment, economic infrastructure and GVA using physical measures of social and economic infrastructure that were built from classrooms and road data respectively. Adeniyi (2021) reported an ambiguous causal relationship between economic infrastructure, GVA and private investment. The study adopted the VECM model to establish the

influence of social infrastructure expenditure and private spending on GVA, with an elasticity of 0.06 and 0.02 respectively and found positive relationship between infrastructure growth and GVA. The study further tested for the probability of non-linear relationship that government expenditure on infrastructure initially boosts economic growth. The major findings revealed the existence of a positive relationship for economic and social infrastructure for investment in infrastructure in South Africa.

Particularly for Nigeria, several studies on government spending on infrastructure have emphasized on the rising tendency of public spending at the federal and state levels (Chiadika & Egbon 2024; Babatunde 2018; Okunlola et al., 2024). Others adopted the traditional Ordinary Least Square (OLS) estimation techniques to evaluate the effects of government spending on infrastructure on economic growth and find positive indicators (Onabote et al., 2023; Ahamba et al., 2024). However, little or no study has examined the aggregated and disaggregated effects of the core infrastructure development on real gross domestic product in Nigeria. Furthermore, literature on Public-Private Partnerships (PPPs) on infrastructure development as it influences Nigeria's economic growth process is scarce. Hence, this study aims to bridge the lacunae with policy implications.

It is not possible to overstate the importance and roles of infrastructure in a country's growth process. This study's examines the effects of Public-Private Partnerships (PPPs) on infrastructure development and economic growth, using a Vector Autoregressive approach that will support wise policy decisions.

### Theoretical Framework

Infrastructure development theories examine how public and private investments in essential facilities, like roads, electricity, telecommunication, water and sanitation systems, drive social and economic progress by reducing cost of doing business, attracting both local and foreign investments and boosting productivity (Javid, 2019). This paper modifies the Infrastructure-Led Development Theory (ILDT) which emphasized that public spending on infrastructure triggers positive multiplier effects, enhances labour mobility and market access, which in turn promotes industrial growth and economic growth (Du et al., 2022). The theory also highlights infrastructure interactions with other sectors of the Nigerian economy, such as education, electricity, telecommunication, health water and sanitation, to create virtuous cycles of growth and development in Nigeria (Ebehung & Ogar, 2025).

## Research Methodology

### Nature and Sources of Data

Time series data on Public-Private Expenditure on Road Infrastructure (PERI), Public-Private Expenditure on Electricity Infrastructure (PEEI) and Real Gross Domestic Product (RGDP) for Nigeria, were sourced from the World Bank Development Indicator (WDI) and Central Bank of Nigeria (CBN) Statistical Bulletin from 2000 to 2024. PERI is measured using the Road Infrastructure Index (RII), a metric that assesses the quality and extent of Nigeria's road network, and calculated using data from the total road network as percentage to total land areas. PEEI is measured using the Global Electricity Development Index (GEDI), while RGDP is measured at constant price for inflation.

### Methods of Data Analysis

The descriptive statistics conducted establish the normal distribution of the series around their mean. The Augmented Dickey Fuller (ADF) unit root test established the order of integration while the Johansen cointegration test established the long run relationship of the variables. The unrestricted Vector autoregressive (VAR) model established the dynamic relationships between the included variables. The VAR model permits the collective dynamic behaviour of time series variables without restrictions (Antonakakis et al., 2020). Our specified models contain 3 variables, expressed as a function of 3 lags of each variable plus a stochastic term ( $v_t$ ). The variance decomposition tests quantify how much of the forecast error variance of the variables are explained by their own past shocks in relation to shocks to other variables in our model. The speed of adjustment to equilibrium of the variables from shocks, in the long run, was established through the Vector Error Correction (VEC) estimation. Diagnostic tests, like the VAR residual correlation LM test, were conducted to establish the absence of autocorrelation in our models.

### Model Specifications

The VAR model is specified as:

$$\begin{aligned} \text{RGDP}_t = & \beta_0 + \beta_1 \text{RGDP}_{t-1} + \beta_2 \text{RGDP}_{t-2} + \beta_3 \text{RGDP}_{t-3} \\ & + \beta_{21} \text{PERI}_{t-1} + \beta_{22} \text{PERI}_{t-2} + \beta_{23} \text{PERI}_{t-3} \\ & + \beta_{31} \text{PEEI}_{t-1} + \beta_{32} \text{PEEI}_{t-2} + \beta_{33} \text{PEEI}_{t-3} + v_t \end{aligned} \quad (1)$$

$$\begin{aligned} \text{PERI}_t = & \beta_0 + \beta_1 \text{PERI}_{t-1} + \beta_2 \text{PERI}_{t-2} + \beta_3 \text{PERI}_{t-3} + \\ & \beta_{21} \text{PEEI}_{t-1} + \beta_{22} \text{PEEI}_{t-2} + \beta_{23} \text{PEEI}_{t-3} + \beta_{31} \\ & \text{RGDP}_{t-1} + \beta_{32} \text{RGDP}_{t-2} + \beta_{33} \text{RGDP}_{t-3} + v_t \end{aligned} \quad (2)$$

$$\begin{aligned} \text{PEEI}_t = & \beta_0 + \beta_1 \text{PEEI}_{t-1} + \beta_2 \text{PEEI}_{t-2} + \beta_3 \text{PEEI}_{t-3} + \\ & \beta_{21} \text{PERI}_{t-1} + \beta_{22} \text{PERI}_{t-2} + \beta_{23} \text{PERI}_{t-3} + \\ & \beta_{31} \text{RGDP}_{t-1} + \beta_{32} \text{RGDP}_{t-2} + \beta_{33} \text{RGDP}_{t-3} + v_t \end{aligned} \quad (3)$$

RGDP = Real Gross Domestic Product

PERI = Public-Private Expenditure on Road Infrastructure Development

PEEI = Public-Private Expenditure on Electricity Infrastructure Development

$\beta$  and  $v_t$  represent the variable parameters and stochastic term, respectively.

The above specification is plausible, with the variables *a priori* stationary and ergodic. The error term  $v_t$  represents the parts of RGDP, PERI and PEEI not captured by or related to the past values of the variables.

## Results and Discussion

### Descriptive Statistics

Descriptive statistics presents a more precise idea of the distribution of the variables and examined the mean, median, maximum values, minimum values, standard deviation, skewness, kurtosis and Jarque-Bera statistic. Table 1 presents the descriptive statistic.

Table 1: Summary of Descriptive Statistics

|               | PERI      | PEEI      | RGDP      |
|---------------|-----------|-----------|-----------|
| Mean          | 50.76101  | 58.07701  | 75.39431  |
| Median        | 51.121211 | 59.31111  | 76.82111  |
| Maximum       | 61.00000  | 64.20000  | 86.98000  |
| Minimum       | 41.00000  | 50.70000  | 62.31000  |
| Standard Dev. | 4.895439  | 3.969192  | 7.298831  |
| Skewness      | -0.265634 | -0.453947 | -0.462431 |
| Kurtosis      | 2.978931  | 2.815668  | 2.798075  |
| Jarque-Bera   | 0.697199  | 1.826751  | 1.361933  |
| Probability   | 0.519715  | 0.401279  | 0.506128  |
| Sum           | 1269.000  | 1451.900  | 1884.830  |
| Sum Sq. Dev.  | 572.5600  | 376.1856  | 1274.661  |
| Observations  | 25        | 25        | 25        |

Source: Author's Computation

In table 1, the mean values of PERI, PEEI and RGDP are 50.76, 58.077 and 75.39 respectively. The mean of RGDP is higher but statistically not significant in influencing public-private partnership expenditure on road infrastructure development (PERI) and electricity infrastructure development (PEEI). The minimum and maximum values show that there are no data-entry error and outliers in the data. A comparison between PERI, PEEI and RGDP revealed that the data are normally distributed. The standard deviation values of 4.895439, 3.969192 and 7.298831 for PERI, PEEI and RGDP respectively show that the data are normally distributed from their respective means. The skewness is a measure of the asymmetry of the distribution of

variables around the mean. The skewness values of -0.265634, -0.453947 and -0.462431 for PERI, PEEI and RGDP respectively show that the data are normally distributed and skewed around their respective means. The kurtosis is a measure of the peakedness or flatness of the distribution. From table 1 the kurtosis values are close to 3, which imply the series are normally distributed around their means. Furthermore, the respective probability values are less than the respective Jarque-Bera values, which imply that the series are normally distributed around their means.

### Unit Root Test

The unit root test results are reported in tables 2a and 2b at level and first difference respectively.

Table 2a: Augmented Dickey Fuller (ADF) Summary of Unit Root Test Results

| Variables | ADF Test Statistics (At level) | Mackinnon Critical Values |         |         | Prob. (values) | Remark         |
|-----------|--------------------------------|---------------------------|---------|---------|----------------|----------------|
|           |                                | 1%                        | 5%      | 10%     |                |                |
| PERI      | -4.0799                        | -3.8388                   | -2.9929 | -2.6366 | 0.0047         | Stationary     |
| PEEI      | -5.1780                        | -3.8388                   | -2.9929 | -2.6366 | 0.0004         | Stationary     |
| RGDP      | -1.9397                        | -3.8388                   | -2.9929 | -2.6366 | 0.3534         | Not Stationary |

Source: Author's Computation

The unit root results presented in table 2a show that PERI and PEEI are both stationary at level because their respective probability values are lower than 0.05 and the absolute values of their test statistics are higher

than their critical values at 1%, 5% and 10% respectively. However, RGDP is not stationary at level because the probability value of 0.3534 is greater than 0.05 and the absolute value of the test statistic is lower



than the critical values at 1%, 5% and 10%. Table 2b presents the 1<sup>st</sup> difference of the unit root results.

**Table 2b: Augmented Dickey Fuller (ADF) Summary of Unit Root Test Results**

| Variables | ADF Test Statistics (1 <sup>st</sup> Diff.) | Mackinnon Critical Values |         |         | Prob. (values) | Remark     |
|-----------|---------------------------------------------|---------------------------|---------|---------|----------------|------------|
|           |                                             | 1%                        | 5%      | 10%     |                |            |
| PERI      | -4.9979                                     | -4.5436                   | -3.6847 | -3.3784 | 0.0041         | Stationary |
| PEEI      | -8.8877                                     | -4.4163                   | -3.6321 | -3.3586 | 0.0000         | Stationary |
| RGDP      | -2.3123                                     | -2.6968                   | -1.9691 | -1.6175 | 0.0351         | Stationary |

Source: Author's Computation

At 1<sup>st</sup> difference PERI, PEEI and RGDP are stationary because their respective probability values of 0.0041, 0.0000 and 0.0351 are less than 0.05. Furthermore, the absolute values of their respective test statistics are greater than their critical values at 5% and 10%. These conditions satisfy the application of the Johansen cointegration test.

#### Johansen Cointegration Test

#### Long Run Effects of Public-Private Partnership Expenditure on Road (PERI) and Electricity (PEEI) Infrastructure on Real Gross Domestic Product (RGDP)

**Table 3a: Unrestricted Cointegration Rank Test (Trace)**

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Values | Prob ** |
|---------------------------|------------|-----------------|----------------------|---------|
| None *                    | 0.548274   | 35.49641        | 29.79808             | 0.0098  |
| At Most 1 *               | 0.355213   | 17.72742        | 15.49572             | 0.0237  |
| At Most 2 *               | 0.294522   | 7.992631        | 3.842466             | 0.0057  |

Trace test indicates 3 cointegration eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

**Table 3b: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**

| Hypothesized No. of CE(s) | Eigenvalue | Max. Eigen Statistic | 0.05 Critical Values | Prob. ** |
|---------------------------|------------|----------------------|----------------------|----------|
| None *                    | 0.539274   | 17.77999             | 21.13263             | 0.1397   |
| At Most 1 *               | 0.355213   | 9.736696             | 14.26561             | 0.2290   |
| At Most 2 *               | 0.294531   | 7.991622             | 3.842476             | 0.0048   |

Max-eigenvalue test indicates no cointegration eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

Results from the Johansen cointegration test show the existence of a long run relationship between PERI, RGDP and PEEI. The unrestricted cointegration rank test (table 3a) revealed that the trace statistic (35.49641, 17.72742 and 7.992631) exceed the respective critical values (29.79808, 15.49572 and 3.842466) at 5% level of significance. This indicates 3 cointegrating equations with respective probability values of 0.0098, 0.0237 and 0.0057 (less than 0.05) at 5% significant level. The values of the maximum Eigen statistic corroborate the trace statistic values of 3 cointegrating

equations. This implies the absence of a full rank because subtracting the number of cointegrating equations from the number of variables (PERI, RGDP and PEEI) is not equal to 0. This suggests that a linear combination of PERI, RGDP and PEEI is stationary, implying a long run equilibrium relationship among the variables. This further implies that the model is good and in functional form. The positive value of the log-likelihood indicates the absence of multicollinearity. These conditions satisfy the application of the VAR estimation to estimate the models parameters. Table 4 presents the VAR estimates of the variables

Table 4: Vector Autoregressive Estimates

|                | RGDP                                  | PERI                                 | PEEI                                  |
|----------------|---------------------------------------|--------------------------------------|---------------------------------------|
| RGDP(-1)       | 0.553299*<br>(1.23887)<br>[2.31590]   | 0.266105<br>(0.26297)<br>[1.01191]   | 0.405660<br>(0.32517)<br>[1.24753]    |
| RGDP(-2)       | 0.396532<br>(0.23846)<br>[1.66290]    | 0.029780<br>(0.26252)<br>[0.11344]   | -0.692288*<br>(0.32460)<br>[-2.13272] |
| PERI(-1)       | -0.335560*<br>(0.14651)<br>[-2.29029] | 0.372944*<br>(0.16130)<br>[2.31218]  | 0.327290<br>(0.19944)<br>[1.64101]    |
| PERI(-2)       | -0.095358<br>(0.13515)<br>[-0.70558]  | 0.215890<br>(0.14878)<br>[1.45103]   | -0.029273<br>(0.18397)<br>[-0.15912]  |
| PEEI(-1)       | 0.024069<br>(0.16581)<br>[0.14516]    | 0.090965<br>(0.18254)<br>[0.49834]   | -0.278764<br>(0.22571)<br>[-1.23506]  |
| PEEI(-2)       | 0.203582<br>(0.18113)<br>[1.12393]    | 0.096300<br>(0.19941)<br>[0.48293]   | -0.258529<br>(0.24657)<br>[-1.04850]  |
| C              | 13.33380<br>(21.3408)<br>[0.62480]    | -12.40329<br>(23.4938)<br>[-0.52794] | 95.07914*<br>(29.0504)<br>[3.27290]   |
| R-squared      | 0.876482                              | 0.620892                             | 0.367099                              |
| Adj. R-squared | 0.830163                              | 0.478727                             | 0.129760                              |
| Sum sq. resids | 116.1471                              | 140.7643                             | 215.2239                              |
| S.E equation   | 2.694289                              | 2.966104                             | 3.667628                              |
| F-statistic    | 18.92262                              | 4.367395                             | 1.546733                              |
| Log likelihood | -51.25827                             | -53.46890                            | -58.35171                             |

\* denotes rejection of the hypothesis at the 0.05 significance level

Source: Author's Computation, 2025

From model 1, the Vector autoregressive (VAR) estimates show that real gross domestic product in the previous period, RGDP(-1) and expenditure on road infrastructure in the previous period, PERI (-1) are statistically significant in explaining changes in real gross domestic product in the current period (RGDP<sub>t</sub>), with probability values less than 0.05. However, the other lag values of RGDP, PERI and PEEI are not statistically significant in explaining changes in RGDP for the current period. The coefficient of RGDP (-1) is 0.553299 implying that a 1 percent increase in real gross domestic product in the previous period causes a 55.3 percent increase in real gross domestic product in the current period. However, real gross domestic product in the current period has negative effects on road infrastructure expenditure in the previous period, with a coefficient of -0.335560. This implies that a 1 percent increase in real gross domestic product causes a 33.5 percent decrease in expenditure on road infrastructure in the previous period. The R-squared of 0.876482 implies that an 87.6 percent change in the endogenous variables is explained by the exogenous

variables. It remained strong after the adjustment for degree of freedom as 88 percent (Adjusted R-squared). Durbin Watson statistic of 1.90 implies a model free from autocorrelation.

From model 2, only the previous estimate of expenditure on road infrastructure PERI (-1) is statistically significant in explaining changes in PERI in the current period. However, expenditure on electricity infrastructure at 1 and 2 periods lag, PEEI (-1) and PEEI (-2), are not statistically significant in explaining changes in expenditure on road infrastructure (PERI). With positive coefficients of 0.090965 and 0.096300, a 1 percent increase in PEEI (-1) and PEEI (-2) respectively, brings about a negligible 9 percent increase in PERI in the current period.

From model 3, real gross domestic product at 2 lags period RGDP (-2), with a negative coefficient of -0.692288, is statistically significant in explaining changes in PEEI in the current period. This implies that a 1 percent increase in real gross domestic product brings about a 69 percent decrease in expenditure on electricity infrastructure in Nigeria.

### VAR Variance Decomposition Test

The primary purpose of the variance decomposition test is to determine the degree of the forecast error variance of each endogenous variable is explained by shocks to other variables and to itself in the model.

Thus, it enables us to understand the contributions of each variable to the variability of other variables over time. Using a 5-year forecast period from the short run to the long run, the variance decomposition estimates are presented in tables 5a, 5b and 5c.

Table 5a: Variance Decomposition of RGDP

| Periods | SE       | RGDP     | PERI     | PEEI     |
|---------|----------|----------|----------|----------|
| 1       | 2.694289 | 100.0000 | 0.000000 | 0.000000 |
| 2       | 3.253008 | 90.82342 | 9.105098 | 0.071482 |
| 3       | 3.871991 | 82.82618 | 14.31214 | 2.861682 |
| 4       | 4.312396 | 77.66377 | 20.02866 | 2.307566 |
| 5       | 4.609228 | 71.24483 | 26.84183 | 2.033336 |

Source: Author's Computation

From the results in table 5a, the rows represent the percentage of forecast error variance by RGDP. In the short run, a 100 percent of forecast error variance in RGDP is explained by the variable itself while about 71.24 percent of forecast error variance, on average, is explained in the long run. This implies that RGDP

strongly influences itself from the short to long run and is strongly endogenous in predicting itself. Other variables of the model (PERI and PEEI) do not have strong influence on RGDP. This means that PERI and PEEI, on average, have strong exogenous influence on RGDP both in the short and long run periods.

Table 5b: Variance Decomposition of PERI

| Periods | SE       | RGDP     | PERI     | PEEI     |
|---------|----------|----------|----------|----------|
| 1       | 2.966104 | 0.270104 | 99.72990 | 0.000000 |
| 2       | 3.259514 | 3.920131 | 95.06294 | 1.016931 |
| 3       | 3.497145 | 8.103662 | 89.69104 | 2.205299 |
| 4       | 3.634812 | 13.70077 | 83.77403 | 2.525199 |
| 5       | 3.728654 | 17.61994 | 79.63181 | 2.748248 |

Source: Author's Computation

From the results in table 5b, the rows represent the percentage of forecast error variance by PERI. In the short run, a 99.73 percent of forecast error variance in PERI is explained by the variable itself while about 79.63 percent of forecast error variance, on average, is explained in the long run. This implies that PERI

strongly influences itself from the short to long run and is strongly endogenous in predicting itself. Other variables of the model (RGDP and PEEI) do not have strong influence on PERI. This means that RGDP and PEEI, on average, have strong exogenous influence on PERI both in the short and long run periods.

Table 5c: Variance Decomposition of PEEI

| Periods | SE       | RGDP     | PERI     | PEEI     |
|---------|----------|----------|----------|----------|
| 1       | 3.667628 | 0.966098 | 1.965883 | 97.06802 |
| 2       | 4.056486 | 8.729305 | 5.754472 | 85.51622 |
| 3       | 4.303803 | 16.31149 | 6.311153 | 77.37736 |
| 4       | 4.386892 | 15.74822 | 7.024959 | 77.22682 |
| 5       | 4.421339 | 15.51370 | 7.443710 | 77.04259 |

Source: Author's Computation

From the results in table 5c, the rows represent the percentage of forecast error variance by PEEI. In the short run, a 97.06 percent of forecast error variance in PEEI is explained by the variable itself while about 77.04 percent of forecast error variance, on average, is explained in the long run. This implies that PEEI strongly influences itself from the short to long run and

is strongly endogenous in predicting itself. Other variables of the model (RGDP and PERI) do not have strong influence on PEEI. This means that RGDP and PERI, on average, have strong exogenous influence on PEEI both in the short and long run periods.

### VAR Residual Serial Correlation LM Test

The VAR serial correlation LM tests assess whether the residuals (errors) of the estimated VAR models exhibit

serial correlation or are correlated with their own lag or past values. Table 6 presents the results of the serial correlation LM tests.

**Table 6: VAR Residual Serial Correlation LM Tests**

| Null Hypothesis: No serial correlation at lag h       |           |    |        |            |            |        |
|-------------------------------------------------------|-----------|----|--------|------------|------------|--------|
| Lag                                                   | LRE* stat | df | Prob.  | Rao F-stat | df         | Prob.  |
| 1                                                     | 8.810558  | 9  | 0.4549 | 1.004814   | (9, 26.9)  | 0.4601 |
| 2                                                     | 5.551246  | 9  | 0.7839 | 0.598816   | (9, 26.9)  | 0.7866 |
| 3                                                     | 3.001879  | 9  | 0.9642 | 0.310222   | (9, 26.9)  | 0.9647 |
| Null Hypothesis: No serial correlation at lags 1 to h |           |    |        |            |            |        |
| Lag                                                   | LRE* stat | df | Prob.  | Rao F-stat | df         | Prob.  |
| 1                                                     | 8.810558  | 9  | 0.4549 | 1.004814   | (9, 26.9)  | 0.4601 |
| 2                                                     | 16.39480  | 18 | 0.5650 | 0.890810   | (18, 23.1) | 0.5939 |
| 3                                                     | 51.47386  | 27 | 0.0031 | 3.045213   | (27, 15.2) | 0.0131 |

Source: Author's Computation

The VAR residual serial correlation LM test results in table 6 show that the probability values are all greater than 0.05 which suggest the result is non-significant and hence we accept the null hypothesis of no serial correlation or the absence of serial correlation in the residuals at lags 1, 2 and 3. This also suggests that the models adequately capture the time series dynamics or shocks in the long run. Thus, the VAR model correctly captures the time-dependent relationships in the series. Similarly, the LRE statistic captures the pattern of autocorrelation in the residuals of the model. The LR

statistic is non-significant due to their probability values all greater than 0.05 which implies the absence of serial correlation in our models.

### Vector Error Correction (VEC) Estimation

The primary aim of the Vector Error Correction (VEC) estimates is to present the long-run equilibrium and the short-term dynamic adjustments when the variables deviate from their equilibrium. Table 7 presents the long-run and short-run adjustments of the variables to equilibrium.

**Table 7: Vector Error Correction (VEC) Estimates**

| Cointegrating Eq | CointEq1                             |                                     |                                    |
|------------------|--------------------------------------|-------------------------------------|------------------------------------|
| PERI(-1)         | 1.000000                             |                                     |                                    |
| RGDP(-1)         | -1.199617<br>(0.32565)<br>[-3.68379] |                                     |                                    |
| PEEI(-1)         | -4.042631<br>(0.98498)<br>[-4.10429] |                                     |                                    |
| C                | 274.7776                             |                                     |                                    |
| Error Correction | D(PERI)                              | D(RGDP)                             | D(PEEI)                            |
| CointEq1         | -0.181208<br>(0.10860)<br>[-1.10692] | 0.114015<br>(0.12376)<br>[ 0.92125] | 0.433656<br>(0.15149)<br>[2.86262] |

Source: Author's Computation

The upper segment of table 7 presents the error correction term signifying the long-run cointegrating relationships among the variables, while the lower segment presents the short-run coefficients. The error correction adjustment coefficient of -0.181208 implies that the previous period deviation from the long-run equilibrium is corrected in the current period with an adjustment speed of 18.12 percent. *Ceteris paribus*, in the long-run, a 1 percent change in the previous value of PERI will bring about a 100 percent increase in the error correction term. A 1 percent change in the previous value of the RGDP will cause the error correction term to decrease by 119.9 percent while a 1 percent change in the previous value of PEEI will cause the error correction term to also decrease by 404.2 percent.

## Discussion of the Results/Policy Implications

### Hypothesis One (PERI vs RGDP)

From the results obtained, real gross domestic product (RGDP) was positive and has insignificant impact on public-private partnership expenditure on road infrastructure (PERI). A 1 percent increase in 1 and 2 years lag period of RGDP only increases PERI by 26 and 2.9 percent respectively. This result underscores the declining value of the real gross domestic product due to inflation and internal policy missteps like expensive subsidies for road infrastructure and distorted exchange rate systems adversely influencing loans for road infrastructure in Nigeria (Okunlola et al., 2024).

### Hypotheses Two (PERI vs PEEI)

The result shows public-private partnership expenditure on electricity infrastructure (PEEI) is not significant in explaining changes in public-private partnership expenditure on road infrastructure (PERI). Although positive, a 1 percent increase in PEEI has a negligible effect of 9 percent average increase on PERI. This implies that expenditure on road infrastructure has not significantly influenced expenditure on electricity infrastructure in Nigeria. Road and electricity infrastructure are complementary systems. The former allows for the efficient delivery of materials to build and maintain power grids, while electricity powers the transportation systems and supports businesses that benefit from good roads (Pandiyan et al., 2023).

### Hypotheses Three (PEEI vs RGDP)

The result shows an inverse relationship between public-private partnership expenditure on road infrastructure and real gross domestic product of Nigeria. A 1 percent increase in RGDP, after a 2 period lag, brings about an average of 69.2 percent decrease in PEEI in Nigeria. This outcome reflects government and private sector lack of commitment in strengthening the moribund electricity infrastructure base in Nigeria (Kayode 2023). Despite huge

investment on infrastructure, the state of electricity infrastructure is abysmal. This is due to insufficient investment, aging and vandalized equipment, lack of skilled manpower and poor maintenance culture.

## Conclusions

Public-Private Partnership expenditure on road infrastructure (PERI) is positively related with real gross domestic product (RGDP) in Nigeria. The moribund state of road and electricity infrastructure and rising inflation in Nigeria underscores the declining value of the real gross domestic product. Internal policy missteps like expensive subsidies for road and electricity infrastructure and distorted exchange rate systems have adversely influenced loans for road and electricity infrastructure in Nigeria within the period of study. Investment efforts by the government and private sector on infrastructure development have negligible effects on real gross domestic product due to government and private sectors' lack of commitment, corruption and mismanagement of public-private funds for infrastructure development. Road and electricity infrastructure are complementary systems. The former allows for the efficient delivery of materials to build and maintain power grids, while electricity powers the transportation systems and supports businesses that benefit from good roads.

## Recommendations

- i. To achieve sustainable solutions to the poor road and electricity infrastructure in Nigeria, a more holistic, diverse and innovative financing models, like infrastructure bonds and green bonds, should be adopted to supplement government and private sector financing.
- ii. Project management and regulatory processes should be simplified, digitized. This will permit the reduction in bureaucratic hurdles and expedite project actions.
- iii. The government should create the enabling environment for advanced technologies, digital platforms and smart infrastructure systems to promote project management and improve service delivery of infrastructure facilities. Furthermore, adopting comprehensive regional infrastructure plans that utilize data and mapping technologies will monitor roads and electricity conditions.
- iv. The government should adopt broader policies and community initiatives, through sustainable practices for long-term viability, promote alternative transport systems and make more investments in renewable energy, to reduce the pressure on the road network and power systems respectively. Communities and stakeholders should be engaged in the planning and execution process to ensure projects align with their needs and promotes a culture of shared responsibility for infrastructure.

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## Innovation Management and Performance of Selected Small and Medium Scale Enterprises in Lagos Island

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### Abstract

*This study examines the impact of innovation management on the performance of selected small and medium-scale enterprises (SMEs) in Lagos Island, Nigeria. The research specifically investigates how product, process, marketing, and organizational innovations influence SME performance within a competitive business environment. Using a descriptive survey design, data were collected from SME owners and managers through structured questionnaires. The data were analysed using both descriptive and inferential statistics. The findings reveal that all four dimensions of innovation management significantly and positively affect the performance of SMEs, with marketing and organizational innovations having the strongest influence. The study concludes that effective innovation management practices enhance the competitiveness and sustainability of SMEs. It recommends that SME owners and policymakers should prioritize innovation-driven strategies to improve operational efficiency, market positioning, and overall firm performance.*

**Keywords:** Innovation Management, Product Innovation, Process Innovation, Marketing Innovation, Organizational Innovation, Small and Medium Enterprises (SMEs), Firm Performance,

### Introduction

Small and Medium Enterprises (SMEs) are pivotal to economic growth, employment generation, and poverty alleviation, particularly in developing economies like Nigeria (Ali, 2021; Sokoto & Abdullahi, 2013). Their adaptability and flexibility allow them to thrive in dynamic markets, yet their performance is often hindered by challenges such as limited resources, competition, and inadequate innovation adoption (Bushe, 2019). Innovation, broadly categorized into product, process, marketing, and organizational innovation (OECD, 2005), has been identified as a critical driver of SME performance. Product innovation, which involves enhancing or introducing new goods and services, directly impacts customer satisfaction and sales growth through competitive advantage (Mdoe et al., 2024; Okafor et al., 2024a; Okafor et al., 2024b). Process innovation, on the other hand, improves operational efficiency and product quality, leading to higher profitability (Akgün et al., 2019). Marketing innovation, through strategies like digital outreach and rebranding, expands market reach (Muithya et al., 2021), while organizational innovation fosters

internal efficiencies and adaptability (Polder et al., 2010).

Empirical studies underscore the significance of these innovation types. For instance, Akoma et al., (2023) found that proactive innovation strategies significantly enhance SME performance in Nigeria's manufacturing sector, while Issau et al. (2021) highlighted market innovation as a key predictor of success in Ghanaian SMEs. Similarly, Mdoe et al., (2024) demonstrated that Tanzanian SMEs leveraging product and process innovations reported improved financial returns. Despite these findings, inconsistencies persist in the literature. For example, Waziri et al. (2023) observed that while product and process innovations boosted SME performance in Yobe State, Nigeria, marketing and organizational innovations had negligible effects. Such disparities suggest contextual and methodological gaps, particularly in Nigeria's diverse business environments.

Lagos State, Nigeria's commercial hub, presents an ideal setting for this study. Home to over forty percent of Nigeria's SMEs (SMEDAN, 2021), Lagos offers a vibrant yet competitive ecosystem where

innovation is critical for survival. The state's dense population, infrastructural challenges, and high competition amplify the need for SMEs to adopt innovative practices (Taiwo et al., 2022). However, despite Lagos' economic significance, limited research has explored how innovation management specifically influences SME performance in this region, creating a gap this study aims to fill.

The performance of SMEs in Nigeria remains suboptimal despite their economic importance. Recent data indicate a 3.5% decline in the sector's contribution to GDP (SMEDAN, 2021), with high failure rates, up to forty percent within five years of operation (Awotoye & Singh, 2017). Scholars attribute this to poor innovation adoption, financial constraints, and inefficient management (Bolarinwa & Okolocha, 2016; Jeptoo et al., 2017). While innovation is widely recognized as a performance enhancer (Erjona, 2015; Gil-Garcia et al., 2014), empirical evidence remains inconsistent. For instance, Akoma et al. (2023) found that risk-taking and proactiveness negatively moderated innovation-performance relationships in Ogun State, whereas Ukpabio et al. (2019) reported positive effects of process and organizational innovations in Southwestern Nigeria.

Notably, similar studies have been conducted in other Nigerian regions but not Lagos. Nwankwo and Ezeibe (2021) examined innovation's impact on SMEs in Onitsha, revealing significant financial performance gains, while Waziri et al. (2023) focused on Yobe State, highlighting divergent effects across innovation types. These regional studies emphasise the need for localized insights, as outcomes may vary due to Lagos' unique socio-economic dynamics, including higher competition, regulatory pressures, and infrastructure deficits (Pulka et al., 2021; Mamman & Abuga, 2020).

Therefore, given Lagos status as Nigeria's business epicentre, understanding how innovation management drives SME performance here is critical. This study addresses the gap by investigating the interplay between product, process, marketing, and organizational innovations and the performance of Lagos Island SMEs, offering context-specific recommendations to bolster the sector's sustainability.

#### Aim and Objectives of the Study

The overall aim of this study is to undertake a comprehensive analysis of innovation management and performance of selected SMEs. To achieve this central aim, the following specific objectives were pursued.

- Investigate the relationship between product innovation and performance of selected SMEs.
- Examine the relationship between process innovation and performance of selected SMEs.
- Determine the relationship between marketing innovation and performance of selected SMEs.

- Investigate the relationship between organizational innovation and performance of selected SMEs.

#### Research Hypotheses

Given the above research questions, and objectives, the following hypotheses are formulated:

- i. H<sub>01</sub>: There is no significant relationship between product innovation and performance of selected SMEs.
- ii. H<sub>02</sub>: There is no significant relationship between process innovation and performance of selected SMEs.
- iii. H<sub>03</sub>: There is no significant relationship between marketing innovation and performance of selected SMEs.
- iv. H<sub>04</sub>: There is no significant relationship between organizational innovation and performance of selected SMEs.

#### Literature Review

##### Theoretical Underpinning

##### Schumpeter's Theory of Innovation

Schumpeter's theory of innovation provides a robust theoretical foundation for understanding the critical role of entrepreneurial innovation in driving SME performance and economic development. At its core, Schumpeter (1934) conceptualized innovation as the fundamental mechanism of economic change, with entrepreneurs serving as the key agents who introduce "new combinations" of production factors that disrupt market equilibriums and propel economic progress. This perspective remains highly relevant for contemporary SMEs, particularly in dynamic business environments like Lagos Island, where innovation serves as both a survival strategy and competitive differentiator (Muithya et al., 2021; Kim et al., 2018). Schumpeter identified five distinct forms of innovation that closely align with modern innovation typologies: introducing new products, implementing novel production methods, opening new markets, securing new supply sources, and reorganizing industrial structures (Schumpeter, 1934; Lazzarotti et al., 2011). These innovation types manifest in today's SME sector as product innovation (new or improved offerings), process innovation (enhanced production/delivery methods), marketing innovation (new market approaches), and organizational innovation (business model restructuring), all of which have been empirically linked to improved SME performance (OECD, 2005; Hanaysha et al., 2022b).

The theory's concept of "creative destruction" - where innovation continuously revolutionizes economic structures by rendering previous technologies and systems obsolete - holds particular significance for SMEs in competitive markets (Schumpeter, 1947). This process creates both challenges and opportunities; while established firms may struggle with disruption, agile SMEs can

leverage innovation to gain market share and improve performance metrics such as profitability, market positioning, and operational efficiency (Asad, 2018; Matekenya & Moyo, 2022). Schumpeter's assertion that innovation serves as the primary driver of business profits and economic growth (Schumpeter, 1947) finds support in contemporary research demonstrating positive correlations between various innovation types and SME performance indicators including sales growth, cost reduction, and quality improvement (Abdilahi et al., 2017).

However, the theory's exclusive focus on innovation as the sole determinant of economic progress has been critiqued for overlooking other critical factors that influence SME performance (Gintis, 1990). The innovation-performance relationship is moderated by contextual variables such as access to financing, regulatory environments, institutional support, and market conditions (Tariq et al., 2019; Vittori et al., 2022). This limitation is particularly evident in developing economy contexts like Nigeria, where SME innovation adoption often faces unique constraints including resource limitations, infrastructure deficits, and skills gaps (Waziri et al., 2023). Furthermore, while Schumpeter emphasized radical, discontinuous innovations, contemporary research shows that incremental innovations often yield more sustainable performance improvements for resource-constrained SMEs (Cherrafi et al., 2018; Matekenya & Moyo, 2022).

For Lagos Island SMEs, Schumpeter's theory provides valuable insights but requires contextual adaptation. The region's vibrant yet competitive business ecosystem, characterized by rapid market changes and intense competition, creates ideal conditions for Schumpeterian innovation to flourish (Akoma et al., 2023). However, the theory must be integrated with other perspectives to account for local realities such as informal sector dynamics, infrastructure challenges, and access to innovation-supporting institutions. Recent studies in similar contexts have demonstrated how Schumpeterian innovation principles, when adapted to local conditions, can significantly enhance SME performance through improved product offerings, streamlined processes, and innovative marketing strategies (Waziri et al., 2023; Mdoe et al., 2024). This study builds on Schumpeter's foundational work while incorporating these contextual considerations, offering a more comprehensive framework for understanding innovation-performance dynamics in Lagos Island's unique SME sector.

### Empirical Literature Review

Innovation management has been widely acknowledged as a crucial driver of growth and competitiveness among small and medium-sized enterprises (SMEs). Empirical studies across different contexts have examined how various dimensions of innovation (product, process,

marketing, and organizational) affect SME performance. The following section synthesizes empirical findings from previous research to identify trends, contextual differences, and methodological gaps, thereby aligning the discussion with the focus on innovation management and the performance of SMEs in Lagos Island, Nigeria.

Akoma et al. (2023) investigated the moderating effect of risk-taking and proactiveness on the relationship between innovation and performance among manufacturing SMEs in Ogun State, Nigeria. Using a survey of 504 SME owners and managers, and hierarchical regression analysis, the study revealed that both risk-taking and proactiveness significantly moderated the innovation-performance relationship. The findings implied that higher levels of risk-taking and proactive orientation enhance firm performance. The authors recommended that SME managers adopt proactive and risk-tolerant strategies to boost competitiveness within Nigeria's dynamic business environment.

Similarly, Issau et al. (2021) examined how innovation orientation dimensions influence SME performance in Ghana's manufacturing sector. Employing the PLS-SEM approach with data from 346 SMEs, the study found that market innovation had a significant positive impact on performance, whereas process and product innovations were not statistically significant. The study emphasized the importance of enhancing market innovation and called for more empirical research focusing on innovation orientation dimensions within African SMEs.

In Tanzania, Mdoe, Mfinanga, and Kanire (2024) explored the effect of various forms of innovation on SME performance using an Ordered Logistic Model on data from 162 SMEs. Their findings showed that product innovation enhances sales and customer satisfaction, process innovation improves return on equity and product quality, and marketing innovation drives sales growth. Organizational innovation was also found to enhance production quality and returns, highlighting the multifaceted nature of innovation in improving SME performance. The study recommended policy support in the form of grants, subsidies, and advisory services to promote innovation-driven growth among SMEs.

Kazinguvu (2017) emphasized the strategic aspect of innovation management in SMEs, focusing on how cultivating an innovative culture supports firm performance. Through qualitative interviews with selected SMEs, the study revealed that strategic innovation requires an open culture that encourages risk-taking, learning from failures, employee empowerment, and curiosity. The author argued that innovation should be embedded in organizational behaviour and leadership to ensure sustained performance.

Twaliwi and Isaac (2017) assessed the effect of innovation on SME performance in Gwagwalada-

Abuja using data from 348 SMEs analysed with the OLS method. The study found that product, process, and marketing innovations all had significant positive effects on performance. However, it noted that SMEs in the area were not consistently adopting innovative practices. The authors recommended that SMEs embrace new innovation methods to improve efficiency and competitiveness.

Tuan et al. (2016) also found a positive relationship between organizational innovation and firm performance, concluding that higher levels of innovative activities lead to improved performance outcomes. In a related study, Boachie-Mensah and Acquah (2015) examined 243 SMEs in Sekondi-Takoradi, Ghana, and found that product innovation, though positive, was not statistically significant to performance. Despite this, innovation explained over 51% of changes in firm performance, suggesting its central role in SME growth.

Maldonado-Guzmán et al. (2018) conducted a large-scale study of 1,400 Latin American family businesses and established that product, process, and management system innovations significantly contributed to improved products, production processes, and management efficiency. However, the study overlooked market innovation and the moderating role of government regulation, presenting conceptual and contextual gaps for future research.

Similarly, Mung'ora (2020) found that product, process, marketing, and organizational innovations were strong predictors of performance in SACCOs in Nyeri County, Kenya. The study highlighted the need for causal research designs, which the current study adopts, to establish more robust cause-effect relationships. Musyoki and Peter (2020) supported this conclusion in their study of 10,000 SMEs in Nairobi County, which revealed that market innovation significantly influences both firm performance and entrepreneurial growth.

Omwanza and Jagongo (2019) reviewed the role of organizational innovation among Kenyan microfinance institutions and concluded that firms with higher levels of organizational innovation tend to perform better. However, the study only considered product, process, and organizational innovation, leaving out market innovation and financial performance, which introduced a conceptual gap. Likewise, Kiveu et al. (2019) examined SMEs in Nairobi and found that process, marketing, and organizational innovations were vital for competitiveness, whereas product innovation had no significant impact. The study's focus on competitiveness rather than performance introduced a contextual and conceptual gap relevant to the current research.

In Mexico, Valdez-Bocanegra et al. (2020) established that management, process, marketing, and product innovations contribute significantly to competitiveness in the manufacturing sector. However, the study did not directly assess

performance outcomes and ignored moderating factors such as government regulation. Similarly, Muithya et al. (2021) found that market and financial innovations enhance performance among Kenyan microfinance institutions but identified conceptual and contextual limitations due to the study's narrow sectoral scope.

Jiang et al. (2018) explored the impact of government regulation on innovation performance among Chinese technology manufacturers. The study found that stringent regulations negatively affected innovation performance, while supportive regional policies promoted innovation. This underscores the importance of institutional environments in shaping innovation outcomes. Waziri, Ayuba, and Muhammad (2023) confirmed the positive effects of product and process innovation on SME performance in Yobe State, Nigeria, though marketing and organizational innovations were not significant predictors. Their findings suggest that innovation remains a key performance driver, albeit with varying levels of importance across innovation types. Nwankwo and Ezeibe (2021) also found that product, process, market, and administrative innovations significantly affect the financial performance of SMEs in Onitsha. They recommended that government support SMEs through incentives and credit guarantees to encourage innovation-driven growth. Similarly, Ukpabio, Oyeibisi, and Siyanbola (2019) analysed 305 Nigerian manufacturing SMEs and found that while all dimensions of innovation correlated positively with performance, process and organizational innovations had the strongest effects. Ndesaulwa and Kikula (2016) provided a comprehensive review of innovation research in Africa and noted that empirical studies on innovation and SME performance remain limited on the continent. Their study emphasized the need for more context-specific research, as most existing evidence originates from Western and Asian economies. Finally, Ismanu and Kusmintarti (2019) studied handmade batik SMEs in East Java, Indonesia, and found that continuous innovation in product design and production enhances competitiveness and firm performance. The authors concluded that SMEs must prioritize innovation as a long-term strategy to sustain performance in a dynamic market.

### Summary of Findings and Gap

Recent studies (2021–2024) emphasize the contextual nature of innovation's impact, with findings varying by region and sector. While product and process innovations consistently show positive effects (Akoma et al., 2023; Waziri et al., 2023), marketing and organizational innovations yield mixed results (Issau et al., 2021; Kiveu et al., 2019). Earlier research (2008–2016) laid the groundwork but often lacked regional diversity, emphasising the need for more African-focused studies. This review highlights gaps in Lagos-

specific research, justifying the current study's focus on innovation-performance dynamics in Lagos Island SMEs.

## Methodology

### Research Design

This study adopted descriptive research design to evaluate the impact of innovation management on the performance of selected SMEs at Lagos Island. Descriptive research design is also called survey research design. Asika (1991) postulated that research design means the structuring of investigation aimed at identifying variables and their relationships to one another. Kerlinger (1973) also explained that research design is used for the purpose of obtaining data to enable the researcher test hypothesis or answer research questions. Descriptive research design clearly specifies who and what are to be measured. The researchers used descriptive research design which is also called Survey design.

### Population of the study

Population of the study refers to the entire group of people of interest that the researcher wishes to investigate. Mugenda & Mugenda (2012) defines population as an entire group of individual or objects having common observable characteristic. The study population comprises of all the SMEs at Lagos Island.

### Sampling Procedure and Sample size

As the target population of the study. The sampling method used for this research is a combination of

convenient and quota sampling techniques, which was adopted to get information on innovation management and performance of SMEs in Lagos Island. Due to time and resources constraint, a total of 120 SMEs were selected and questionnaire were distributed to the manager or owners of the selected SMEs.

### Data Collection Instrument and Validation

Primary data was used for the purpose of collection of information for the research and the instrument used was questionnaire. Questions were structured in line with the Hypotheses and other relevant research questions using a five-point Likert Scale measurement which ranks responses on a scale of 1 to 5, the ranking of the Likert scale for each item is given below:

Strongly Disagree (1) = SD, Disagreed (2) = D, Undecided (3) = U, Agree (4) = A, Strongly Agree (5) = SA.

The validity of the constructs in the questionnaire was ascertained using the face validity and content validity. First and foremost, the questions were framed in such a manner that they are easily understood and they convey their sense and purpose to the respondents. The face validity was done by giving out copies of the questionnaire to academia who have a sufficient knowledge and experience regarding this topic to ensure that each item is measuring what is intended to be measured, and to avoid any ambiguity and complexity in the phrasing of the questions.

### Reliability of Research Instrument

Reliability relates to precision; in other words, it is used to check the consistency and stability of the questionnaire. Reliability of a test instrument concerns its ability to produce similar results when repeated measurements are made under identical conditions. The way one assesses reliability depends

on what is being measured. The reliability of the instrument was measured by the Cronbach's alpha coefficient. Some scholars have suggested that the values of all indicators or dimensional scales should be above the least recommended value of 0.60, this is shown in the table below;

**Table 3.1 Different Levels of Reliability**

| Level of Reliability  | Alpha Ranges  |
|-----------------------|---------------|
| Very Good Reliability | 0.8 to 0.95   |
| Good Reliability      | 0.7 to 0.8    |
| Fair Reliability      | 0.6 to 0.7    |
| Poor Reliability      | Less than 0.6 |

**Source:** Sekaran and Bougie, (2016).

Tables 3.1 above shows the interpretation of Cronbach alpha coefficient, which is used to describe the internal consistency of scales, obtained from the Likert scale. The higher the score, the more reliable the generated scale is.

### Results from the Pilot Study

Pilot test was carried out before the actual study to evaluate the reliability of the research instrument and

reduce the possible problems or inaccuracy that the questionnaires might have. Thirty (30) questionnaires were used for pilot test and were distributed to employees of SMEs in Ikeja, Lagos state. The Statistical Package for the Social Sciences (SPSS) software was used to run the reliability test of the 30 set of questionnaires. The result of reliability test is shown below;

**Table 3.2 Reliability Statistics Test Result**

| Variable              | Dimensions                | Sum of Items | Cronbach Alpha |
|-----------------------|---------------------------|--------------|----------------|
| Dependent Variable    | SMEs Performance          | 7            | 0.76           |
| Independent Variables | Product innovation        | 5            | 0.87           |
| Independent Variables | Process innovation        | 5            | 0.72           |
| Independent Variables | Marketing innovation      | 5            | 0.73           |
| Independent Variables | Organizational innovation | 5            | 0.85           |

**Source:** Authors Calculation (2025)

From table 3.2 above, it can be concluded that all variables (Independents and Dependent) fall within the range of 0.7 to 0.95; hence the research questionnaire is considered to have a good reliability.

#### Method of Data Analysis

Data Analyses in Management Sciences Research, two tools would be used; descriptive statistical tool and inferential statistical tool. The descriptive statistical tools are used for classifying data, this study made use of frequency tables, and percentages for descriptive statistics. While inferential statistical tool, Pearson correlation coefficient was used for testing hypotheses.

#### Data Presentation and Analysis

This section deals with the presentation and analysis of data collected from the respondents during the

study. Data are organized into tables and presented in simple percentages to find answers to research questions. The statistical test used for testing the hypothesis for the study is Pearson correlation coefficient. Pearson correlation coefficient analysis was adopted for the study to establish the significant relationship between the variables.

However, the convenient and quota sampling method was used to select the respondents on which the questionnaire was administered. A total of 120 questionnaire was distributed, retrieved from the respondents, and analysed. The statistical analysis of all data gather during the survey was carried out and presented in this section alongside hypotheses testing.

#### Answers to Research Questions

##### Section A: Demography details of the respondents

**Table 4.1 Demographic Characteristics of the Respondents**

| S/N | VARIABLE                | DEMOGRAPHICS     | FREQUENCY  | PERCENTAGE |
|-----|-------------------------|------------------|------------|------------|
| 1.  | Sex                     | Male             | 70         | 58.3       |
|     |                         | Female           | 50         | 41.7       |
|     |                         | <b>Total</b>     | <b>120</b> | <b>100</b> |
| 2.  | Age                     | 18-25            | 22         | 18.3       |
|     |                         | 26-35            | 33         | 27.5       |
|     |                         | 36-45            | 35         | 29.2       |
|     |                         | 46-55            | 19         | 15.8       |
|     |                         | 56 and above     | 11         | 9.2        |
|     |                         | <b>Total</b>     | <b>120</b> | <b>100</b> |
| 3.  | Education Qualification | SSCE             | 20         | 16.7       |
|     |                         | OND/NCE          | 58         | 48.3       |
|     |                         | HND/B.Sc         | 30         | 25.0       |
|     |                         | M.Sc and above   | 12         | 10.0       |
|     |                         | <b>Total</b>     | <b>120</b> | <b>100</b> |
| 4.  | Position the Business   | Owner            | 41         | 34.2       |
|     |                         | Manager          | 79         | 65.8       |
|     |                         | <b>Total</b>     | <b>120</b> | <b>100</b> |
| 5.  | Years of Operation      | Less than 1 year | 10         | 8.3        |
|     |                         | 1-5 years        | 61         | 50.8       |
|     |                         | 6-10 years       | 27         | 22.5       |
|     |                         | over 10 years    | 22         | 18.3       |
|     |                         | <b>Total</b>     | <b>120</b> | <b>100</b> |

|                             |                  |            |              |
|-----------------------------|------------------|------------|--------------|
| <b>Sector of Operations</b> | Manufacturing    | 47         | 39.2         |
|                             | Retail/Wholesale | 44         | 36.7         |
|                             | Services         | 24         | 20.0         |
|                             | Others           | 5          | 4.2          |
|                             | <b>Total</b>     | <b>120</b> | <b>100.0</b> |

**Source: Authors computation (2025)**

The demographic characteristics presented in Table 4.1 offer important insights into the profile of respondents involved in the study on innovation management and SME performance in Lagos Island. The gender distribution indicates that a larger proportion of the respondents are male (58.3%) compared to female (41.7%), suggesting that men slightly dominate SME ownership or management roles in the area. In terms of age, the respondents are relatively diverse, with the majority falling between the ages of 26 and 45 years (56.7%), reflecting an active and economically productive age group often associated with entrepreneurial activities. The presence of younger respondents (18–25 years, 18.3%) and older individuals (above 46 years, 25%) also highlights a mix of generational participation in SME operations.

Educational qualifications among the respondents reveal that a majority possess at least a diploma (OND/NCE, 48.3%), followed by HND/B.Sc. holders (25%). Only 10% have attained postgraduate education, while 16.7% hold only a secondary school certificate (SSCE). This distribution suggests a fairly educated respondent base, with most having the minimum formal training required to understand and possibly implement innovative practices in business. Regarding their positions within the businesses, a significant majority (65.8%) are managers rather than owners (34.2%), indicating that the information obtained in the survey largely reflects operational

**Table 4.2: Correlation Analysis**

|                    |                     | Product Innovation | SMEs Performance |
|--------------------|---------------------|--------------------|------------------|
| Product Innovation | Pearson Correlation | 1                  | 0.668**          |
|                    | Sig. (2-tailed)     |                    | 0.000            |
|                    | N                   | 120                | 120              |
| SMEs Performance   | Pearson Correlation | 0.668**            | 1                |
|                    | Sig. (2-tailed)     | 0.000              |                  |
|                    | N                   | 120                | 120              |

**Source: Authors computation (2025) \*\*.** Correlation is significant at the 0.01 level (2-tailed). Table 4.2 presents the results of the correlation analysis conducted to test Hypothesis 1, which examines the relationship between product innovation and the performance of selected SMEs in Lagos Island.

management perspectives rather than ownership viewpoints.

The duration of operation of the SMEs shows that most businesses (50.8%) have been in existence for between 1 to 5 years, suggesting a concentration of relatively young enterprises that may still be in their growth phase. A smaller portion (18.3%) has operated for over a decade, which could provide valuable insights from more established firms. The sectoral distribution reveals that the SMEs sampled cut across various industries, with manufacturing (39.2%) and retail/wholesale trade (36.7%) being the most represented. Service-based businesses account for 20%, while the remaining 4.2% fall into other unspecified categories. This spread demonstrates the heterogeneity of SMEs in Lagos Island and allows for a more generalized understanding of how different forms of innovation impact performance across various sectors.

### Test of Hypotheses

The Pearson Correlation Coefficient was employed in this study for testing hypotheses 1, 2, 3 and 4.

#### Hypothesis 1

**H<sub>01</sub>:** There is no significant relationship between product innovation and performance of selected SMEs.

**H<sub>11</sub>:** There is a significant relationship between product innovation and performance of selected SMEs.

The Pearson correlation coefficient between product innovation and SMEs performance is 0.668, with a p-value of 0.000, which is significant at the 0.01 level (2-tailed). This result indicates a moderately strong positive correlation between the two variables. In practical terms, it suggests that as SMEs engage more in product innovation, such as introducing new products, updating existing ones, and responding to



customer feedback, their performance in terms of sales, customer base, profitability, and other business outcomes tends to improve significantly. Since the p-value is less than 0.01, the result is statistically significant, and we reject the null hypothesis ( $H_0$ ) that states there is no significant relationship between product innovation and SMEs performance. We accept the alternative hypothesis ( $H_1$ ) that there is a significant relationship between product innovation and performance. This finding supports the idea that product innovation is a critical driver of competitive

advantage and growth for SMEs in Lagos Island, reinforcing the importance of continuous product development in ensuring business success in a dynamic market environment.

### Hypothesis 2

**H<sub>02</sub>:** There is no significant relationship between process innovation and performance of selected SMEs.

**H<sub>i2</sub>:** There is a significant relationship between process innovation and performance of selected SMEs.

**Table 4.3: Correlation Analysis**

|                    |                     | Process Innovation | SMEs Performance |
|--------------------|---------------------|--------------------|------------------|
| Process Innovation | Pearson Correlation | 1                  | 0.652**          |
|                    | Sig. (2-tailed)     |                    | 0.000            |
|                    | N                   | 120                | 120              |
| SMEs Performance   | Pearson Correlation | 0.652**            | 1                |
|                    | Sig. (2-tailed)     | 0.000              |                  |
|                    | N                   | 120                | 120              |

**Source: Authors computation (2025)**

Correlation is significant at the 0.01 level (2-tailed). Table 4.3 presents the correlation analysis for Hypothesis 2, which investigates the relationship between process innovation and the performance of selected SMEs in Lagos Island. The Pearson correlation coefficient between process innovation and SMEs performance is 0.652, with a p-value of 0.000, which is statistically significant at the 0.01 level (2-tailed). This indicates a strong positive relationship between process innovation and firm performance. In other words, as SMEs increasingly adopt innovative production methods, update delivery processes, automate tasks, and implement cost-saving process improvements, their overall performance improves as well. Given that the p-value is less than 0.01, we reject the null hypothesis ( $H_{02}$ ), which states that there is no significant relationship between process innovation

and SMEs performance. Instead, we accept the alternative hypothesis ( $H_{i2}$ ), confirming that there is a significant relationship.

This result underscores the importance of efficient internal operations and continuous process improvement for SMEs, suggesting that firms that prioritize process innovation tend to perform better in terms of profitability, competitiveness, and customer satisfaction. It reinforces the need for SMEs in Lagos Island to invest in modern technologies and operational strategies to enhance their performance outcomes.

### Hypothesis 3

**H<sub>03</sub>:** There is no significant relationship between marketing innovation and performance of selected SMEs.

**H<sub>i3</sub>:** There is a significant relationship between marketing innovation and performance of selected SMEs.

**Table 4.4: Correlation Analysis**

|                      |                     | Marketing<br>Innovation | SMEs Performance |
|----------------------|---------------------|-------------------------|------------------|
| Marketing Innovation | Pearson Correlation | 1                       | 0.733**          |
|                      | Sig. (2-tailed)     |                         | 0.000            |
|                      | N                   | 120                     | 120              |
| SMEs Performance     | Pearson Correlation | 0.733**                 | 1                |
|                      | Sig. (2-tailed)     | 0.000                   |                  |
|                      | N                   | 120                     | 120              |

**Source: Authors computation (2025) \*\*.** Correlation is significant at the 0.01 level (2-tailed).

Table 4.4 presents the correlation analysis for Hypothesis 3, which examines the relationship between marketing innovation and the performance of selected SMEs in Lagos Island.

The Pearson correlation coefficient between marketing innovation and SMEs performance is 0.733, with a p-value of 0.000, which is statistically significant at the 0.01 level (2-tailed). This indicates a strong positive correlation, suggesting that as SMEs adopt innovative marketing strategies, such as creative promotions, social media use, rebranding, and new pricing tactics, their performance significantly improves.

Since the p-value is less than 0.01, we reject the null hypothesis ( $H_{03}$ ) that there is no significant relationship between marketing innovation and SMEs performance. We accept the alternative

hypothesis ( $H_{33}$ ), confirming that a significant relationship exists.

This finding highlights the powerful role of marketing innovation in enhancing SME performance. It implies that firms that effectively innovate in how they promote, present, and position their products are more likely to attract customers, grow their market base, and achieve higher sales and profitability. Therefore, marketing innovation is a key strategic lever for performance improvement among SMEs in Lagos Island.

#### **Hypothesis 4**

**H<sub>04</sub>:** There is no significant relationship between organizational innovation and performance of selected SMEs.

**H<sub>i4</sub>:** There is a significant relationship between organizational innovation and performance of selected SMEs.

**Table 4.5: Correlation Analysis**

|                           |                     | Organizational<br>Innovation | SMEs Performance |
|---------------------------|---------------------|------------------------------|------------------|
| Organizational Innovation | Pearson Correlation | 1                            | 0.649**          |
|                           | Sig. (2-tailed)     |                              | 0.000            |
|                           | N                   | 120                          | 120              |
| SMEs Performance          | Pearson Correlation | 0.649**                      | 1                |
|                           | Sig. (2-tailed)     | 0.000                        |                  |
|                           | N                   | 120                          | 120              |

**Source: Authors computation (2025)** Correlation is significant at the 0.01 level (2-tailed).

Table 4.5 presents the correlation analysis for Hypothesis 4, which investigates the relationship between organizational innovation and the performance of selected SMEs in Lagos Island.

The Pearson correlation coefficient is 0.649, with a p-value of 0.000, indicating a strong positive and statistically significant relationship between organizational innovation and SME performance at the 0.01 level (2-tailed). This suggests that SMEs that implement organizational innovations such as adopting new management practices, restructuring internal processes, encouraging employee ideas, and forming strategic partnerships tend to achieve better performance outcomes.

Given that the p-value is less than 0.01, the result is statistically significant, and we reject the null hypothesis ( $H_{04}$ ), which states that there is no significant relationship between organizational innovation and SMEs performance. We therefore accept the alternative hypothesis ( $H_{14}$ ), confirming that a significant relationship exists.

This finding emphasizes the role of internal organizational adaptability and strategic leadership in driving SME success. It implies that innovation embedded in organizational culture, structure, and management practices contributes meaningfully to improved competitiveness, employee productivity, and overall business performance in SMEs across Lagos Island.

### Discussion of Findings

The present study examined the relationship between different dimensions of innovation management, namely, product innovation, process innovation, marketing innovation, and organizational innovation, and the performance of selected SMEs in Lagos Island. The findings reveal that all four innovation dimensions have statistically significant and positive correlations with SME performance. These results align with, and in some cases extend, previous research discussed in Chapter Two.

#### i. Product Innovation and SME Performance

The correlation analysis revealed a strong positive relationship ( $r = 0.668$ ) between product innovation and SME performance, indicating that SMEs that frequently develop or improve their products tend to perform better. This aligns with findings by Farida and Nuryakin (2021) and Vladimirov (2016), who affirmed that product innovation enhances customer satisfaction and drives business growth. Similarly, Oduro (2019) found that product innovation led to increased market share and competitiveness among Ghanaian SMEs. In the Lagos Island context, the high mean score for

introducing new or improved products ( $M = 4.16$ ) further reinforces this pattern. However, while studies like Boachie-Mensah and Acquah (2015) reported statistically insignificant effects of product innovation in certain settings, the current study provides robust evidence of its impact, reflecting Lagos Island's dynamic and highly competitive market environment where product differentiation is crucial.

#### Process Innovation and SME Performance

A positive and significant correlation ( $r = 0.652$ ) was also observed between process innovation and SME performance. This is consistent with the literature, particularly the studies of Hanaysha et al. (2022b) and Asad (2018), which demonstrated how process optimization contributes to cost efficiency, operational effectiveness, and improved customer service. The strong agreement among respondents in this study ( $M = 4.40$  for cost-reducing process changes) suggests that Lagos SMEs are increasingly leveraging process innovation to improve productivity. These findings also resonate with Schallmo et al. (2018) and Kimathi et al. (2019), who highlighted the transformative potential of process innovation in resource-constrained environments. Despite challenges such as infrastructure deficits (noted by Tariq et al., 2019), Lagos SMEs appear to be navigating these hurdles through strategic and incremental process improvements, aligning with Matekenya and Moyo's (2022) call for lean innovation strategies.

#### Marketing Innovation and SME Performance

Marketing innovation recorded the strongest correlation with SME performance ( $r = 0.733$ ), underscoring its critical role in the success of Lagos Island SMEs. This finding supports empirical work by Musawa and Ahmad (2018) and Mabenge et al. (2022), who found that innovative marketing strategies significantly enhance competitiveness, customer acquisition, and profitability. The adoption of creative promotions, social media, and rebranding efforts, reflected in high mean scores in this study, demonstrates how SMEs in Lagos are actively using marketing innovation to differentiate themselves. This contrasts with studies like Rosli and Sidek (2013), which downplayed the effect of marketing innovation in certain regions due to environmental factors. However, the vibrant and urbanized business climate of Lagos Island may amplify the relevance of marketing innovation, providing an explanation for the strong observed relationship.

### **Organizational Innovation and SME Performance**

Finally, the correlation between organizational innovation and SME performance ( $r = 0.649$ ) confirms that internal structural changes, new management practices, and collaboration contribute meaningfully to performance. This finding mirrors the work of Expósito and Sanchis-Llopis (2019) and Maldonado-Guzmán et al. (2018), who emphasized the role of organizational innovation in enhancing internal processes and sustaining competitive advantage. In the current study, while the cultural integration of innovation within firms scored modestly ( $M = 3.05$ ), practices such as using new management methods and inter-firm partnerships received strong agreement, pointing to an emerging shift toward more agile and responsive organizational setups among SMEs. This supports Boubakary's (2021) view that internal innovations, especially in structure and practice, are fundamental to business growth.

Collectively, the findings of this study reinforce the OECD's (2005) multidimensional innovation framework and provide empirical validation for Schumpeter's theory of innovation, which posits that innovation is a key driver of firm growth and market disruption. Moreover, the study extends the Resource-Based View (RBV) and Dynamic Capabilities Theory by demonstrating how Lagos SMEs utilize internal capabilities and adaptive strategies to innovate and sustain performance in a volatile business environment. While some previous studies reported inconsistent or context-dependent results, such as Waziri et al. (2023) who found weak effects of marketing and organizational innovation in Yobe State, the strong positive correlations observed in Lagos Island may reflect the distinct entrepreneurial ecosystem, urban infrastructure, and consumer dynamics unique to the region.

### **Conclusion and Recommendations**

This study investigated the influence of innovation management on the performance of selected SMEs in Lagos Island. A total of 120 questionnaire was distributed to either owners or managers of the selected SMEs, retrieved from the respondents, and analysed. The retrieved questionnaire was then coded and analysed using statistical package for social sciences (SPSS). From the results, it was observed that product innovation, process innovation, marketing innovation, and organizational innovation positively impact the performance of selected SMEs in Lagos Island. Based on the findings of this study, the following recommendations are proposed to enhance innovation practices and improve the performance of SMEs in Lagos Island:

- i. Promote Continuous Product Innovation: SME owners and managers should invest more in developing new

products and improving existing ones to remain competitive and responsive to changing customer needs. This may involve using customer feedback mechanisms, trend analysis, and prototype testing.

**Adopt Efficient Process Innovations:** SMEs should regularly assess and improve their operational processes to reduce costs and enhance efficiency. Government agencies and industry associations can support this by organizing training and workshops on lean manufacturing, automation, and digital tools.

**Strengthen Marketing Innovation Strategies:** Since marketing innovation had the strongest relationship with performance, SMEs are encouraged to adopt creative promotional strategies, leverage social media platforms, and explore modern branding techniques to attract and retain customers.

**Enhance Organizational Innovation Culture:** SMEs should foster a culture that encourages innovation at all levels of the organization. This includes empowering employees to contribute ideas, restructuring internal systems for better efficiency, and engaging in strategic partnerships with other firms and institutions.

**Policy Support and Incentives:** Government agencies, such as SMEDAN and BOI, should provide targeted support through tax incentives, grants, and capacity-building programs to enable SMEs to overcome financial and technical barriers to innovation.

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## Leadership Styles and Organizational Change in Delta State Civil Service

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### Abstract

*This study investigates the impact of transformational and servant leadership styles on organisational change, specifically technological and attitudinal changes, within the Delta State Civil Service. Using a cross-sectional survey design, data were collected from 39 deputy and assistant directors across 11 ministries and directorates, achieving an 88.64% response rate. Regression analysis revealed that transformational leadership significantly influences technological change ( $\beta = 0.276$ ,  $p = 0.031$ ,  $R^2 = 0.120$ ) and employees' attitudinal change ( $\beta = 0.343$ ,  $p = 0.002$ ,  $R^2 = 0.229$ ), rejecting the null hypotheses. Servant leadership significantly predicts attitudinal change ( $\beta = 0.349$ ,  $p < 0.001$ ,  $R^2 = 0.295$ ) but not technological change ( $\beta = 0.188$ ,  $p = 0.106$ ,  $R^2 = 0.069$ ). Findings highlight transformational leadership's critical role in driving digital adoption and attitudinal shifts, while servant leadership excels in fostering positive employee attitudes. The study extends prior research by providing empirical evidence in a sub-national Nigerian context, addressing slow technological adoption and attitudinal resistance. Recommendations include targeted leadership training to enhance change outcomes. Future studies could explore longitudinal designs or mediators like organizational culture.*

**Keywords:** Transformational Leadership, Servant Leadership, Technological Change, Attitudinal Change, Organisational Change

### Introduction

Change is a prominent attributes of organizational, civil and personal life. Lewis (2011) notes that change serve as means of addressing many important challenges related to policy, governance, rule of law, philosophy, distribution of information, rights, and resources; challenges of efficiency, effectiveness, quality, and competitiveness; and challenges hinged on shared values, understanding, and cooperation. Accordingly, these challenges cut across many sectors of the society including private sector organization upon which human depend for goods, services, and the basis of societal economy; public sector organizations that run humans' community, state, national and international governance; and non-governmental or non-profit organizations that promote community and leisure activities (Lewis, 2011). While change is a regular characteristics of organizational life, and indeed, an inseparable aspect of nature, yet, most public sector organizations, particularly the civil service in most developing countries have failed to embrace and adapt to changes (especially technological, structural and leadership related changes) influencing operational and administrative activities. Buttressing, Van der Voet

and Vermeeren, (2017) opine that while organizations in their quest of increasing efficiency often introduce changes, however, in reality, the anticipated outcome is barely achieved.

Observably, over the years, Nigeria as a country, have accepted global practices as well as, has been receptive in the implementation of technological advances in various sphere of human endeavors, however, its civil service is yet to fully accept and apply the technological changes, characterizing work processes and operations in the twenty-first century. Corroborating, Oyelade (2021) revealed that the structure of Nigeria's civil service represents a stone aged institution where professionals have spent more than twenty years in service without adding value to the development of the nation's infrastructure, or implementing policies that promote inclusion ..., as there exist many holes in the civil service structure, spanning across its organizational structure to the basic standard operational procedure. In a world that is rapidly digitalized, Nigerian civil service still highly engaged on manual filling as well as paper-based authorization in most of its operations. Although, over time, several policies and frameworks such as the



National Strategy for Public Service Reform, SERVICOM, Federal Civil Service Strategy and Implementation Plan, digitization and E-government policies have been initiated in ensuring change within the civil service, yet, antiquated and outdated processes of service delivery still persist; indicating resistance to change within in the civil service. Ekang (2014) averred that the civil service is slow to perceive change and even slower to adopt it. Amjad and Rehman (2018) posit that resistance to change is often rooted in uncertainty, loss of control, perceived threats to job security, or inadequate communication from management. These issue is considered a states'-wide phenomenon, characterizing various ministries, departments, agencies and parastatals of government in Nigeria.

Specifically, Delta state, over the past two decades have witness significant change initiative aimed at transforming the public sector. For instance, in the year 2000, an information technology enablement project tagged "e-Delta", designed on a wide spread introduction of computers to conduct daily work activities and a world class business application was introduced, aimed at enhancing service delivery in Ministries, Departments and Agencies of Government. In addition, report indicate that the present administration of Delta state, in a bid to improve competency and professionalism within the state civil service, have institutionalized regular training and retraining programme, aimed at promoting a culture of continuous learning within the civil service (Adon, 2025). Delta state civil witnessed changes in relation to restructuring of ministries and the creation/merging of directorates; also there was a move from project approach to programme approach in the implementation of budgets as well as in project monitoring from project inception to project delivery (Odigbo, 2024). In spite of these technological, attitudinal and structural changes initiated in Delta state's civil services over the years, yet, ministries, departments and agencies recorded very minimal changes.

Data obtained, indicates that the spirit of innovation has not been brought to bear in registry and registry practices in Delta state's Ministries, Departments and Agencies. Almost every registry has continued to operate manually (94.83%). Only a paltry 1.72% is digitalized (Odigbo, 2024). Similarly, it was revealed that regarding changes in organizational structure, 39.66% have changed while 56.90% recorded their MDAs as remaining intact (Odigbo, 2024). Also, there are reports of poor work ethics and poor work attitude characterizing Delta state civil service (Ahiuma-Young, 2018). Scholars have made consistent attempt aimed at understanding the challenges and causes of slow organizational change initiatives. While, Agbeyeke

(2015) in a study identified infrastructural constraints, financial constraints, institutional and human capacity constraint as challenges of the efficiency of technological changes in civil service; Adeleye et al. (2025) highlighted that visionary leadership play important role in driving innovation and technology adoption in the Nigerian public sector. Asghar (2010) in Ochuko and Ayo-Balogun (2020) agree on the point that the role of leadership/leader is very significant while managing organizations or addressing the problem of organizational change. While leadership issues, and a lack of awareness and motivation have been revealed to complicate change process in organization, however, with committed leadership, adequate training, and a deep understanding of the challenges, organizations can navigate the complexities of change and achieve their desired outcomes (Odulaja et al., 2023).

Gilbert (2025) notes that rigid leadership is one of the key drivers of change resistance in organization. Akbar (2017) describes leadership as the process of social influence that consciously directs others to structure and influence the activities of a group or organisation to achieve one or more goals. Leaders must have the ability to influence, direct or motivate the behaviour of other people or groups to achieve desired goals. While these abilities are known and exhibited by all leaders in organizations, however, Adeleye et al. (2025) note that transformational leaders who exhibit visionary thinking, intellectual stimulation, and personalized support tend to create environments that are more receptive to new ideas. Furthermore, transformational leadership has been recognized to excels in environments that require innovation, change management, and long-term vision (Adeleye et al., 2025). On the other hand, Aruoren and Erhuen (2023) in a study on leadership and organizational outcomes in parastatals and ministries in Delta State, found that servant leadership strongly predicted perceived organizational support and job satisfaction among employees; perceived support partially mediated the relationship between servant leadership and satisfaction. Accordingly, in servant leadership style, leadership emerges through humility, empathy, active listening, persuasion, stewardship, and nurturing community-cantered on serving team needs ahead of individual ambition (Adeleye et al., 2025).

Although, scholars (Musa & Bello, 2023; Purnomo et al., 2024; Adeleye et al., 2025; Gilbert, 2025; Gustyan & Anggarani, 2024; Ochuko & Ayo-Balogun, 2020) have been examined organizational change in various sectors, geographical locations and cities, relying on several antecedent factors believed to have influence desired change, however, none has been done in ascertaining the effect of leadership (transformational and servant leadership) on organizational change, particularly in Delta state civil service. Against this

background this study examined the effect of leadership on organizational change in Delta state civil service.

### **Objective of the study**

The aim of this study is to examine the effect of leadership on organizational change in Delta state civil service. Specifically, the study: (1) Assess the effect of transformational leadership style on technological change in Delta state civil service; (2) ascertain the influence of transformational leadership style on employees' attitudinal changes in Delta state civil service; (3) investigate the effect of servant leadership style on technological change in Delta state civil service; (4) examine the influence of servant leadership style on employees' attitudinal changes in Delta state civil service.

### **Research hypotheses**

From these objectives, the following hypothesis were stated in their null form to guide the study. Ho<sub>1</sub>: Transformational leadership style does not have any significant effect on technological change in Delta state civil service.

Ho<sub>2</sub>: Transformational leadership style does not have any significant influence on employees' attitudinal changes in Delta state civil service.

Ho<sub>3</sub>: Servant leadership style does not have any significant effect on technological change in Delta state civil service.

Ho<sub>4</sub>: Servant leadership style does not have any significant influence on employees' attitudinal changes in Delta state civil service.

### **Literature Review**

#### **The concept of leadership**

Over the years, several attempts have been made in explaining the concept of leadership, although, there is lack of universally acceptable definition on the concept of leadership. This, Stogdill (1974) affirms, by stating that there are almost as many definitions of leadership as there are persons who have attempted to define the concept. Kumar cited in Anyango (2015) views leadership as a process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent. These are accomplished through the application of leadership attributes, such as beliefs, values, ethics, character, knowledge, and skills. Anbazhagan and Kotur (2014) defined leadership as a process of influencing others to get the job done effectively over sustained period of time, geared towards accomplishment of organizational set goals. In other words, leadership is an art of influencing followers or employees' behavior and performance towards the achievement of group goals. Accordingly,

a leader must be able to influence others to adapt to change, particularly a positive change, doing so will motivate and ultimately lead their followers to a new and promising future (Summerfield, 2014). While a good leader does not force their employees but rather encourages and leads by example and has integrity, which ultimately benefits all stakeholders, contrarily, bad leaders exhibits characteristics that are misguided. These characteristics are often exhibited in different behavior in leading followers referred to as leadership style.

Cuadrado et al (2007) in Anyango (2015) described leadership style as consistent set of behaviors /patterns, proposing two dimensions in leaders' behavior, structure initiation which includes task-oriented leaders and consideration which includes relation-oriented leaders. Kuncoro (2021) state that leadership style is a person's way (leadership) of influencing other people or their subordinates to be willing to do what they want to achieve organizational goals. Accordingly, leadership styles have evolved over the decades to embrace novel concepts like servant, transformational and transactional leadership styles (Lynch, 2016). These styles of leadership (Transformational and transactional leadership), later extended to the Full Range of Leadership theory. Accordingly, the full range of leadership theory, identifies the concept of three distinct leadership styles - transactional, transformational, and laissez-faire (Udovita, 2020). The foundation of the full ranged leadership model emanates from the works of Bass (1985). However, Hartnell and Leroy (2019) opined that most of the leadership found on literature falls within the classical type of leadership such as change-oriented, task-oriented and relationship-oriented) or the moral type of leadership (ethical, servant leader and authentic).

#### **Transformational leadership style**

Accordingly, transformational leadership focuses on satisfying the basic and higher-order needs of followers through inspiration to achieved desired goals (Ghasabeh et al., 2015). It can be described as a process that changes and transforms individuals through an exceptional form of influence that moves followers to accomplish more than what is usually expected. Transformational leadership emphasizes that leaders should act as change agents who initiate and implement the new directions to employees based on innovative ideas and vision (Kim & Yoon, 2015). This implies that employees are empowered in making change in the organization by the leaders to ensure that the innovative ideas possessed by employees are of great substance for the growth and success of the organization.

Bass and Avolio (1997) conceptualized transformational leadership manifesting through

idealized attributes, idealized behavior, intellectual stimulation, inspirational motivation, and individualized consideration. Idealized influence refers to the behaviors of a transformational leader that evokes his or her followers' trust, admiration, respect and their desires to emulate the leader. Inspirational motivation as a component of transformational leadership is concerned with the leader communicating and expecting high performance and output from their followers. The leaders offer importance and challenge that spurs and moves crafted by the workers. In such manner, the leaders advance cooperation, eagerness, and idealism in their devotees by including them in a positive vision of things to come and by conveying elevated standards that supporters need to accomplish (Gomes, 2014). In addition, Transformational leaders stimulate their followers' efforts "to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways" (Avolio & Bass, 2002). Lastly, manifesting through individualized consideration. In applying individualized consideration, a leader considers many elements related to an individual employee's temperament, talents, level of formal education, occupational training, and experience.

### **Servant leadership style**

Accordingly, servant leadership emerged as a transformative approach to organizational leadership and places the needs of followers first and emphasizes ethical behavior, empowerment, and community building (Canavesi & Minelli, 2022). Greenleaf (2023) in Adeleye et al (2025) view servant leadership as a philosophy and practice of leadership in which the leader's primary role is to serve others first, focusing on followers' growth, well-being, and empowerment rather than asserting traditional positional authority. This leadership style emphasizes humility, empathy, active listening, persuasion, stewardship, and nurturing community, for the purpose of serving team needs ahead of individual ambition. Madison and Eva (2025) revealed that the servant leadership sharply with autocratic or power-oriented models and reorients leadership toward ethical service and people-centered practice. The servant leadership model enunciates a reciprocal social exchange: leaders who genuinely serve their followers foster commitment and trust, which in turn drives performance and ethical alignment.

### **Organizational change**

Change refers to a system of continuous transformation that takes place in one or more organisational domains, such as organisational technology, structure and human resources (Sofat et al., 2015). George and Jones (2011) in Musa & Bello (2023) define organisational change as the adoption of innovative ideas or behaviours by an

organisation in response to external and internal pressures. External pressure could result from improvements in technology and pressure from stakeholders outside the organisation, such as government or industry competitors. Internal pressure for change can come from individuals such as shareholders, management or employees. Khosa et al., (2015) opined that organizational change involves; mission changes, strategic changes, operational changes (including structural changes), technological changes, changes in staff attitudes and behaviours, countering the resistances of various employees of the organisation and aligning them with the strategic directions of the organization.

### **Technological changes**

Technological change involves invention (development of new technology), innovation (application and commercialization), and diffusion (spread and adoption) - resulting in more effective or efficient tools, services, and systems (Adeleye et al., 2025). It does not only involves digitizing an ongoing process but implies a fundamental reconfiguration of institutional operations and service delivery models in public sector settings. In Nigeria, digital transformation in governance involves integrating technologies such as e-government systems, online portals, and digital identity mechanisms to combat corruption, improve efficiency, and expand access (Adesola, 2024).

### **Attitudes toward change**

Liao et al. (2012) in Musa and Bello (2023) view work attitudes are a set of behaviour and judgements about work, and these behaviours and thoughts are redirected in the form of work effort and organisational commitment. In the workplace, employee attitude reflects how an employee feels about their job, work environment, resources, policies, and procedures (Mohan & Sudarsan, 2020). Employees attitude towards change is often shaped by intrinsic and extrinsic factors such as work-related values self-efficacy, threat assessment, perception of stress, work-related attitudes, skills development, fear of the consequences of change, and career advancement; perceived social support, perceived organisational support, leadership style (transformational and transactional), organisational fairness, leadership style (transformational and transactional), manager involvement and so on (Musa & Bello, 2023).

### **Empirical reviews**

Adeleye et al (2025) carried out on leadership style and technological change in selected Ministries, Departments, and Agencies (MDAs) in Nigeria. Specifically, it focused on three leadership dimensions: transformational, transactional, and servant leadership.

A structured questionnaire, based on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," was developed and administered electronically via Google Forms. Data were collected from 380 purposively selected respondents across 15 MDAs, all of which met inclusion criteria related to ICT capacity and regulatory compliance. Descriptive statistics were used to analyse the data via SPSS. The findings revealed that transformational leadership had the most significant positive effect on technological change, followed by transactional leadership. Servant leadership showed the least direct effect.

Iqbal et al. (2023) conducted a study in Pakistani IT firms comparing transformational and servant leadership in predicting innovative behaviour, including the use of new digital tools and processes. The objective was to determine whether servant leadership explains incremental variance in innovative behaviour above transformational leadership. A quantitative survey of 338 IT employees was conducted using PLS-SEM. Findings showed that servant leadership not only exerted a significant direct influence on innovative behaviour but also explained incremental variance beyond transformational leadership. The mechanisms differed: affective commitment mediated transformational leadership, whereas creative self-efficacy mediated servant leadership's impact on innovation.

Gilbert (2025) explores the underlying causes of employee resistance to organizational change and evaluates strategic interventions within Nigeria's hospitality sector. Grounded in Lewin's Change Management Theory (Unfreeze-Change-Refreeze), the research adopts a qualitative approach using semi-structured interviews with 20 employees across various hospitality organizations. The findings reveal that resistance stems from factors such as fear of job loss, inadequate communication, lack of employee involvement, and poor leadership engagement. Strategic responses, including inclusive communication, participatory decision-making, and targeted training, were found to mitigate resistance and enhance change readiness.

Bello and Aide (2023) conducted a study examining the effect of transformational leadership on organizational growth and ICT progress at Adamawa State Polytechnic, Yola, Nigeria. The objective was to assess how transformational leadership dimensions—such as intellectual stimulation, individualized consideration, and inspirational motivation - influence employees' readiness and performance in an increasingly digital work environment. The study employed a descriptive quantitative survey design, targeting management, academic, and non-academic staff, with a sample size of 100 respondents selected using stratified random sampling. Findings revealed

that transformational leadership crucially accelerates organizational growth and progress, especially in the ICT era, by fostering employee engagement, innovation, and performance.

Purnomo et al (2024) analyze the role of value-based leadership in shaping an organizational culture that supports sustainable change. The research method employed is a literature review with a qualitative approach using descriptive analysis. Data for this research were gathered from Google Scholar within the timeframe of 2004-2024. The findings indicate that leaders with a value-based approach play a crucial role in shaping an organizational culture that supports sustainable change. They are responsible for communicating and reinforcing core values, developing a focused vision, building trust and team member engagement, as well as promoting continuous learning. Gustyan and Anggarani (2024) examine the role of leadership in the organizational change process, both as a facilitator and as an influencer. Literature review and theoretical analysis were combined with qualitative research methodology in this study. It was found that a good leadership style and paying attention to the school culture that has developed is very influential in creating positive change. Teachers, Staff and students can be inspired and motivated by transformational leadership, as they engage in decision making and take ownership of change under participative leadership. Planning, directing, and implementing necessary changes becomes easier with strategic leadership.

## Methodology

The study adopted quantitative approach as well as cross-sectional survey design. Cross-sectional survey aids the elicitation of primary data on particular problems and gives the researcher first-hand information on the subject studied. The population of the study involves ministries and directorates in Delta state civil service. Accordingly, there exist a total of 35 mainline Ministries and Directorates in Delta state civil service (Odigbo, 2024). Hence, the study targeted deputy and assistant directors of various departments in all 35 ministries and directorates of Delta state civil service. While the study unit of analysis is on the macro level, it becomes difficult to access the permanent secretaries and directors of each ministry, hence, two deputy and two assistant directors were targeted mainly from several departments (units) in 8 ministries and 3 directorates (ministry of works, environment; land, survey and urban development; commerce and industry, housing, energy, water resources, economic planning; directorates of local government affairs, science and technology, and special duties). This amount to 44 elements constituting the study unit of analysis. Census was adopted in which the entire 44 elements of the target population were

studied. Questionnaire structures in Likert's five-point scale was used for data collection. For test of reliability of the scale, Cronbach's alpha coefficients Data were analyze using descriptive and inferential statistics. Specifically, regression analysis was used in testing the hypotheses.

## Results and Discussion

Out of the 44 questionnaires distributed to deputy and assistant directors across selected ministries and

directorates in the Delta State Civil Service, 39 were returned complete and free from errors, yielding a response rate of 88.64%. This sample size was sufficient for the quantitative analysis, aligning with the study's cross-sectional survey design and regression techniques. The demographic profile of respondents, summarized in Table 1, provides insight into the target population.

**Table 1: Demographic Characteristics of Respondents (N=39)**

| Demographic Variable       | Category                                       | Frequency | Percentage (%) |
|----------------------------|------------------------------------------------|-----------|----------------|
| <b>Gender</b>              | Male                                           | 25        | 64.1           |
|                            | Female                                         | 14        | 35.9           |
| <b>Age Group</b>           | 18-25                                          | 2         | 5.1            |
|                            | 26-35                                          | 8         | 20.5           |
|                            | 36-45                                          | 15        | 38.5           |
|                            | 46-55                                          | 10        | 25.6           |
|                            | 56 and above                                   | 4         | 10.3           |
| <b>Years of Service</b>    | Less than 5 years                              | 5         | 12.8           |
|                            | 5-10 years                                     | 10        | 25.6           |
|                            | 11-15 years                                    | 12        | 30.8           |
|                            | 16-20 years                                    | 8         | 20.5           |
|                            | Above 20 years                                 | 4         | 10.3           |
| <b>Position</b>            | Deputy Director                                | 20        | 51.3           |
|                            | Assistant Director                             | 19        | 48.7           |
| <b>Department/Ministry</b> | Ministry of Works                              | 4         | 10.3           |
|                            | Ministry of Environment                        | 3         | 7.7            |
|                            | Ministry of Land, Survey and Urban Development | 4         | 10.3           |
|                            | Ministry of Commerce and Industry              | 3         | 7.7            |
|                            | Ministry of Housing                            | 3         | 7.7            |
|                            | Ministry of Energy                             | 4         | 10.3           |
|                            | Ministry of Water Resources                    | 3         | 7.7            |
|                            | Ministry of Economic Planning                  | 4         | 10.3           |
|                            | Directorate of Local Government Affairs        | 4         | 10.3           |
|                            | Directorate of Science and Technology          | 3         | 7.7            |
|                            | Directorate of Special Duties                  | 4         | 10.3           |

**Source:** Research Output, 2025

The demographic analysis shows a male-dominated sample (64.1%), consistent with the gender distribution in senior civil service roles in Nigeria. The largest age group, 36-45 years (38.5%), suggests a mid-career cohort with significant exposure to organisational changes. The majority of respondents had 11-15 years of service (30.8%), indicating a balanced tenure mix

that likely influences their perceptions of leadership and change. The near-equal split between Deputy Directors (51.3%) and Assistant Directors (48.7%) aligns with the study's target population. The departmental distribution is evenly spread, with no single ministry or directorate dominating, ensuring diverse representation across the targeted entities.

**Table 2: Descriptive Statistics for Key Variables (N=39)**

| Variable                               | Mean | Standard Deviation (SD) |
|----------------------------------------|------|-------------------------|
| Transformational Leadership Style (TL) | 3.73 | 0.66                    |
| Servant Leadership Style (SL)          | 3.72 | 0.74                    |
| Technological Change (TC)              | 4.50 | 0.53                    |
| Employees' Attitudinal Change (EAC)    | 4.71 | 0.47                    |

**Source:** Research Output, 2025

The descriptive statistics indicate positive perceptions across all variables. Transformational leadership style (TL) has a mean of 3.73 (SD = 0.66), suggesting moderate to high agreement on its inspirational and visionary aspects, with some variability in perceptions. Servant leadership style (SL) shows a similar mean of 3.72 (SD = 0.74), reflecting consistent perceptions of empathy and empowerment, though with slightly higher variability. Technological change (TC) has a higher mean of 4.50 (SD = 0.53), indicating strong endorsement of digital

tools' benefits, with relatively low dispersion. Employees' attitudinal change (EAC) records the highest mean of 4.71 (SD = 0.47), implying widespread openness to behavioral shifts and high consensus among respondents.

### Hypotheses Testing

To test the hypotheses, simple linear regression analyses were conducted using ordinary least squares (OLS) in SPSS, with leadership styles as independent variables and dimensions of organisational change as dependent variables. The results are summarized in Table 3.

**Table 3: Regression Analysis Results for Hypotheses (N=39)**

| Hypothesis | Independent Variable                   | Dependent Variable                  | Beta Coefficient | P-value | R <sup>2</sup> | Result       |
|------------|----------------------------------------|-------------------------------------|------------------|---------|----------------|--------------|
| Ho1        | Transformational Leadership Style (TL) | Technological Change (TC)           | 0.276            | 0.031   | 0.120          | Rejected     |
| Ho2        | Transformational Leadership Style (TL) | Employees' Attitudinal Change (EAC) | 0.343            | 0.002   | 0.229          | Rejected     |
| Ho3        | Servant Leadership Style (SL)          | Technological Change (TC)           | 0.188            | 0.106   | 0.069          | Not Rejected |
| Ho4        | Servant Leadership Style (SL)          | Employees' Attitudinal Change (EAC) | 0.349            | <0.001  | 0.295          | Rejected     |

**Source:** Research Output, 2025

The regression analysis for Ho1 shows that transformational leadership significantly predicts technological change (beta = 0.276, p = 0.031, R<sup>2</sup> = 0.120), indicating that TL explains 12% of the variance in TC. The positive beta suggests that a one-unit increase in TL leads to a 0.276-unit increase in TC, rejecting Ho1. For Ho2, TL significantly influences EAC (beta = 0.343, p = 0.002, R<sup>2</sup> = 0.229), explaining 22.9% of the variance and rejecting Ho2, highlighting TL's stronger role in attitudinal shifts. For Ho3, servant leadership's effect on TC is positive but non-significant (beta = 0.188, p = 0.106, R<sup>2</sup> = 0.069), failing to reject Ho3, suggesting limited direct impact on technological adoption. For Ho4, SL significantly predicts EAC (beta = 0.349, p < 0.001, R<sup>2</sup> = 0.295), explaining 29.5% of

the variance and rejecting Ho4, indicating SL's strong influence on attitudinal changes.

### Discussion of Findings

#### Ho1: Transformational Leadership Style and Technological Change

The rejection of Ho1 confirms that transformational leadership significantly enhances technological change in the Delta State Civil Service. This aligns with Adeleye et al. (2025), who found transformational

leadership to be the most effective in driving technological adoption in Nigerian MDAs, due to its focus on visionary thinking and intellectual stimulation. Similarly, Bello and Aide (2023) reported that transformational dimensions like inspirational

motivation accelerate ICT progress in public institutions. A recent study in Ethiopian public universities further supports this, showing transformational leadership's role in fostering innovation in tech-heavy environments (Yismaw et al., 2024). The moderate  $R^2$  suggests other factors, such as infrastructural constraints noted by Agbeyeke (2015), may also influence tech adoption, but TL's impact remains critical in overcoming resistance to digital tools like e-government systems.

## **Ho2: Transformational Leadership Style and Employees' Attitudinal Change**

The rejection of Ho2 indicates that transformational leadership significantly fosters positive attitudinal changes among employees. The higher  $R^2$  underscores TL's stronger influence on attitudes compared to technological change. This finding corroborates Bass and Avolio (1994), who emphasize TL's ability to inspire and motivate followers toward organizational goals. In the Nigerian context, Adeleye et al. (2025) noted TL's role in enhancing employee readiness for change. A 2024 study in the Lebanese public sector further aligns, linking transformational traits to higher commitment in bureaucratic settings (Harb & Sidani, 2024). The result suggests that TL's inspirational and individualized consideration components effectively counter attitudinal resistance, as noted by Gilbert (2025), fostering openness to new work practices.

## **Ho3: Servant Leadership Style and Technological Change**

The failure to reject Ho3 indicates that servant leadership does not significantly influence technological change, with a low  $R^2$  suggesting minimal explanatory power. This aligns with Adeleye et al. (2025), who found servant leadership less impactful on tech outcomes compared to transformational styles, likely due to its focus on relational rather than visionary aspects. Iqbal et al. (2023) noted that servant leadership's influence on innovation requires mediators like self-efficacy, not direct tech adoption. A 2025 study on tech-driven development similarly positioned servant leadership as secondary in rapid digital transitions (Chepkutwo, 2025). Infrastructural barriers, as highlighted by Agbeyeke (2015), may further limit SL's tech impact in Delta's civil service, where manual processes dominate (Odigbo, 2024).

## **Ho4: Servant Leadership Style and Employees' Attitudinal Change**

The rejection of Ho4 confirms that servant leadership significantly enhances employees' attitudinal changes, with the highest  $R^2$  among the hypotheses. This supports Aruoren and Erhuen (2023), who found

servant leadership predicts job satisfaction and support in Delta State parastatals through empathy and community-building. Gustyan and Anggarani (2024) similarly noted servant-like leadership's role in motivating attitudinal shifts in educational settings. A recent review further endorses SL's effectiveness in cultivating positive attitudes in public administration (Ogunyemi et al., 2024). The strong effect suggests that SL's focus on humility and empowerment fosters a supportive environment, reducing resistance to change and enhancing employee commitment.

## **Conclusion and Recommendations**

### **Conclusion**

The study confirms that leadership styles significantly influence organisational change in the Delta State Civil Service. Transformational leadership drives both technological and attitudinal changes, as evidenced by the rejection of Ho1 and Ho2, addressing the slow digital adoption and attitudinal resistance noted in prior studies. Servant leadership, while not impactful on technological change (Ho3 not rejected), excels in fostering attitudinal shifts (Ho4 rejected), highlighting its relational strengths. These findings underscore the need for tailored leadership approaches to optimize change outcomes in public sector settings.

### **Recommendations**

The study made the following recommendations based on the study's results and findings:

- Implement mandatory transformational leadership training for senior officials, focusing on visionary strategies to accelerate digital tool adoption, such as e-government systems, to address the low digitization rate.

- Develop workshops to enhance transformational leadership behaviours, emphasizing intellectual stimulation and inspirational motivation to sustain employee openness to organisational reforms.

- Introduce tech-focused mentoring programs to complement servant leadership's relational strengths, indirectly supporting digital transitions by building employee trust.

- Promote servant leadership practices, such as empathy-driven communication and community-building, to maintain positive work attitudes and reduce resistance during change initiatives.

### **Contribution to Knowledge**

This study provides empirical evidence on the differential effects of transformational and servant leadership on technological and attitudinal changes in the Delta State Civil Service. It highlights transformational leadership's primacy in tech adoption and servant leadership's strength in attitudinal shifts,

offering a nuanced understanding of leadership's role in public sector change management.

### Suggestions for Further Studies

Future research could use longitudinal designs to examine change dynamics over time or explore

mediators like organisational culture. Comparative studies across Nigerian states or mixed-methods approaches incorporating qualitative insights from senior officials would further enrich the understanding of leadership's impact on organisational change.

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## Leadership Styles and Organizational Change in Nigeria's Public and Private Sectors: A Study of Delta State University and PremiumTrust Bank

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### Abstract

*Leadership significantly influences organizational transformation in Nigeria, as both public and private sectors encounter socio-economic, political, and technological challenges. This research investigates the impact of leadership styles on organizational change at Delta State University (DELSU) and PremiumTrust Bank during the period from 2021 to 2025. Influenced by New Public Management and Contingency Theory, the study employs a qualitative comparative case study framework, examining secondary data from institutional reports, policy documents, peer-reviewed research, and reliable media outlets through thematic content analysis. Results show that DELSU utilizes transformational and participative leadership styles, fostering employee involvement and incremental cultural shifts within bureaucratic limitations. In contrast, PremiumTrust Bank, led by Dr. Emmanuel Efe Emefienim, employs transformational, adaptable, and digitally-focused leadership, facilitating swift technological adoption, structural changes, adherence to regulations, and competitive advancement. The research emphasizes that the effectiveness of leadership relies on its context, affecting how quickly and in what way change occurs. Suggestions involve promoting participatory-transformational leadership in public sectors and adopting adaptable, digitally-focused leadership in private entities to boost innovation and improve operational effectiveness. This study enhances comprehension of how leadership influences organizational change in Nigeria by offering a sector-specific comparative view, stressing the importance of harmony between leadership style, institutional setting, and environmental requirements.*

**Keywords:** *Leadership Styles, Organizational Change, Transformational Leadership, Public and Private Sectors, Digital Leadership, Delta State University & PremiumTrust Bank.*

### Introduction

Leadership serves as a key catalyst for organizational change in Nigeria, where institutions function amid unstable socio-economic environments, political influence, and growing pressures for technological integration. Nigerian research indicates that transformational leadership, especially via personal attention and cognitive encouragement, boosts employee dedication and organizational flexibility (Ohaegbulem et al., 2024; Nwibere, 2023). In manufacturing companies, leadership style influences the effect of digital transformation on worker productivity, highlighting the importance of leaders who merge technological insight with people-oriented strategies (Laoye, 2025). Likewise, research on the reorganization of the Nigerian National Petroleum Corporation (NNPC) into NNPC Limited indicates that

democratic and transformational leadership styles are essential for enhancing transparency, accountability, and operational effectiveness amid significant reforms (Igwe, Orovwiro & Okwurume, 2025; Laguo et al., 2021). In the public sector, obstacles like bureaucratic stagnation, insufficient institutional capacity, and inadequate leadership development continue to hinder sustainable change (Abasilim, Durojaiye & Gberville, 2022).

Even with these contributions, there remains a lack of comparative analysis regarding how leadership influences organizational change in Nigeria's public and private sectors. Public organizations frequently encounter limitations due to established bureaucracy and political influence, whereas private companies experience fierce market rivalry and a drive to innovate. Current studies often

analyze each sector separately, resulting in a lack of insight into how leadership practices vary, intersect, or may be applied across different areas. This research tackles that gap by thoroughly analyzing leadership styles—especially transformational and digital leadership—within public and private sectors in Nigeria, emphasizing how contextual factors influence change processes and pinpointing avenues for encouraging lasting organizational transformation.

### **Research Objectives**

The objectives of this study are to:

1. explore how leadership styles shape organizational change processes in Delta State University and PremiumTrust Bank between 2021 and 2025.
2. analyze the similarities and differences in leadership practices influencing employee commitment and institutional transformation across Nigeria's public and private sectors.

### **Research Questions**

1. How do leadership styles shape organizational change in Delta State University and PremiumTrust Bank during 2021–2025?
2. What are the similarities and differences in leadership practices affecting employee commitment and institutional transformation in Nigeria's public and private sectors, and what ways can these be improved?

### **Scope, Delimitation, and Justification**

This research explores leadership and organizational transformation at Delta State University (DELSU) and PremiumTrust Bank from 2021 to 2025. DELSU demonstrates leadership in a bureaucratic, policy-oriented setting, whereas PremiumTrust Bank, a rapidly expanding private organization, exemplifies how transformational leadership fosters digital innovation and expansion. The emphasis is on how leadership approaches—especially transformational, distributed, and digital—impact reforms, technology adoption, employee engagement, and organizational culture. This research is restricted to these two organizations and does not encompass all universities, banks, or national economic strategies. The selection is supported by their differing contexts: DELSU offers perspectives on leadership in public higher education, whereas PremiumTrust Bank emphasizes leadership in a competitive private industry. Combined, they provide a comprehensive perspective on how leaders navigate change in Nigeria's shifting socio-economic and technological environment.

### **Literature Review**

#### **Conceptualizing Leadership and Organizational Change**

Leadership and organizational change are intricately connected, with leadership serving as a key factor in influencing organizational direction, employee conduct, and institutional flexibility. Worldwide, leadership is characterized not just by the use of authority but as a relational process that inspires individuals to work towards common objectives in dynamic situations (Bourne, 2017). Nigerian scholarship supports this view, highlighting that leadership is crucial for organizational success, particularly when socio-political factors and institutional shortcomings hinder managerial results (Mukoro, 2021). In this regard, leadership is both situational and fluid, necessitating harmony between approach, context, and organizational requirements.

Organizational change, conversely, is viewed as the intentional alteration of structures, processes, cultures, or technologies within organizations to address internal demands or external disruptions. Researchers like Okereka and Okolie (2022) observe that in Nigeria's public sector, change typically relates to reforms intended to tackle inefficiency, whereas in private companies, it is associated with innovation, competitiveness, and survival in unstable markets. Change can be gradual—small enhancements in processes—or transformational, entailing profound alterations in culture and strategy. In both instances, leadership influences whether change initiatives are accepted or opposed.

Significantly, in Nigeria, the understanding of leadership and change cannot be separated from the country's institutional context. The public sector, characterized by bureaucracy, political influence, and restricted accountability, frequently undergoes gradual change that depends significantly on consensus and authoritative directives (Onyenike & Abe, 2021). On the other hand, the private sector flourishes through agility, with leaders required to embrace innovative and transformative strategies to maintain growth in the face of intense competition, especially in technology-focused fields such as banking and telecommunications (Okereka & Denedo, 2023). Therefore, leadership and organizational change, although universal concepts, appear distinctly in Nigerian settings, highlighting the necessity of sector-specific evaluation.

#### **Leadership as the Independent Variable**

Leadership, as the independent factor, significantly influences the direction and effectiveness of organizational change. Leadership theories emphasize various styles, yet their applicability frequently relies on the context. Transformational leadership, highlighting vision, inspiration, and motivation, has been broadly acknowledged as essential for fostering commitment and innovation throughout change processes (Peng et al., 2020). In

Nigeria, Okereka and Denedo (2023) empirically illustrated this at Delta State University, Abraka, revealing that transformational leadership practices greatly improve employee productivity, organizational commitment, and behavioral alignment—elements that are essential for effective change.

In addition to transformational leadership, participatory and distributed approaches have gained more support within Nigeria's public administration research. Mukoro (2021) posits that collective accountability and collaborative decision-making enhance institutional responsiveness, especially in bureaucratic environments where centralized control frequently hampers innovation. In a similar vein, Okereka and Aliogo (2022) noted that engaging employees in leadership decisions in the Delta State Public Service enhanced organizational productivity and diminished resistance to change efforts. These results correspond with global views, like the distributed leadership model by Jones and Harvey (2017), yet are unique to the Nigerian setting where hierarchical frameworks frequently obstruct widespread involvement.

An additional facet of leadership that is becoming more significant in Nigeria is digital and adaptive leadership. Due to the emergence of fintech, cashless policy changes, and digital transformation post-COVID, leaders in the private sector—especially within banking—must demonstrate agility, digital competence, and ethical awareness in driving change (Quaquebeke & Gerpott, 2023). PremiumTrust Bank, which received its license from the Central Bank of Nigeria in December 2021 and began operations in April 2022, illustrates this reality as a newcomer facing fierce competition and technological changes in the banking sector (Independent, 2022). Its rise demonstrates that leadership must strike a balance between regulatory adherence, swift innovation, and customer-centric strategies to stay competitive. This illustrates Mark and Erude's (2023) contingency assertion that effective leadership in change management relies on matching leadership strategies with situational requirements.

Grasping leadership in Nigeria acts as a driving force for organizational transformation, with research indicating that transformational, participatory, and adaptive approaches improve change results in various sectors. However, difficulties continue when leadership is transactional or authoritarian, frequently leading to pushback, weak commitment, and less than ideal change results. Comprehending leadership as the independent variable necessitates not only acknowledgment of leadership theories but also appreciation of Nigeria's unique institutional characteristics and changing socio-economic environment.

## **Leadership and Organizational Change in Nigeria**

Leadership continues to be crucial in influencing the results of organizational change within Nigeria's public and private sectors. Contingency theorists contend that the effectiveness of leadership hinges on the match between organizational circumstances and management approaches, particularly in environments characterized by uncertainty and intricacy (Mark & Erude, 2023). In Nigerian universities, transformational leadership has been associated with staff dedication and institutional efficiency, emphasizing the significance of visionary leadership in facilitating lasting change (Okereka, 2021). Likewise, Mukoro (2017) highlights that participatory leadership enhances responsiveness and accountability, allowing institutions to adjust to changing governance and management challenges.

In the banking sector, Adeosun (2020) shows that leadership style greatly affects innovation and employee performance, with transformational leadership being especially potent in fostering adaptive capacity. Onyeneke and Abe (2021) additionally demonstrate that leadership focused on change improves employee acceptance of reforms, bolstering organizational preparedness for transformation. In contrast, transactional leadership has faced criticism for securing immediate compliance while failing to promote lasting transformation (Leo & Wickenberg, 2013). The increasing importance of digital leadership demands consideration as well. Eneh (2022) notes that Nigerian banks are progressively depending on leaders who possess technological foresight and the ability to adapt in order to manage digital transformation. This corresponds with international research indicating that artificial intelligence and digital technologies are transforming leader-follower relationships (Quaquebeke & Gerpott, 2023). PremiumTrust Bank, launched in April 2022, has established itself as a tech-focused institution, leveraging innovation and strategic leadership to enhance market entry and expansion (Independent, 2022). These findings strengthen the claim that leadership approaches and tactics directly affect the effectiveness of organizational change, especially in Nigeria's fast-paced banking and higher education sectors.

## **The Leadership–Change Nexus**

Leadership is a critical factor in how organizations manage, execute, and uphold change. In Nigeria, where government bodies frequently face bureaucratic inflexibility and private firms function in intensely competitive settings, leadership approaches greatly affect staff preparedness,

dedication, and the enduring success of change efforts (Mark & Erude, 2023).

### **Leadership Influence on Organizational Change**

Transformational leadership, characterized by an inspiring vision, intellectual stimulation, and individualized consideration, has repeatedly been linked to enhanced employee motivation and successful organizational change (Onyeneke & Abe, 2021). In contrast, transactional and authoritarian approaches, while effective for securing prompt compliance, often impede creativity and the sustainability of change over time (Leo & Wickenberg, 2013). Strategies for distributed and participatory leadership that foster inclusion and shared decision-making reduce resistance and increase ownership of change, particularly in bureaucratic settings (Mukoro, 2017).

### **Case Study: Delta State University (DELSU) and PremiumTrust Bank**

Transformational and participatory leadership approaches at Delta State University (DELSU) have played a crucial role in fostering institutional change in a bureaucratic setting. Okereka (2021) discovered that leaders who effectively communicate visions and engage staff in decision-making boost employees' sense of ownership regarding reforms, diminish resistance, and improve commitment. Participatory frameworks at DELSU have demonstrated enhancements in responsiveness, productivity, and overall institutional efficiency (Okereka & Aliogo, 2021). In the private sector, PremiumTrust Bank demonstrates the influence of leadership in a fast-changing, competitive environment. With Dr. Emmanuel Efe Emefienim at the helm, the bank has reached significant milestones, such as timely adherence to the Central Bank of Nigeria's ₦200 billion minimum capital threshold, swift asset expansion, and noteworthy profit surges (Alagbe, 2025; Premium Times, 2025; BusinessDay, 2025). Dr. Emefienim's leadership merges transformational, adaptive, and digital-focused strategies, prioritizing strategic vision, operational efficiency, innovation, and employee involvement (Eneh, 2022; Quaquebeke & Gerpott, 2023). This demonstrates that leadership needs to be customized to specific industry contexts to successfully facilitate organizational change.

### **Leadership and Organizational Culture**

Both DELSU and PremiumTrust Bank illustrate that the effectiveness of leadership is strongly linked to the culture of the organization. At DELSU, promoting involvement, interaction, and communication within bureaucratic limitations has improved employees' preparedness for both gradual and transformative reforms (Okereka, 2021);

Onyeneke & Abe, 2021). At PremiumTrust Bank, fostering a culture of responsibility, teamwork, and technological flexibility has facilitated swift change and competitive advantage, highlighting the significance of culture-aligned leadership in private entities.

Comprehending the experiences of DELSU and PremiumTrust Bank supports the tenets of contingency theory: the efficacy of leadership relies on the interaction among organizational context, sector demands, and the characteristics of change initiatives (Mark & Erude, 2023). Transformational and participative leadership styles are successful in managing bureaucratic public entities, while transformational, adaptive, and digital-focused strategies—like those demonstrated by Dr. Emefienim—are crucial for attaining swift, sustainable progress in private sector companies. Collectively, these instances highlight the essential importance of leadership in influencing organizational preparedness, dedication, and sustained success amid times of transition.

### **Theoretical Framework**

This study utilizes New Public Management (NPM) and Contingency Theory to analyze leadership and organizational transformation in Nigeria's public and private sectors. NPM, based on reforming public administration, highlights the importance of efficiency, accountability, decentralization, and incorporating private-sector methods within public organizations (Adebayo, 2014; Ezeani, 2015). Its significance is in elucidating current reform initiatives in Nigerian universities like Delta State University, where bureaucratic limitations require more results-driven leadership. Simultaneously, the concepts of NPM align with private entities like PremiumTrust Bank, where competitiveness, customer orientation, and outcome-focused strategies are essential for ongoing success and expansion.

Alongside NPM, Contingency Theory argues that the effectiveness of leadership relies on the alignment between leadership style, organizational culture, and situational requirements (Fiedler, 1967). In Nigeria, Mark and Erude (2023) suggest that contingency theory offers a useful perspective for comprehending how institutional environments influence leadership results, especially in contexts with differing objectives and resources like universities and banks. Through the integration of NPM and Contingency Theory, this research places leadership within the frameworks of reform and efficiency as well as the contextual factors that shape leaders' impact on organizational change. This twofold framework enables an equitable comparative evaluation of DELSU and PremiumTrust Bank from 2021 to 2025.

**Conceptual Framework: Leadership and Organizational Change in Nigeria  
(NPM + Contingency Theory)**

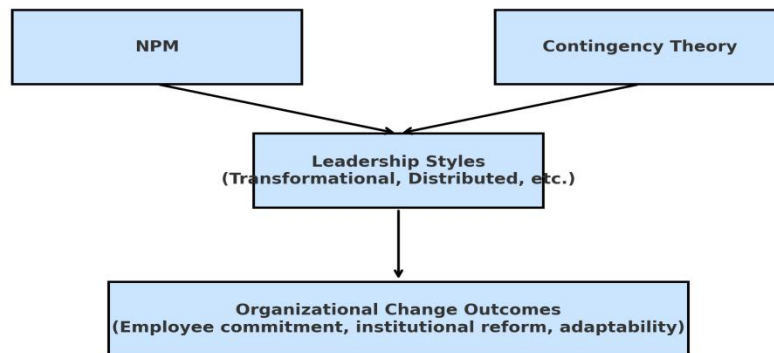


**Figure 1**

Conceptual Framework for Leadership and Organizational Change in Nigeria (NPM & Contingency Theory). *Authors design.*

### Gaps in the Literature

Although the current literature offers important perspectives on leadership and organizational change in Nigeria, there are still significant gaps, especially concerning the comparative dynamics of public and private sectors. The majority of Nigerian research emphasizes only public entities, including universities and ministries (e.g., Okereka, 2021; Okereka & Aliogo, 2021), or private sectors, like banks (Eneh, 2022; Quaquebeke & Gerpott, 2023). There is a scarcity of empirical studies that concurrently investigate both sectors to pinpoint similar and different patterns of leadership impact on change results. Limited research has focused on the timeframe of 2021–2025, which holds particular importance because of post-COVID recovery, digital transformation, and regulatory changes. This time has experienced significant changes in organizational frameworks, technology integration, and employee involvement strategies, but the research has not adequately addressed how leadership approaches have evolved in response to these developments. Despite the individual examination of transformational, transactional, distributed, and digital leadership styles (Onyeneke & Abe, 2021; Eneh, 2022; Mukoro, 2017), research connecting particular leadership styles to quantifiable change outcomes in various institutional settings in Nigeria remains limited. The significance of digital leadership in driving swift change in private sector banks such as PremiumTrust Bank is well established, yet equivalent comparative evaluations in public institutions are mostly lacking. Current research frequently focuses on structural or procedural elements of change management, while paying little regard to psychological factors like employee attitudes, readiness, and commitment (Okereka,

2021; Onyeneke & Abe, 2021). These human factors are essential, particularly in bureaucratic public organizations where opposition to change is a frequent issue.

### Research Method

This study utilizes a qualitative, comparative case study approach to analyze the impact of leadership on organizational change within Nigerian public and private sector entities, concentrating on Delta State University (DELSU) and PremiumTrust Bank. It depends solely on secondary sources such as organizational reports, policy documents, published research, and trustworthy media reports to investigate leadership practices, institutional culture, and outcomes of change (Yin, 2018; Creswell & Poth, 2018). Data are examined through thematic content analysis, pinpointing essential patterns and themes concerning leadership styles and their influence on organizational change. A comparative perspective emphasizes variations and commonalities across sectors, especially in how transformational, participatory, and digital/adaptive leadership methods either promote or hinder change efforts. The research maintains rigor and reliability by utilizing peer-reviewed sources and official institutional documents to create a cohesive, evidence-driven comprehension of the leadership–change relationship in Nigeria (Braun & Clarke, 2006; Lincoln & Guba, 1985).

### Findings and Discussion

The examination of secondary data from Delta State University (DELSU) and PremiumTrust Bank uncovers clear trends in the influence of leadership styles on organizational change in both public and private sectors in Nigeria. Through thematic content analysis, three key themes were identified:

leadership approaches, results of organizational change, and sectoral differences.

### Leadership Strategies and Practices

At DELSU, leadership mainly focuses on transformational and participatory approaches, highlighting teamwork, communication, and staff engagement in decision-making activities. Okereka (2021) along with Okereka and Aliogo (2021) suggest that these methods enhance employee dedication, lessen opposition, and facilitate gradual changes within the limits of bureaucratic frameworks. Conversely, PremiumTrust Bank represents a blend of transformational, adaptive, and digitally-focused leadership guided by Dr. Emmanuel Efe Emefienim. Reports suggest that Dr. Emefienim's strategic vision, focus on technology integration, and people-oriented management have propelled swift operational changes, ensured regulatory adherence—including satisfying the CBN ₦200 billion capital requirement—and improved organizational competitiveness (Eneh, 2022; Premium Times, 2025; Alagbe, 2025). This comparison highlights that the effectiveness of leadership depends on the sectoral context, in line with contingency theory (Mark & Erude, 2023).

### Organizational Change Outcomes

The results show that the style of leadership directly influences the character and effectiveness of organizational change. At DELSU, participatory and transformational leadership enabled gradual and cultural changes, enhancing staff involvement and responsiveness despite institutional constraints. In contrast, the leadership at PremiumTrust Bank encouraged swift structural and technological transformations, nurturing agility, innovation, and trust among stakeholders. These results demonstrate the relationship between leadership behaviors and organizational culture, emphasizing that successful leadership needs to adjust to institutional limitations and market requirements (Onyeneke & Abe, 2021; Eneh, 2022).

### Sectoral Differences and Consequences

The comparison shows distinct differences among sectors. Public sector entities, limited by red tape and political supervision, depend on inclusive, people-focused leadership to implement lasting change. Private sector companies, encountering competitive and regulatory challenges, gain from strong, adaptable, and digitally proficient leadership to facilitate swift transformation. These findings strengthen the idea that leadership cannot

be one-size-fits-all; its effectiveness relies on the context, necessitating harmony with organizational objectives, employee anticipations, and external influences (Mukoro, 2017; Mark & Erude, 2023).

### Synthesis and Theoretical Implications

Combining these insights with existing research indicates that leadership style is not only procedural but also strategic and psychological, affecting both structural reforms and employee perceptions of change. Transformational and participatory leadership foster ownership and preparedness in bureaucratic settings, whereas adaptive and digital-focused leadership allows for competitive agility in changing conditions. Collectively, these perspectives foster a detailed comprehension of the leadership-change connection in Nigeria, filling voids in comparative sector research and offering empirical backing for contingency-oriented leadership theory.

### Conclusion

Leadership plays a crucial role in driving organizational change within Nigerian institutions. Transformational and participatory leadership at DELSU improved employee involvement and supported gradual reforms, whereas transformational, adaptive, and digitally-focused leadership at PremiumTrust Bank allowed for swift, technology-led changes and adherence to regulations. These results emphasize that the effectiveness of leadership relies on the context (Mark & Erude, 2023; Onyeneke & Abe, 2021).

### Recommendations

The following are policy recommendations for the study:

1. Public Sector: Cultivate leaders possessing transformational and participatory abilities to enhance employee involvement and decrease bureaucratic opposition.
2. Private Sector: Embrace flexible and digital-driven leadership to foster innovation, responsiveness, and adherence in competitive landscapes.

### Contribution to Knowledge

This study offers comparative perspectives on leadership and organizational transformation in Nigeria, illustrating how leadership styles specific to sectors influence the effectiveness of change efforts and highlighting the necessity of aligning leadership approaches with organizational context.

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## Local Government Autonomy and Fiscal Decentralization in Nigeria

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### Abstract

*Local government autonomy in a federal structure means local government, the third layer of a federal government enjoys a distinct separate existence and independence from the control of the state and federal governments: it is not an extension of the state but an independent formation which discharges its responsibilities as provided by the constitution. It is somewhat worrisome that local government councils in Nigeria have no political, financial and bureaucratic autonomy. Various related literature reveal that Governors in Nigeria sack democratically elected local government councils immediately after their swearing-in as elected State Governors and constitute caretaker committees; Governors are in charge of Local Government Councils' Purse through the State and Local Government Joint Account; and Local Government Councils lack full blast financial autonomy. The major objective of this paper is to examine the effects of fiscal decentralization on Local Government Autonomy in Nigeria, using a qualitative research method which focused on secondary method of eliciting data from existing sources. The theoretical framework applied for this paper is federalism, whose leading proponents are K.C Wheare, William Riker and Dyke et al. This paper also peruses at different formulae adopted by Nigeria to allocate revenue (1946 – 2004) and the Supreme Court of Nigeria judgment in the case of Attorney – General Federation vs. Attorney-General, Abia State and 35 others. The study finds that the state and local government Joint Account worked hardship on local government councils in Nigeria among others. The paper finally made some recommendations that would help improve service delivery in local government councils in Nigeria among others.*

**Keywords:** Local Government Council, State Government, Federal Government. Autonomy, Fiscal, Decentralization,

### Introduction

Local Government Autonomy in a federal's design means local government, the third layer of a federal government enjoys a distinct separate existence and independence from the control of the state and federal governments. It is not an extension of the state but an independent formation which discharges its responsibilities as provided by the constitution. It is somewhat worrisome that local government councils in Nigeria have no political, financial and bureaucratic autonomy. Various related literature reveal that Governors in Nigeria dissolve local government councils immediately after their swearing-in as democratically elected State-Governors and constitute caretaker committees with a view to using them as conduit pipes to drain the local Government Councils weak purse among other reasons.

In addition, in Nigeria, Governors are in control of Local Government Councils purse through the State and Local Government Joint Account which makes it cumbersome for the realization of complete fiscal autonomy of the local government councils in Nigeria, thereby making development, goods and services delivery at the grassroot not achieved. The local government councils lack full blast bureaucratic autonomy of hiring, firing, managing and servicing their human resources without the interferences of the state governments in Nigeria. It is pertinent to deduce that in Nigeria, local government councils are adjuncts of the state government and against this backdrop, local government councils in Nigeria function as mere extension of State Ministry of Local Government and Chieftaincy Affairs.

State Governors and the Administration of Local Governments in Nigeria”. implications for “Good Governance”, contended that autonomy of the local government envisages the political, fiscal and administrative aspects of its existence. Fiscal Decentralization means interrelationships at the Federal, State and Local Government levels in a state that operates federalism, these levels of government have their constitutionally responsibilities and therefore need a stable, strong and reliable sources of revenue with which they can discharge their constitutional responsibilities to the citizenry and involve in the act of governance and this demands allocation of resources and or value. This is the rationale for revenue allocation. Revenue Allocation is the sharing of country’s financial resources among the layers of governments in the federation. This enhances economic growth and development across board and also reduces intergovernmental tensions and promotes national unity. Drawing from Mukoro, (2019), he contended that the essence of fiscal federalism cannot be over emphasized. He further averred that it allows for governance to get very near to the grassroot; makes effective decisions making in the levels of government and exposes incompetent and fraudulent government officials at all levels of government. He went on to opine that without effective and efficient fiscal decentralization, local government will lack autonomy and capacity to deliver goods and services to the grassroot. It is very unfortunate that local governments in Nigeria do not have autonomy. This is the nub of the matter that has flared up this paper.

### Research Questions.

The following research questions are designed to guide the study

- i. To what extent has the introduction of caretaker committees to local government administration by State Governors affected grassroots’ participation in local politics in Nigeria.
- ii. Has the State and Local Government Joint Account worked hardship on Local Government Councils in Nigeria.
- iii. Are State Governments through their local government service commission affirm monopoly of personnel matters in local government administration in Nigeria.
- iv. Is the judgment delivered by the Supreme Court of Nigeria on the 11<sup>th</sup> day of July, 2024 in the case of Attorney – General of the Federation Vs Attorney – General of Abia State and 35 others, wherein the Supreme Court of Nigeria granted financial autonomy to democratically elected local government councils in Nigeria constitutional.

### Objectives of the Study

The major objective of the study is to examine the effects of fiscal decentralization on local government autonomy in Nigeria. The specific objectives are examined hereunder:

- to ascertain the impact of caretaker committees on the grassroots’ participation in local politics in Nigeria.
- to explain the hardships the State and Local Government Joint Account has worked on local government councils in Nigeria.
- i. to evaluate the monopoly of personnel matters in local government administration through local government service commission in Nigeria.
- ii. to look into the judgement delivered by the Supreme Court of Nigeria on the 11<sup>th</sup> day of July, 2024 in the case of Attorney-General of the Federation Vs. Attorney-General of Abia State and 35 others, wherein the Supreme Court of Nigeria granted financial autonomy to democratically elected local government in Nigeria.

### Literature Review

Several scholars have carried out numerous studies on Local Government Autonomy and Fiscal Decentralization in Nigeria. For instance, in a paper presented by Omoniyi (2013) titled “Local Government autonomy: Will Governors Succumb? He advanced that since the introduction of caretaker committees regime into local government councils in Nigeria, there had been cases of illegal diversion of funds belonging to local government councils by the State Governors. The extant constitution of the Federal Republic of Nigeria provides in Section 7 (1) for a sustainable democratically elected local government councils in Nigeria.

The introduction of caretaker committees in local government councils in Nigeria is an aberration of the extant constitution. It is a conduit pipe for the State Governors to drain the weak purse of the local government councils and it was done with the intention of the State Governors to dismantle the autonomy of local government councils in Nigeria. The local government funds have been crippled and bastardized through the establishment of the Joint Account and Allocation Committee (JAAC) chaired by the State Government Representatives. The Joint Account and Allocation Committee (JAAC) is detrimental to local government councils because it stops the local government councils from managing and controlling their monies. It has to be pointed out that local government through the power and authority of Joint Account and Allocation Committee, Local Government Councils are deprived of their funds to discharge their democratic obligations. To this extent, local government councils are subservient to state

governments' controls and this has effects on local government councils' obligations to the grassroots.

Besides, Adeyemo (2005) averred that the fight for local government autonomy in Nigeria has been a sustainable fight. He also posited that the hijack of local government functions and revenue base by the state governments is another fundamental area of dismantling the autonomy of the Local Government Councils in Nigeria. The conflictual revenue boards by the state governments stop and disturb the revenue base of the local government councils. Parallel boards set-up by the state government are markets, motor parks, building plans approval and forest royalty collection fund etc. Against all these backdrops, the problem of local government autonomy are so cumbersome to resolve. Local Government Autonomy seems weakest in the country in the sphere of personnel administration and it is one area which is not given consideration in terms of coverage constitutionally, but rather administrative provision. This may be the reason why the state governments through their local government service commission in Nigeria affirms monopoly of personnel matters in local government administration. The 1976 local government reforms had only asserted weakly that local government shall have fundamental control over local and staff affairs. What happens in one state is also applicable in all other states with respect to local government personnel especially by virtue of the meeting of Local Government Service Commission all over the country.

The Local Government Service Commissions exchange their annual reports to make them have an idea of what others are doing. The conspiracy between the local government service commission and state governments has put personnel administration full under their control. Despite the advantages of this option, encompassing uniformity and reduced politicization in personnel administration, Local government Autonomy in the matter is limited and can distribute their development in rural area in Nigeria. Quadri (2013) submitted that powers should be given to the local government councils to have substantial control over local affairs as well as the staff institutional and financial powers to initiate, direct provision of services, determine and implement projects so as to compliment the activities of the state and federal governments in the areas, and to ensure through devolution of functions of these councils through the active participation of the people and their traditional institutions that local initiatives and responses to local needs and conditions are maximized.

Imhanlahimi (2019) adumbrated that fiscal autonomy in local government is generally believed to be the best tool for effective and efficient service delivery in rural areas. Okorie, Obasi, Nwosu, Chukwu, Akanu and Nwuta (2023) deduced that there is no doubt that the

extant constitution erroneously empowers the Governors of control over local government councils through State and Local Government Joint Account which makes it impossible for the realization of full fiscal autonomy of the local government, thereby making development, goods and service delivery at the local level unreliable. They went further to state that fund allocated to local government through revenue sharing have consistently been hijacked by the various state governments through the idea of State Local Government Joint Account (SLGJA).

Osakwe (1999), in his book "Fiscal Relations among three tiers of Government in Nigeria". He contended that in fiscal federalism and Economic Development, local government fiscal autonomy is derived from the fiscal federalism as it is operated in the Nigerian Federalism. He further posited that fiscal federalism is the transfer of functions, resources and authority to peripheral levels of government. He also relates the disposition of tax powers retention of revenue and methods adopted in sharing centrally collected revenue in accordance with the extant constitutional responsibilities of all levels of governments. Olabisi (2019) advanced that the need for local government autonomy is to allow the local government specific powers to performance series of functions, plans, formulate and execute its own policies, programmes and projects and its own rules and regulations as expected for its local needs.

Adeyemo (Supra) noted that financial autonomy under a federal system of government is that each government enjoys or separate existence and financial independence from the control of the other government. He further noted that it is an autonomy which requires not just the legal and physical existence of an apparatus of government such as financial autonomy enjoyed by Legislative Assembly and Governors. Local government should be autonomous having freedom to hire and manage its own staff, raise and manage its own finance, make policies, laws and provide services within the limits of its resources and function without interferences.

Vincent (2001), averred that matured democratic societies practicing federalism have somehow managed to evolve a satisfactory balance among the federal, state and local government tiers of government and sharing of the available resources among the layers of government to fulfill the respective functions designed for each level of government in their country's constitution. The exercise operates in the spirit of equity, justice and fairness in a polity that aspires for progress, stability, peace and egalitarianism within its human community.

Awa (1976) averred that a general problem among the federating units in a country is "how to allocate revenue among levels of government and among the

units so that each government may have the power to perform the functions assigned to them. The government uses her instrument of fiscal policy to alter the shape of Revenue Allocation to promote growth, equity in the redistribution of resources and stability within the polity. Bello Imam (1992) adumerated that the federal government has exclusive legislative list which only the federal government can legislate on, as the state government has power to legislate on concurrent legislative list and the fourth schedule of the extant constitution provides for the duties of local government.

Ordinarilly, fiscal policy is to achieve the desired objective of allocation, redistribution, stabilization and economic growth. Komolafe (1999) posted that policy is a fundamental tool used in the pursuit of social and political objective, especially those which aim to reduce inequalities of wealth and opportunity. The inchoate state of democratic government in Nigeria makes the operation of fiscal federalism to be fraught with a lot of problems. Orubu, (1999) contended that fiscal system will be said to be relatively decentralized if lower tiers of government exercise a relatively high degree of freedom in raising taxes or revenue needed to carry out their expenditure, responsibilities, since such responsibilities expand overtime.

Anyawu (1997) advanced that a decentralized system of Revenue sharing means that the other tiers of government becomes empowered and responsible for the management of huge financial resources that would have gone to the centre under a regime of faulted practice as it obtained in Nigeria. The revenue or resource concerned belong to the community and the taxing and collecting agency is acting on behalf of the community. Amah (2018) in his study "Devolution of Power to Local Government: Appraising local government Autonomy under Nigerian federation; examined the issue of local government autonomy under a federal government and recommends devolution of full political autonomy to local governments.

Asiegbu (2025) contended that the 1976 local government reforms sought to decentralize governance and enhance grassroot development. He further averred that for local government councils to sustain their operations, they have been collecting statutory allocation from the federation account. That between 1999 and 2002, local government councils received their allocation directly from the Joint Federation Allocation Committee (JFAC) of the Central Bank of Nigeria. Later, the Joint Allocation Account Committee (JAAC) was established to manage projects that State and Local Government Councils could jointly finance. It was at this point Direct Allocation to Local Government Councils was stopped with Governors

having unrestricted access to Local Government Councils' funds.

### **Theoretical Framework**

The theoretical framework adopted for this study is federalism. The leading proponent of the theory is K.C Wheare. In his study titled "Federal Government" he submitted that federation is a method of dividing powes so that general and regional government are each other within a sphere, co-ordinate and independent. (Wheare, 1964). Other scholars are William Riker, who adumbrated that federalism is a system of government consisting of autonomous units that tied together within one country. Steiner and Dyke (1995) deduced that it is a division of power between central and regional governments. Such that neither is subordinate to other. Satisfying the expectations and demands of the citizenry boosts interaction among all the layers of government where the ability and capability to meet the responsibilities are looked at as well as contradictions and challenges that follows.

Federalism as a concept of governance is a political and administrative framework in which power is shared by different constituent units of a federating union which are supposedly or relatively autonomous. So, when demand on government and the need to meet them adequately and promptly arise, a proper division of functions according to the corresponding financial powers between the different levels of government becomes imperative. Ihediora averred that the concept of fiscal federalism in Nigeria sees it as the division of powers, functions, duties and financial resources among different levels of government such as federal, state and local governments in a federation.

It is the application of the federal principle in resource mobilization and allocation within and among the constituent units in the federation in an arrangement that involves intergovernmental fiscal relations. Resource control is premised on Revenue Allocation.

### **Local Government Autonomy**

Autonomy under the federal system as each tier of government enjoying a separate existence and independences from the cntrol of the other government. Autonomy requires not just the legal and physical existence of an apparatus of government as the legislative assembly, government court etc, but that each government must exist not as an adjunct of another government but as autonomous entity in the sense of being able to exercise its own will in the conduct of its affairs free from direction of another government.

Anayochukwu and Ani (2021) in their study on local government autonomy in Nigeria: Its problems and prospects. Their study adopted a quantitative research approach to discover and explain the existence of

constitutional ambiguities or inconsistencies that tend to provide the drive from unethical state officials to nurse the inordinate desire for hedging in the local government left, right and centre. Their finding revealed that there is jurisdiction rivalry between the state and local governments like rates collected, distribution of fertilizers, and other farm materials like pesticides. Their study concluded that legal and constitutional requirement, no matter how full proof they may be, cannot guarantee true autonomy for the local government as a tier, unless the political will exists on the part of a statesman to streamline and stabilize this very critical level of government. The study recommended that local government autonomy is fastened on an improved revenue base, adherence to constitutional provisions, political stability, accountability and transparency in governance.

To enhance the efficiency and effectiveness of the local government system, there is an urgent need to amend the constitution and delimit areas of inter-government functions especially in electoral matters, creation of local government, tenure of councils, and finance. The council elections should be conducted as at when due, to avoid a democratic vacuum. This is dangerous to the government. Again, Felix and Okonette (2018), on their parts carried out a study on politics of local government autonomy in Nigeria. Their study also adopted a quantitative research approach and thematic analysis to discover and explain that in Nigeria, the federal and state governments mostly transfer the kind of autonomy shaped by ethnic consideration to the local government. Also, that the blockage of local government autonomy is further evident at the fiscal and management employment stages than in any other areas of inter-governmental dealings. The study concluded that local government is a distinctive political arrangement and the degree of autonomy it enjoys from federal or regional or state government corresponds with the politics of the state.

In addition, Samson and Stanley (2015), in their study "State Governors as albaross to democracy and local self-government in Nigeria. The study adopted historical and content analysis method to discover that since the year 1999 and emergence of the fourth Republic, not less than seven State Governors have dismissed or dissolved local government councils in the country. The study further revealed that despite dismissal of elected local government officials, State Governors deny local governments access to statutory allocation or deny them of their full responsibilities. The study recommends a full autonomy for local governments disregarding the meddling of State Governors and that the people at the grassroots should be empowered to sack their representatives either through recall or by denying them the opportunity for another term of office through the ballot.

There are three types of autonomy. Fiscal autonomy means local government managing their own finances and collecting revenue without molestation from the state government.

Bureaucratic and Administrative autonomy means local government hiring and firing their own staff from junior cadre to senior staff. Political autonomy means that state government do not have the capacity to dissolve local government councils and put in place of caretaker committees and or interim governments.

### **Importance of Local Government Autonomy**

The importance of autonomy in local government councils cannot be over emphasized. Autonomy increases accountability of local government council to the grassroots. This leads to better life for the periphery. Besides, Autonomy leads to local government area development and it makes local government councils to function without approval from the state government. Local government councils have so much to do hence autonomy. Financial autonomy is the independent management of local government own funds and it makes local government councils to take decision without consulting with the state government. Local government autonomy would make local government councils to tackle their security challenges in their areas.

Again, local government autonomy would improve on delivery essential services like healthcare, education, sanitation and infrastructural development to the grassroots without interference from the state government.

### **Local Government Autonomy and Corruption**

Regardless of the advantages of local government autonomy in Nigeria, it will not expel corruption in local government councils. Officials of local government councils in the past corruptly enriched themselves with local government resources. During the regime of Chief Olusegun Obasanjo, as the President of the Federal Republic of Nigeria, local government councils were receiving allocations directly from the federation account and local government Chief Executive were enriching themselves with the allocations they received from the federation account. The local government legislative arm which is charged with the responsibility of checking the excesses of the Chief Executive failed in their responsibility because they compromised with the Chief Executive of the Local Government Councils.

### **Fiscal Decentralization in Nigeria**

The Nigerian State operates federalism with a federal government, 36 states and 774 local government areas. In federalism, fiscal responsibilities are vested on all the layers of government, federal, state and local

governments. Mukoro, (Supra) averred that federalism means a series of legal and administrative relationships established among units of government possessing varying degrees of real authority and jurisdiction autonomy.

He further submitted that this is the co-existence of both national and sub-national governments which performs the economic functions required by the people of a society or country. In this co-existence, each layer of government has its own expenditure responsibilities and taxing powers. It is the division of fiscal powers among sovereign levels of government in a federation.

Again, decentralization is an inevitable ingredient of governance in Nigerian federation. He further explained that decentralization ascertains the extent to which power sharing among the three levels of government determines the adequacy (public good) or otherwise (public bad) of resources allocated and whether such funds are judiciously allocated or whether they match the state and local government responsiveness to participation in the process of governance. That it means whether local governments, state or communities for that matter are getting enough fund from the system as per their overall contribution to the revenue. Decentralization is an effective tool for increasing the efficiency of public expenditure. Also, it boosts accountability and transparency in the provision of public goods for the well-being of the society. Besides, decentralization means dividing financial and expenditure functions between federal, state and local governments.

### **The Rationale for fiscal federalism**

The rationale for fiscal federalism cannot be over emphasized. Firstly, it allows for government to get very near to the grassroots. Secondly, it makes effective decision making the levels of government and exposes incompetent and fraudulent government officials at the levels of government. Thirdly, it makes the citizens to choose where they want to stay and work because of the benefits accruing from the relationship because there are variations between the states and local government councils in terms of tax structure, security and infrastructure etc. Fourthly, Different layers of government try different approaches to find solutions to issues. Fifthly, weaker states and local government councils rely on allocation from the federation account to discharge their constitutional responsibilities. Sixthly, with the existence of fiscal federalism in a country, there is tendency of people migrating from area where they would not be employed to areas where they will enjoy more comparative advantage especially in terms of services and infrastructure.

Local governments find it very cumbersome to collect taxes unlike the federal government. The federal government has more power to tax evaders than state and local governments.

Also, basic infrastructure like roads, hospital/clinics, schools are provided by the federal and state governments. Again, in a federation, such level of government is a infra sovereign state that should remain co-ordinate and interdependent with one another within the national scheme of things or nation. Moreover, fiscal decentralization has a long history in Nigeria. Before independence in Nigeria, it was used to manage Nigeria's cultural diversity.

### **Effects of Fiscal Policies in Nigeria**

Fiscal policies in Nigeria have been used indiscriminately to alter the allocation of resources which has caused inequality of wealth, opportunities, injustice and lack of fairness amongst the federating units. Mukoro (supra) conceived that a particular revenue sharing formulae adopted at any particular time may appear antithetic to the desire of a particular group of people. For instance, the clamour for resource control by south-south Governors of Nigeria – Those in oil bearing states are laying claim to oil resources located off shore which the sharing formulae allocated to the federal government and as provided in the extant constitution. Furthermore, decentralization has resulted inefficient resource use and has increased cost of governance rather than cost effectiveness. Again, despite the increased funding to sub-national governments, health and education have not improved.

### **Different Formulae Adopted by Nigeria to Allocate Revenue among the Federating Unit (1946 - 2004).**

In adopting a revenue allocation formulae in Nigeria, the following formulae were used.

Derivation & Need Principle, these brought equity to all parts of Nigeria. As a result of sustainable protests, there has been regular review of the revenue allocation formulae between 1946 and 2004. Many commissions and committees were set up on Revenue Allocation. The followings were the commissions set-up.

### **Commissions and Committee to Review Revenue Allocation between 1946 and 2004**

#### **a Sir Sydney Phillipson Commission (1946):**

This commission introduced three principles, namely: derivation, development process and population. Criticisms that followed this provisions led to another commission in 1951 chaired by both Sir Sydney Phillipson and Prof. J.K. Hicks to come up with more accepted Revenue Allocation Formulae.

c. **Sir Sydney Phillipson and Prof. J.K. Hicks Commission (1951).**

This commission recommended four general principles which are independent revenue, deprivation, need to national interest as the criteria for revenue sharing. It was also criticized over the control of government collection of duties and tax on premium motor spint.

d. **Sir Louis Chicks Commission (1953)**

This commission was to adjust the previous recommendations and thus came with a main principle and it expatiated derivation.

e. **Sir Jeremy Raisman Tress (1957/58)**

This commission was set up as a result dissatisfaction with the derivation principle and subsequently led to the setting up of distributive pool account and complete regional jurisdiction over personal income tax. It further recommended need balanced development and minimum responsibility with a percentage division of 40% to the North, 31% to the East, 24% to the West and 5% to the Southern Cameroon.

f. **K.J. Binns Commission (1964)**

This commission rejected the principle of Need and Derivation. It increased the percentage of general import revenue, mining rent and royalties payable to the derivation pool account from 30% to 35% and also recommended percentage division of 42% to the North, 30% to the East, 20% to the West and 8% to the Mid-West.

g. **Dina Commission (1968)**

This commission was to look into the distribution of revenue following the splitting of the nation into twelve states. It renamed distribution pool account to state joint account and again created special grant account and advocated for a permanent planning and fiscal commission. In addition, it recommended national minimum standard, balanced development, basic need and national interest in the distribution of revenue.

h. **Aboyade Technical Committee (1977)**

This commission supported the national minimum standard for national integration. It recommended for all the federally collected revenues to be pooled into the federation account and be allocated there from among the federal, state and local governments. It is interesting to note that the local government started receiving their revenue directly from the federation account, as the third tier of government after the Aboyade's Committee Submission of its requirements for the share proportion of 57%, 30% and 10% for federal, state and local government respectively with the remaining 3% for special grant.

i. **Pius Okigbo Commission (1980)**

This commission is charged with the responsibility of looking into the derivation, even development,

equitable distribution and national interest as well as make recommendations on revenue sharing formulae among the layers of government. It recommended percentage on principle of population, social development and internal revenue efforts. It also recommended revenue allocation sharing formula to be 53%, 30% and 10% for federal, state and local government respectively and further recommended 7% as special fund which should be distributed among Federal Capital Territory (FCT), mineral producing areas, derivation, ecological problems, and revenue equalization fund (Okigba, 1980). On its acceptance, the federal government effected some changes as 53%, 35% and 10% for federal, state and local government respectively and also recommended 7% as special fund which should be distributed among Federal Capital Territory (FCT), mineral producing areas, deprivation, ecological problems and revenue equalization fund.

On its acceptance, the federal government effected some changes as 53%, 35% and 10% for federal, state and local government respectively. The government directed that the state revenue allocation of 35% should be applied as follows: equality of states 30.5%, ecological problems 1.0% and derivation principle 3.5% (Ugwu, 2012). Despite all these beautiful recommendations, the commission also received criticisms but the federal military government via their decree only effected changes regarding derivations. Derivation of 2% was to be drawn from revenue relating directly to the state in which minerals were extracted while 1.5% went into fund for the development of mineral producing areas of the country.

**Revenue Mobilization Allocation and Fiscal Commission 1988**

This commission introduced the principles of equality of states, population, social development factor, landmass and terrain, internal revenue efforts and special fund. It recommended federal government get 50%, state 30%, local government 15% and special fund 5%. Section 153 of the extant constitution provides for the establishment of central federal executive bodies, sub-section (1n), provides for revenue mobilization allocation and fiscal commission with functions, composition and powers as provided in the third schedule of part 1.

As stated in Section 32 of the schedule among others states; review from time to time the revenue allocation to ensure conformity with changing realities. After a Court suit decided by the Supreme Court of Nigeria that nullified the allocation of 7% of the federal allocation to special fund, Former President of the Federal Republic of Nigeria, Chief Olusegun Obasanjo on the 8<sup>th</sup> day of May, 2002 by an order: Allocation of Revenue (Federation Account etc) changed the existing formulae to federal government 50%, state 24%, local



government 20%, general ecological problems 2%, Federal Capital Territory 1.5% and development of natural resources 3%.

By the month of July, 2002, there was another order that modified the previous order that shared the revenue as: Federal government 54.68%, state government 27.72% and local government 20.6%. Again by March 2004, the Revenue Allocation formulae was modified, federal government 52.68%, state government 24.72% and local government 20.6% which is still in force. Fiscal decentralization which mirrors the amount of fiscal autonomy and responsibility accorded to sub-national government, has been equation of many developing transition and developed countries.

### **The Review of the Supreme Court of Nigeria Judgment delivered on the 11<sup>th</sup> day of July, 2024 in the case of Attorney – General Federation vs. Attorney-General of Abia State and 35 others**

The Supreme Court of Nigeria, on the 11<sup>th</sup> day of July, 2024 granted financial autonomy to democratically elected local government councils in Nigeria. The judgment stated that State Governors in Nigeria lack power, authority and locus standi to dissolve local government councils and create caretaker committees and or interim councils. Section 165 of the extant constitution and the Allocation of Revenue ACT of 1982 provides that federally collected revenue be credited to the federation account and distributed monthly among the three levels of government.

Immediately after the judgment was delivered, 10-man inter-ministerial committee was inaugurated, charged with the responsibility of enforcing the judgment. The judgment gave state governments a 3-months deadline to organize elections or risk losing federal statutory allocation for the local government councils. This instruction made many states to organize local government elections. The Supreme Court of Nigeria, having delivered the judgment, some state Governors continued to design strategies to frustrate the judgment. To this extent, some state Governors fraudulently introduced a state legislative bill forcing Local Government Council chairmen to revert back the Allocation collected to the state government.

For instance, a clause of the Anambra State Local Government Law, 2024 requires the federal government allocations to Local Government Councils be placed first in the State Joint Local Government Account. This was repugnant to the supreme court of Nigeria Judgment delivered on the 11<sup>th</sup> day of July, 2024 granting financial autonomy to democratically elected local government councils in Nigeria. The commencement date for the direct disbursement of local government councils. Federal allocation was initially set for October, 2024 but was altered to

January, 2025 because of the agreement with the State Governors to organize elections for their local government councils with immediate effect.

On January, 2025, the Central Bank of Nigeria refused and failed to pay Local Government Councils account directly instead, the Central Bank of Nigeria diverted the Local Government Council monies totalling N361.754 billion from the total of N1.424 Trillion distributable revenue through state governments.

Matawalle (2024) posited that it was the President who provided the enabling environment for the judgment of the Supreme Court and that the Presidency abandoned the judgment of the Supreme Court of Nigeria and sought political solution. It is pertinent to observe that the Supreme Court of Nigeria judgment delivered on the 11<sup>th</sup> day of July, 2024 in the case of Attorney-General, Federation vs Attorney-General of Abia State and 35 others is at variance with the provision of the constitution of the Federal Republic of Nigeria, 1999, as Amended. In a nutshell, the judgment is unconstitutional, it does not provide for local government councils' autonomy. It provides for the oversight function by the State Governors. The judgment is expected to boost Local Government autonomy but constitutional provision is more concrete than Court Judgment.

Umoh, Akewu-Shola, and Essien (2024) explained that section 7 of the extant constitution recognises local government and provides for its structure, composition, finance and positions. But tied them to be supervised by the state government. The extant constitution does not recognise financial autonomy of the Local Government Councils in Nigeria. However, the functions of Local Government Council are provided for the extant constitution in the 4<sup>th</sup> schedule of the extant constitution. The extant constitution also provides that local government councils could make consideration and recommendations to the state commission on economic planning and or similar body. Paragraph 1(a) of the 4<sup>th</sup> Schedule, of the extant constitution provides for the functions of local government councils in contributing to economic development in their areas.

### **Summary**

This study used the qualitative research method. Secondary data obtained from text books, academic journals, newspapers and internet services.

The questions raised for this study were discussed and the findings are as follows:

The introduction of caretaker committee to local government administration by the state governments affected grassroots' participation in local politics in Nigeria.

- ii. The State and Local Government Joint Account (SLGJA) worked hardship on local government councils in Nigeria.
- iii. State governments through their local government service commission affirm monopoly of personnel matters in local government administration in Nigeria.
- iv. The judgment delivered by the Supreme Court of Nigeria on the 11<sup>th</sup> day of July, 2024 in the case of Attorney-General of the federation vs. Attorney-General, Abia State and 35 others wherein the Supreme Court of Nigeria granted Financial Autonomy to democratically elected Local Government Councils in Nigeria is unconstitutional. In the hierarchy of laws in Nigeria, the constitution of the Federal Republic of Nigeria, 1999, as amended ranks number one. Therefore, all laws must be in conformity with the extant constitution. The extant constitution does not provide for local government autonomy.

### Conclusion

This study was flared up by the desire of the researcher to examine the effects of fiscal decentralization on local government autonomy in Nigeria. The findings of the study shared that the introduction of caretaker committee to local government administration by the state governments affected grassroots' participation in local politics in Nigeria.

Also, the State and Local Government Joint Account affected local government service delivery. Besides, Local Government Service Commission hijacked personnel matters of the local government. Again, the Supreme Judgment delivered on the 11/2/24 is unconstitutional.

### Recommendations

The researcher haven carried out a careful exhaustive study on Local Government Autonomy and fiscal decentralization in Nigeria, put forward the following recommendation which I believe will go a long way in solving the issues that characterized Local Government Autonomy and Fiscal Decentralization in Nigeria.

- i. The political space should be opened for the grassroots with a view to participating in their own local government council elections in Nigeria.
- ii. Section 162(6) of the Constitution of the Federal Republic of Nigeria, 1999 as Amended which provides for the establishment of the State Joint Local Government Account (SJLGA) should be expunged from the constitution.
- iii. Local Government Service Commission created to sustain monopoly of personnel matters in local government administration in Nigeria should be scrapped.
- iv. The judgment delivered by the Supreme Court of Nigeria on the 11<sup>th</sup> day of July, 2024 in the case of Attorney-General, Federation vs. Attorney-General,

Abia State and 35 others wherein the Supreme Court of Nigeria granted Financial Autonomy to democratically elected Local Government Councils in Nigeria should not be used as a judicial precedent and it is unconstitutional.

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## Management Capability and the Vestiges of Business Performance in Nigeria Private Frims

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### Abstract

*This study investigates the relationship between management capability and business performance in Nigerian private firms, focusing on strategic management, leadership and decision-making, and operational and human resource management competencies. Using a quantitative cross-sectional survey, data were collected from 317 respondents across Lagos, Ogun, and Rivers States, with 300 valid questionnaires analyzed. Descriptive statistics, correlation analysis, and multiple regression were employed to assess the influence of management capability on firm performance, measured through profitability, productivity, market share, and operational efficiency. Findings reveal that all three dimensions of management capability significantly and positively impact business performance, with leadership and HR management capability exerting the strongest effect. The study underscores the critical role of strategic foresight, effective leadership, and operational adaptability in enhancing organizational outcomes in competitive and dynamic markets. Based on the findings, the study recommends strengthening strategic planning, leadership development, and operational excellence to optimize firm performance. The study contributes to the literature by providing empirical evidence on how managerial competencies shape business success in emerging economies, highlighting avenues for future research on organizational culture, innovation capability, and technology adoption.*

**Keywords:** Management Capability, Business Performance, Strategic Management, Leadership, Human Resource Management, Nigeria

### Introduction

Management capability is widely recognized as a key determinant of business performance, particularly in competitive and dynamic markets. In Nigeria, private firms face an array of challenges that test the effectiveness of their managerial structures, including economic volatility, regulatory uncertainties, intense competition, and technological disruption. The capacity of management to plan strategically, coordinate resources, make timely decisions, and respond to emerging business trends often determines the success or failure of these organizations. Business performance, which encompasses profitability, market share, productivity, and sustainability, is heavily influenced by managerial competence. Studies have shown that firms with strong management practices are better positioned to leverage resources efficiently, innovate, and achieve organizational objectives (Obaji & Ogbari, 2018). Conversely, inadequate management skills, poor leadership, and lack of strategic foresight often result in operational inefficiencies, reduced competitiveness, and financial underperformance.

In the Nigerian context, private firms operate in a highly heterogeneous environment where managerial capability is not only about technical expertise but also includes leadership acumen, decision-making effectiveness, human resource management, and adaptability to socio-economic changes. Despite the recognized importance of management competence, there is evidence that many firms struggle with managerial inefficiencies, leading to suboptimal business outcomes (Adewale & Ojo, 2020). These inefficiencies can manifest in poor financial results, employee disengagement, low productivity, and weak market positioning, which collectively undermine the overall performance of private firms. Moreover, the complex interplay between management capability and business performance in Nigeria has drawn scholarly attention due to the recurring cases of business failures, even among well-established firms. Understanding how management practices influence performance outcomes is therefore crucial for developing strategies that enhance organizational effectiveness and sustainability. This study seeks to investigate the relationship between management capability and business performance in

Nigerian private firms, identifying the areas where managerial strengths and weaknesses directly impact organizational success.

### Problem Statement

Management capability is widely recognized as a critical determinant of business performance, encompassing strategic planning, leadership, decision-making, and operational efficiency. In Nigeria, private firms operate in a highly volatile and competitive environment characterized by economic fluctuations, regulatory uncertainties, technological disruptions, and increasing market competition. Despite these challenges, many organizations continue to underperform, with recurring reports of financial losses, low productivity, poor employee engagement, and weak market positioning. Evidence suggests that these suboptimal outcomes may be linked to inadequacies in management capability. Managers in some Nigerian private firms often struggle with strategic foresight, effective decision-making, employee motivation, and operational adaptability. Such gaps in managerial competence can lead to inefficient resource utilization, reduced innovation, and ultimately, poor organizational performance. While prior studies have highlighted the importance of management competence in driving business success globally, there is limited empirical research examining how management capability specifically influences the performance of private firms in Nigeria. This study seeks to address this gap by investigating the relationship between management capability and business performance in Nigerian private firms, with the goal of identifying the managerial strengths and weaknesses that have the most significant impact on organizational outcomes. The findings are expected to provide actionable insights for improving management practices and enhancing the overall performance and sustainability of private firms in the Nigerian context.

### Objectives

The general objective of the study is to examine the relationship between management capability and business performance in Nigerian private firms. The specific objectives are:

- i. to assess the influence of strategic management capability on the business performance of Nigerian private manufacturing firms.
- ii. to evaluate the impact of leadership and decision-making capability on organizational productivity and profitability.
- iii. to investigate the role of operational and human resource management capability in enhancing overall business performance.

### Research Questions

- How does strategic management capability influence the business performance of Nigerian private manufacturing firms?
- What is the impact of leadership and decision-making capability on organizational productivity and profitability?
- i. How do operational and human resource management capabilities affect the overall performance of private firms in Nigeria?

### Research Hypotheses

**Hypothesis 1 (H<sub>01</sub>):** There is no significant relationship between strategic management capability and the business performance of Nigerian private firms.

**Hypothesis 2 (H<sub>02</sub>):** Leadership and decision-making capability do not have a significant impact on organizational productivity and profitability in Nigerian private firms.

**Hypothesis 3 (H<sub>03</sub>):** Operational and human resource management capabilities do not significantly influence the overall business performance of Nigerian private firms.

### Literature Review

#### Conceptual Review

#### Management Capability

Management capability refers to the collective skills, knowledge, and abilities of an organization's leadership to effectively plan, organize, lead, and control resources to achieve strategic objectives and enhance organizational performance. It encompasses various dimensions such as strategic planning, decision-making, leadership, and operational management. In dynamic and competitive environments, particularly in emerging economies like Nigeria, management capability is crucial for navigating challenges and seizing opportunities. Recent studies have highlighted the importance of management capability in influencing business outcomes. For instance, research indicates that managerial capabilities, including strategic planning and managerial skills, significantly impact the corporate performance of SMEs in Nigeria's agricultural sector Adeneye, (2024).. Additionally, the dynamic capabilities framework suggests that firms must continuously adapt, integrate, and reconfigure their internal and external competences to thrive in rapidly changing environments (Eisenhardt, & Martin, 2000). In the context of Nigerian private firms, enhancing management capability can lead to improved strategic alignment, better resource utilization, and increased competitiveness, ultimately contributing to sustained business performance.

### **Business Performance of Private Manufacturing Firms**

Business performance in private manufacturing firms refers to the measurable outcomes that indicate how effectively a company achieves its strategic objectives, operational goals, and overall organizational success. It encompasses both financial and non-financial indicators, including profitability, revenue growth, productivity, market share, customer satisfaction, and innovation capacity (Ogunyomi & Bruning, 2020). Performance reflects the firm's ability to utilize resources efficiently, adapt to market changes, and sustain competitive advantage in dynamic environments. In the context of private manufacturing firms, business performance is often influenced by factors such as managerial competence, technological capability, operational efficiency, employee engagement, and market responsiveness. Studies suggest that firms that integrate strategic planning with operational execution tend to demonstrate superior performance outcomes (Adeniran & Osabuohien, 2021). Furthermore, business performance is multidimensional, with financial measures capturing profitability and growth, while operational measures reflect productivity, quality, and innovation effectiveness (Abdullah et al., 2022). Measuring business performance in private manufacturing firms is critical for decision-making, resource allocation, and assessing organizational sustainability. High-performing firms are better positioned to survive economic volatility, exploit growth opportunities, and maintain long-term competitiveness, making business performance a key indicator of organizational health and strategic effectiveness (Onugu, 2020).

### **Strategic management capability influence the business performance of Nigerian private manufacturing firms**

Strategic management capability encompasses the ability of an organization to formulate, implement, and evaluate strategies that align with its objectives and the external environment. In Nigerian private manufacturing firms, this capability is crucial for navigating the challenges posed by economic volatility, regulatory changes, and competitive pressures. Research indicates that effective strategic management practices significantly enhance business performance by improving operational efficiency, profitability, and market competitiveness. A study by Agwu (2018) found that the adoption of strategic management practices among small and medium-sized enterprises (SMEs) in Lagos State led to increased transaction volumes, customer numbers, and market share, thereby improving overall business performance. Similarly, research by Ogbaini (2024) highlighted that strategic orientation positively affects the performance of

manufacturing firms in Nigeria, with innovation, organizational structure, and leadership serving as moderating factors.

Furthermore, a study by Badiru (2024) emphasized the importance of strategic management controls in enhancing operational performance. The research identified that strategic cost management practices, such as activity-based costing and target costing, positively impact firm performance by improving cost efficiency and resource utilization. These findings underscore the importance of strategic management capability in fostering sustainable business performance in Nigerian private manufacturing firms. By effectively aligning internal capabilities with external opportunities and threats, firms can achieve competitive advantage and long-term success.

### **Leadership and decision-making capability on organizational productivity and profitability**

Leadership encompasses the ability to guide, influence, and inspire employees towards achieving organizational goals. In Nigerian manufacturing firms, leadership styles such as transformational and democratic have been associated with positive organizational performance. For instance, a study by Onu (2024) found that strategic leadership positively impacts organizational performance in Nigerian manufacturing firms. Similarly, Ezeanolue and Ezeanyim (2020) highlighted that employee participation in decision-making, a facet of leadership, enhances organizational productivity in manufacturing firms in South-East Nigeria.

### **Decision-Making Capability and Organizational Performance**

Decision-making capability refers to the ability to make informed, effective, and timely decisions that steer the organization towards its objectives. In the context of Nigerian manufacturing firms, strategic decision-making is crucial for navigating market uncertainties and achieving competitive advantage. Research by Olasanmi (2021) indicates that strategic management practices, which include decision-making processes, significantly influence organizational performance in Nigerian manufacturing firms.

### **Integrating Leadership and Decision-Making Capability**

The integration of strong leadership and robust decision-making capabilities creates a synergistic effect that enhances organizational productivity and profitability. Leaders who empower employees to participate in decision-making processes foster a sense of ownership and commitment, leading to improved performance outcomes. Moreover, effective decision-making ensures that the organization responds adeptly

to internal and external challenges, thereby sustaining profitability. In conclusion, the interplay between leadership and decision-making capability plays a critical role in determining the productivity and profitability of Nigerian private manufacturing firms. Strengthening these areas can lead to enhanced organizational performance, enabling firms to thrive in a competitive and volatile business environment.

### **Operational and human resource management capabilities affect the overall performance of private firms in Nigeria**

Operational and human resource management (HRM) capabilities are critical determinants of the overall performance of private firms in Nigeria. These capabilities influence various performance metrics, including productivity, profitability, and competitiveness, particularly within the manufacturing sector.

### **Operational Capability and Firm Performance**

Operational capability refers to a firm's ability to efficiently manage its production processes, supply chain, quality control, and resource utilization. In Nigeria, firms that invest in enhancing their operational capabilities often experience improved performance outcomes. For instance, research indicates that organizations employing operational performance benchmarking have achieved up to a 30% increase in operational effectiveness, leading to enhanced productivity and reduced costs Novatia Consulting.

### **Human Resource Management Capability and Firm Performance**

HRM capability involves the strategic management of human capital through practices such as recruitment, training, development, and performance management. Studies have shown that effective HRM practices positively impact firm performance. A study by Elumah et al. (2017) found a significant relationship between HRM practices and organizational performance in Nigerian firms, highlighting the importance of HRM in enhancing productivity and profitability ResearchGate.

### **Integrated Impact on Performance**

The integration of strong operational and HRM capabilities creates a synergistic effect that enhances overall firm performance. Firms that align their operational strategies with effective HRM practices are

better positioned to adapt to market changes, innovate, and achieve sustainable growth. This integrated approach enables firms to leverage their human capital effectively, streamline operations, and maintain a competitive edge in the Nigerian market.

### **Tools and Methods**

This study adopts a quantitative cross-sectional survey design to examine the relationship between management capabilities and business performance in Nigerian private firms. The independent variables—Strategic Planning and Decision-Making, Leadership and Human Resource Management, and Operational and Adaptive Competence—were assessed against business performance, measured through profitability, productivity, market share, and operational efficiency (Creswell & Creswell, 2018). Data were collected from private firms in Lagos, Ogun, and Rivers States, selected for their industrial diversity and workforce heterogeneity (Adewale & Ojo, 2020). The population comprised employees and managers, with a sample of 317 respondents determined using Yamane's (1967) formula and selected via stratified random sampling based on job roles (Etikan et al., 2016). Primary data were obtained through structured questionnaires using a 5-point Likert scale, while secondary data included company reports and HR records to validate responses (Saunders et al., 2019). Validity was confirmed by management and HR experts, and reliability was ensured through a pilot test, achieving Cronbach's alpha  $\geq 0.70$  (Amin, 2020; Nunnally & Bernstein, 1994). Data were analyzed using descriptive statistics (frequencies, means, standard deviations) and inferential statistics, including Pearson correlation and multiple regression, expressed as:

$$BP = \beta_0 + \beta_1 SPDMC + \beta_2 LHRMC + \beta_3 OAC + \epsilon$$

This methodology enables assessment of both the individual and combined effects of managerial capabilities on business performance, providing empirical insights into key drivers of organizational success in Nigerian private firms.

### **Data Presentation and Analysis**

#### **Demographic Analysis of Respondents**

A total of **317 questionnaires** were returned, of which **17 were invalidated**, leaving **300 valid responses** for analysis. The respondents comprised employees and managers across Nigerian private firms in Lagos, Ogun, and Rivers States. Demographic characteristics are summarized in Table 4.1.



**Table 1: Demographic Characteristics of Respondents (N = 300)**

| Demographic Variable | Category      | Frequency | Percentage (%) |
|----------------------|---------------|-----------|----------------|
| Gender               | Male          | 180       | 60             |
|                      | Female        | 120       | 40             |
| Age                  | 20–29         | 60        | 20             |
|                      | 30–39         | 120       | 40             |
|                      | 40–49         | 80        | 26.7           |
|                      | 50+           | 40        | 13.3           |
| Job Role             | CEO/Executive | 30        | 10             |
|                      | Manager       | 80        | 26.7           |
|                      | Supervisor    | 90        | 30             |
|                      | Staff         | 100       | 33.3           |
| Experience (Years)   | <5            | 50        | 16.7           |
|                      | 5–10          | 120       | 40             |
|                      | 11–15         | 80        | 26.7           |
|                      | >15           | 50        | 16.7           |

Source: Authour’s field Analysis (2025)

#### **Preliminary Analysis: Data Screening, Missingness & Reliability**

The dataset was screened for completeness. No missing values were identified for key variables. Outliers were examined using standardized scores (Z-scores), with all cases falling within  $\pm 3$ , indicating no extreme deviations.

#### **Reliability (Internal Consistency)**

The reliability of scales was assessed using Cronbach’s alpha, with  $\alpha \geq 0.70$  considered acceptable (Nunnally & Bernstein, 1994).

**Table 2: Scale Reliability (Cronbach’s Alpha)**

| Construct                            | No. of Items | Cronbach’s $\alpha$ |
|--------------------------------------|--------------|---------------------|
| Strategic Planning & Decision-Making | 5            | 0.812               |
| Leadership & HR Management           | 5            | 0.828               |
| Operational & Adaptive Competence    | 5            | 0.795               |
| Business Performance                 | 7            | 0.841               |

Source: SPSS Analysis(2025)

All constructs demonstrated acceptable internal consistency, confirming the reliability of the instrument

#### **Descriptive Statistics (Scale Level)**

Table 3 shows the mean and standard deviation scores for the main variables.

**Table 3: Descriptive Statistics**

| Variable                             | Mean | SD   |
|--------------------------------------|------|------|
| Strategic Planning & Decision-Making | 3.68 | 0.72 |
| Leadership & HR Management           | 3.75 | 0.68 |
| Operational & Adaptive Competence    | 3.62 | 0.70 |
| Business Performance                 | 3.70 | 0.65 |

Source: Author’s Analysis (2025)

The results indicate moderate to high perceptions of management capability **and** business performance among respondents.

#### **Correlation Analysis**

Pearson correlation was used to examine relationships between management capabilities and business performance.

**Table 4: Pearson Correlation Matrix**

| Variable                                | 1       | 2       | 3       | 4 |
|-----------------------------------------|---------|---------|---------|---|
| 1. Strategic Planning & Decision-Making | 1       |         |         |   |
| 2. Leadership & HR Management           | 0.682** | 1       |         |   |
| 3. Operational & Adaptive Competence    | 0.614** | 0.655** | 1       |   |
| 4. Business Performance                 | 0.578** | 0.602** | 0.543** | 1 |

**Note.  $p < 0.01$  (2-tailed).**

Results indicate moderate positive correlations between all dimensions of management capability and business performance

### Regression Analysis — Testing Hypotheses

A multiple regression analysis assessed the predictive influence of management capability dimensions on business performance.

**Table 5: Multiple Regression Analysis**

| Predictor Variable                   | B     | SE B  | $\beta$ | t     | p     |
|--------------------------------------|-------|-------|---------|-------|-------|
| Strategic Planning & Decision-Making | 0.312 | 0.062 | 0.298   | 5.032 | 0.000 |
| Leadership & HR Management           | 0.361 | 0.057 | 0.342   | 6.333 | 0.000 |
| Operational & Adaptive Competence    | 0.254 | 0.060 | 0.234   | 4.233 | 0.000 |
| Constant                             | 0.512 | 0.149 | —       | 3.434 | 0.001 |

**Model Summary:**  $R^2 = 0.562$ ,  $F(3, 296) = 127.54$ ,  $p < 0.001$ .

### Interpretation:

- **Strategic Planning & Decision-Making** significantly predicts business performance ( $\beta = 0.298$ ,  $p < 0.001$ ).
- **Leadership & HR Management** has the strongest influence ( $\beta = 0.342$ ,  $p < 0.001$ ).
- **Operational & Adaptive Competence** also significantly affects performance ( $\beta = 0.234$ ,  $p < 0.001$ ). These results confirm that all three dimensions of management capability positively and significantly influence business performance, supporting the study hypotheses.

### Discussion of Findings

- Influence of Strategic Planning Capability:** Strategic planning and decision-making capability are critical drivers of business performance in Nigerian private firms. This dimension of management capability encompasses the ability to anticipate market trends, allocate resources efficiently, set realistic organizational goals, and align departmental objectives with overall corporate strategy. Firms that exhibit strong strategic planning practices are better equipped to identify opportunities, mitigate risks, and make informed decisions that enhance profitability and market competitiveness. Effective strategic planning fosters organizational coherence, reduces operational redundancies, and enables firms to respond proactively to internal and external challenges. The findings of this study align with Obaji and Ogbari (2018), who assert that strategic foresight and structured planning are essential for sustaining performance in dynamic and competitive business environments. Furthermore, strategic planning capability reinforces long-term sustainability by ensuring that firms not only react to current market conditions but also position themselves advantageously for future growth.
- Impact of Leadership and Human Resource Management Capability:** Leadership and HR management capability emerged as the strongest predictor of organizational productivity and profitability in this study. Effective leadership entails

guiding teams, setting clear expectations, motivating employees, and fostering a culture of accountability and innovation. Complementarily, HR management capability involves talent acquisition, employee development, performance management, and creating policies that enhance employee engagement. Firms with robust leadership and HR practices tend to experience higher employee morale, reduced turnover, and improved operational efficiency. This finding is consistent with Adewale and Ojo (2020), who emphasize that leadership effectiveness and strategic HR management are pivotal in translating organizational resources into measurable business outcomes. By cultivating employee commitment, leadership and HR management capability indirectly support other management functions, strengthening overall organizational resilience and competitiveness.

### Role of Operational and Adaptive Competence:

Operational and adaptive competence plays a crucial role in enhancing firm performance by enabling managers to execute organizational strategies effectively while adapting to changing market conditions. Operational competence involves optimizing processes, managing resources efficiently, and ensuring that organizational outputs meet quality and efficiency standards. Adaptive competence, on the other hand, refers to the ability to respond flexibly to technological innovations, regulatory shifts, and fluctuating consumer demands. Firms that demonstrate high levels of operational and adaptive competence can maintain productivity and performance even under uncertain conditions, reducing the risk of operational disruptions. The study's results support the observations of Elnaga and Imran (2021), who note that managerial flexibility and operational excellence are essential for sustaining business performance in dynamic and unpredictable markets. Together, operational and adaptive competencies complement strategic planning and leadership capabilities, forming a holistic managerial framework that drives organizational success. Overall, the findings indicate

that management capability is a key driver of business success in Nigerian private firms, with leadership effectiveness being the most influential dimension.

### Summary

This study examined the relationship between management capability and business performance in Nigerian private firms, focusing on three core dimensions: strategic management capability, leadership and decision-making capability, and operational and human resource management capability. Using a quantitative research design, data were collected from 300 valid respondents across Lagos, Ogun, and Rivers States. Analyses included descriptive statistics, correlation, and multiple regression to test the study hypotheses. Findings revealed that all three dimensions of management capability have a significant positive impact on business performance. Strategic planning and decision-making capability enhances firms' ability to align resources and anticipate market changes. Leadership and HR management capability had the strongest effect, improving employee engagement, productivity, and profitability. Operational and adaptive competence also positively influenced overall business performance, highlighting the role of flexibility and effective resource management in a dynamic business environment.

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### Conclusion

The study concludes that management capability is a critical determinant of business performance in Nigerian private firms. Firms that demonstrate strong strategic foresight, effective leadership, and adaptive operational skills achieve higher profitability, productivity, and sustainability. Among the dimensions, leadership and decision-making capability emerged as the most influential, underscoring the pivotal role of human capital management in organizational success.

### Recommendations

Based on the findings, the following recommendations are proposed:

Firms should invest in structured strategic planning processes and decision-making frameworks to improve responsiveness to market dynamics.

Organizations should implement leadership training and mentoring programs to improve managerial competence and employee engagement.

Firms should encourage adaptive operational practices and effective human resource management, including performance monitoring, workforce training, and resource optimization.

Regular evaluations of management skills should be conducted to identify gaps and improve overall organizational performance.

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## Ethical Leadership and Accountability in Nigeria's Public Service

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### Abstract

*This qualitative study examines the critical relationship between ethical leadership and accountability in Nigeria's public service, exploring how ethical practices influence governance outcomes. The research identifies pervasive challenges including systemic corruption, lack of transparency, weak institutional frameworks, and political interference that undermine accountability mechanisms. Through content analysis of secondary sources including journal articles, government publications, and empirical studies, the investigation reveals that ethical failures in Nigeria's public service are multifaceted, stemming from historical precedents, organizational culture, and socioeconomic factors. The study establishes that ethical leadership characterized by integrity, accountability, transparency, and commitment to the public good is instrumental to achieving good governance and sustainable development. Findings indicate that transformational leadership approaches, coupled with strengthened institutional controls and cultural transformation, could significantly enhance accountability in the public sector. The research contributes to the existing literature by providing a comprehensive analysis of the interconnectedness between ethical leadership and accountability in the Nigerian context. Recommendations include institutional reforms, enhanced transparency mechanisms, leadership development programs, and the cultivation of an ethical organizational culture to promote accountability and good governance in Nigeria's public service.*

Keywords: Ethical Leadership, Accountability, Public Service, Governance, Corruption, Nigeria

### Introduction

The public service in Nigeria represents the institutional framework through which government policies are formulated and implemented, thereby serving as the engine room of governance and national development. Historically, Nigeria's public service has undergone significant reforms since the colonial period, with the 1976 reforms marking a major attempt to professionalize and enhance efficiency in the sector (Adebayo, 2020). Despite these reforms, the sector continues to grapple with challenges of inefficiency, politicization, and declining ethical standards. The concept of ethical leadership, which emphasizes principles such as transparency, accountability, integrity, and service to the public good, remains central to addressing these challenges and ensuring the proper functioning of public institutions (Okereke & Eme, 2022).

Nigeria's socioeconomic landscape reveals a paradox a country endowed with vast human and natural resources, yet consistently facing underdevelopment, poverty, and inequality. Scholars argue that this contradiction is strongly tied to governance deficits,

especially within the public service (Akinola, 2021). Issues such as nepotism, bribery, embezzlement, and bureaucratic bottlenecks have become entrenched, weakening institutional performance and eroding public confidence in government agencies. These unethical practices not only diminish service delivery but also stifle sustainable economic growth and social justice (Olowu & Oyedele, 2023).

The erosion of accountability in Nigeria's public service is a direct consequence of weak enforcement mechanisms and a culture of impunity among public officials. Studies show that accountability mechanisms such as audits, procurement monitoring, and anti-corruption frameworks are either poorly implemented or circumvented due to weak political will (Agbiboa, 2021). As a result, the credibility of the public service has been compromised, with the average citizen perceiving government institutions as self-serving rather than people-oriented. This situation underscores the urgency of embedding ethical leadership as a guiding principle in Nigeria's governance framework (Adeosun, 2022).

In the broader theoretical discourse, ethical leadership and accountability have gained global recognition as key determinants of public sector effectiveness. Theories such as Transformational Leadership Theory and Agency Theory emphasize the role of leaders in fostering accountability, ethical behavior, and alignment of personal interests with public goals (Brown & Treviño, 2020). However, the application of these frameworks in Nigeria remains underexplored, with existing literature offering limited insights into how ethical leadership can be systematically cultivated to combat entrenched corruption and inefficiency in public institutions (Eneh, 2022).

Against this backdrop, this study seeks to bridge the gap by critically examining the relationship between ethical leadership and accountability in Nigeria's public service. By drawing from empirical evidence, theoretical perspectives, and comparative global practices, the study aims to provide actionable recommendations for strengthening institutional frameworks. Ultimately, the research contributes to the broader debate on governance reform in Africa, highlighting the need for leadership models rooted in ethics, transparency, and accountability to achieve sustainable national development (Oluwatobi & Okafor, 2023).

### Statement of the Problem

The Nigerian public service is bedeviled by a plethora of ethical issues that have severely compromised its accountability mechanisms and service delivery capacity. Despite numerous reforms and anti-corruption initiatives, systemic corruption remains entrenched in the public sector, manifesting through various forms including bribery, embezzlement of funds meant for developmental projects, falsification of government documents for selfish motives, and inflation of contract figures. These unethical practices have become so normalized that they now represent a significant impediment to Nigeria's socioeconomic development.

The magnitude of corruption and ethical violations was particularly evident during the COVID-19 pandemic, when public officials brazenly looted palliative materials meant for vulnerable populations during lockdown periods. This incident highlighted the profound ethical crisis within Nigeria's public service and raised serious questions about the effectiveness of existing accountability mechanisms. The persistence of such practices suggests deep-rooted systemic issues that go beyond individual moral failings to encompass institutional and structural deficiencies.

Several interconnected factors contribute to this problematic situation. General poverty among the populace creates an environment conducive to corruption, as public officials often seek alternative

means of supplementing their income. The politicization of the public service has led to the appointment of unqualified personnel based on patronage rather than merit, further eroding professionalism and ethical standards. Additionally, weak regulatory instruments and enforcement mechanisms have created a culture of impunity where ethical violations often go unpunished.

The consequences of these ethical failures are far-reaching and multifaceted. They include poor service delivery, inadequate infrastructure, weakened public institutions, diminished public trust, and ultimately, the perpetuation of poverty and underdevelopment despite Nigeria's abundant resources. This situation necessitates a thorough investigation into the root causes of ethical violations in Nigeria's public service and the identification of practical strategies for promoting ethical leadership and accountability.

### Objectives of the Study

This research aims to comprehensively examine the phenomenon of ethical leadership and accountability in Nigeria's public service. The specific objectives are:

1. To investigate the perception and manifestation of ethical leadership within Nigeria's public service sector, examining the extent to which political leaders exhibit accountability and integrity as instruments of governance.
2. To identify and analyze the institutional and cultural factors that constrain ethical behavior and accountability in Nigeria's public service, including poverty, corrupt practices, weak regulatory frameworks, and organizational culture.
3. To propose evidence-based strategic recommendations for promoting ethical leadership and strengthening accountability mechanisms in Nigeria's public service, focusing on institutional reforms, cultural transformation, and leadership development.

### Research Questions

To guide this investigation, the following research questions have been formulated:

1. To what extent do Nigeria's political leaders exhibit accountability and integrity as instruments of governance, and how are these ethical leadership qualities perceived by the public?
2. What are the primary institutional, cultural, and socioeconomic factors that constrain ethical behavior and accountability in Nigeria's public service?
3. What practical strategies and mechanisms can be implemented to promote ethical leadership and strengthen accountability in Nigeria's public service?

## **Conceptual Review**

### **Ethical Leadership**

Ethical leadership in public service is a foundational pillar for building trust and ensuring effective governance. It transcends mere compliance with rules, representing a holistic commitment to moral principles that guide both personal conduct and organizational culture. In today's complex environment, this involves navigating novel dilemmas such as digital privacy, algorithmic bias in automated public service delivery, and the ethical management of vast public datasets (Margetts & Dorobantu, 2019). The concept is not static; it evolves to meet new challenges, demanding that leaders be both morally aware and technically proficient to make decisions that are not only legal but also just and equitable for the citizens they serve. This is particularly critical in an era of deepfakes and misinformation, where public trust is fragile and easily eroded by perceived ethical lapses (Bennett & Livingston, 2018).

The conceptual dimensions of ethical leadership, while rooted in the "moral person" and "moral manager" framework, have been expanded to include a "moral entrepreneur" role in the digital age (Hassan, Wright, & Yukl, 2021). The moral person dimension focuses on the leader's individual character: their honesty, integrity, fairness, and trustworthiness, demonstrated through consistent personal actions. The moral manager dimension is outwardly focused, involving the active promotion of ethical conduct within the organization through clear communication, reinforcement, and holding subordinates accountable. A contemporary example of this duality can be seen in the leadership responses to crises; a leader who transparently acknowledges institutional failures (moral person) and then implements systemic reforms to prevent recurrence (moral manager) embodies both dimensions effectively.

In the Nigerian context, the relevance of ethical leadership is magnified by persistent challenges such as corruption, nepotism, and a historical deficit of public trust. The conceptualization of an ethical leader here must include the courage to resist deeply entrenched informal systems of patronage ("godfatherism") and to make decisions based solely on merit and public interest, a challenge documented in recent analyses of sub-national governance (Okafor & Fatile, 2022). This is exemplified by the ongoing efforts of agencies like the Independent Corrupt Practices and Other Related Offences Commission (ICPC), whose effectiveness is directly tied to the perceived ethical fortitude of its leadership. When such leaders actively "show and tell" their values, they begin to counteract a culture of cynicism and set a new standard for public service.

The practical application of ethical leadership faces significant hurdles, including political pressure,

cultural norms that may conflate loyalty with integrity, and a lack of robust protective mechanisms for whistleblowers. Conceptually, this suggests that ethical leadership cannot be viewed in isolation; it is interdependent with the broader governance ecosystem. For it to flourish, it must be supported by strong, impartial institutions and a vibrant civil society that is empowered to demand accountability, as evidenced by the mixed results of anti-corruption initiatives across Africa (Persson, Rothstein, & Teorell, 2023). Therefore, strengthening ethical leadership is not merely about training individuals but about systematically creating an environment that rewards ethical behavior and imposes tangible costs on ethical violations.

### **Accountability**

Accountability is the bedrock of democratic governance, constituting the mechanisms through which public officials are held responsible for their actions, use of resources, and the outcomes they achieve. Its conceptual core involves three key elements: transparency (openness about actions), answerability (the obligation to justify decisions), and enforceability (the presence of meaningful sanctions for misconduct or poor performance). In the 21st century, the concept has been radically expanded by technology-enabled "social accountability," where citizens and civil society organizations use tools like open data platforms, social media activism, and crowdsourced monitoring to directly hold power to account, often bypassing sluggish or compromised formal channels (Peixoto & Sifry, 2017).

The conceptual framework of accountability operates through multiple, overlapping channels: political, legal, administrative, and professional. A robust system requires these horizontal (between state institutions) and vertical (from state to citizens) mechanisms to function in tandem. Contemporary scholarship emphasizes the rise of "diagonal accountability," a hybrid where civil society actors directly engage with and strengthen horizontal agencies like audit institutions and anti-corruption commissions (Peruzzotti & Smulovitz, 2022). For instance, the audit reports generated by the Office of the Auditor-General for the Federation (a horizontal mechanism) can be leveraged by the media and advocacy by groups like SERAP (social accountability) to pressure the Public Accounts Committees into action, creating a more potent multi-layered web of oversight.

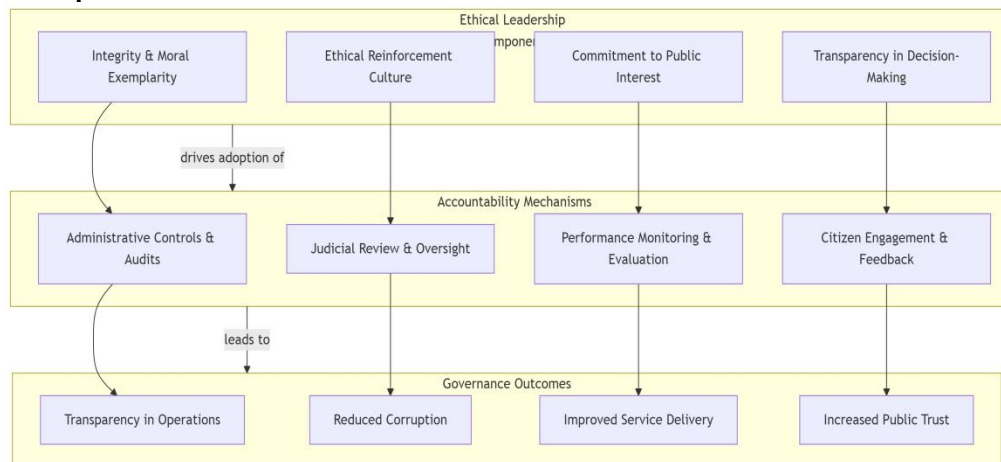
In Nigeria, the conceptual ideal of accountability starkly contrasts with its practical application. While the framework exists on paper, the system is often weakened by politicization, institutional capture, and selective enforcement. A stark contemporary illustration is the persistent and well-documented delays by the National Assembly in reviewing and

acting upon the annual audit reports submitted by the Auditor-General, a critical failure that breaks the chain of answerability and enforceability (International Budget Partnership, 2023). This perpetuates a culture of impunity, where the likelihood of facing consequences for misappropriation is perceived as low, thus enabling both grand corruption and petty malfeasance alike.

Strengthening accountability conceptually requires moving beyond a focus solely on punitive, retrospective measures to building integrated, proactive systems that prevent misconduct. This includes leveraging technology for real-time transparency, such

as the Government Integrated Financial Management Information System (GIFMIS) and the Treasury Single Account (TSA), though their effectiveness is itself dependent on strong political will and technical capacity (Ojo, 2021). Furthermore, promoting performance-based accountability, which ties rewards and sanctions to measurable results and service delivery outcomes, can shift the focus from process to impact. Ultimately, a reconceptualization of accountability in Nigeria must address the underlying political economy factors that weaken institutions and foster an environment where unethical conduct is rationalized and often rewarded.

## Conceptual Framework



This diagram illustrates a conceptual framework where Ethical Leadership serves as the foundational driver for effective governance. The components of ethical leadership such as integrity, transparency, and a commitment to the public interest directly enable the implementation of robust Accountability Mechanisms, including audits, performance monitoring, and citizen engagement. These mechanisms act as the critical link, translating ethical principles into tangible actions. Finally, the effective functioning of these accountability processes leads to desired Governance Outcomes, such as reduced corruption, improved public service delivery, and, ultimately, the cultivation of greater public trust. The framework demonstrates a clear causal pathway from leadership values to concrete results through the essential medium of accountability.

## Theoretical Framework

Transformational Leadership Theory:

Transformational Leadership Theory, initially conceptualized by Burns (1978) and later expanded by Bass (1985), provides a foundational lens for analyzing leadership effectiveness, particularly in relation to

ethics and accountability. The theory posits that transformational leaders influence their followers by appealing to higher moral values and ideals rather than self-interest. Key components of this leadership style include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006). Through these dimensions, transformational leaders can create meaningful organizational change by shaping values, instilling purpose, and elevating follower commitment to collective goals.

In the Nigerian public service, where issues of corruption, weak institutional accountability, and leadership failures are recurrent, transformational leadership theory offers a compelling framework to understand how ethical leadership can be cultivated. Leaders who demonstrate authenticity, moral integrity, and a commitment to national service can inspire civil servants to emulate similar values, thereby improving institutional performance and public trust. According to Avolio and Walumbwa (2014), transformational leaders serve as ethical role models, which is particularly important in governance systems where leadership deficits are deeply entrenched.



Transformational leadership also aligns with the increasing call for public sector reform in developing countries, especially where leadership effectiveness is often undermined by systemic constraints. Studies such as those by Oreg and Berson (2019) have shown that transformational leadership significantly improves organizational citizenship behavior and reduces unethical practices in bureaucratic settings. In Nigeria's public service, this implies that civil servants who work under transformational leaders are more likely to resist corrupt practices, adhere to institutional regulations, and prioritize service delivery outcomes. This transformation is not only behavioral but cultural, embedding ethics and accountability into the core fabric of public institutions.

Moreover, the theory emphasizes the importance of intellectual stimulation, which encourages innovation and critical thinking in public service. Leaders who foster open dialogue and challenge traditional bureaucratic inefficiencies can empower employees to develop creative solutions to longstanding governance problems. As argued by Northouse (2021), such leadership approaches can shift organizational mindsets from passive rule-following to proactive engagement with public challenges. In the Nigerian context, where rigid hierarchies often stifle innovation, transformational leadership can serve as a catalyst for cultural change and institutional modernization.

In conclusion, Transformational Leadership Theory provides a robust theoretical foundation for exploring ethical leadership and accountability in Nigeria's public service. Its emphasis on moral leadership, inspirational vision, and follower development is particularly relevant in a governance context characterized by ethical lapses and institutional decay. Contemporary research underscores the theory's applicability to public sector reform, especially in environments where ethical leadership is urgently needed to rebuild trust and improve service delivery (Banks et al., 2016). This framework thus informs the current study's exploration of how ethical leadership can be operationalized to strengthen accountability mechanisms within Nigeria's public institutions.

### **Empirical Review**

Several empirical studies have investigated the intersection of ethical leadership and accountability within Nigeria's public service, revealing deep-rooted systemic issues and the challenges confronting reform. Igbokwe-Ibeto and Osakede (2023) conducted a comprehensive assessment of ethical violations in Nigeria's public service, identifying persistent misconduct such as bribery, contract inflation, embezzlement, and document falsification. These malpractices were attributed to entrenched corruption, widespread poverty, weak enforcement mechanisms,

and the politicization of public offices. Their study emphasized the role of institutional failure in enabling unethical behavior and recommended reforms such as empowering professional bodies within the civil service, developing anti-crime tools, and strengthening accountability mechanisms across ministries and agencies.

In a related study, Ngare (2023) explored ethical leadership from the perspective of political accountability and found that successive Nigerian administrations consistently failed to institutionalize integrity and public engagement in governance. The study emphasized that public trust in government remains critically low due to leaders' reluctance to uphold transparency and include citizens in decision-making. Ngare concluded that accountability and integrity are not merely ethical virtues but fundamental requirements for sustainable governance. The research underscored that the absence of these values undermines policy legitimacy, disrupts service delivery, and fosters citizen apathy, thereby complicating the public sector reform agenda in Nigeria.

Further empirical evidence is provided by Okagbue (2011), whose research focused on ethical leadership and governance in Nigerian local governments. The study found that public servants overwhelmingly preferred leadership styles rooted in honesty, transparency, and citizen engagement. Civil servants interviewed during the study identified ethical leadership as a catalyst for enhanced service delivery and public confidence. Notably, the research revealed that ethical leadership can be a transformative force when linked with accountability, transparency, and participatory governance. These findings highlight the potential of ethical leadership not just to mitigate corruption, but to create an enabling environment for socioeconomic development and the effective utilization of public resources.

A more recent study by Orie and Egbe (2025) examined the implications of ethical leadership on sustainable development outcomes in Anambra State. The researchers found a direct correlation between strong ethical leadership, institutional governance, and successful implementation of development projects. The study noted that where transparency and stakeholder engagement were present, development outcomes were significantly more positive. Moreover, the research reinforced the idea that ethical leadership is foundational for ensuring long-term development and public trust. It recommended that government policies explicitly integrate ethical governance frameworks and leadership training for public officials to bridge the accountability gap and promote public sector efficiency.

## Methodology

This study adopted a qualitative research design, specifically utilizing content analysis to explore the phenomena of ethical leadership and accountability within Nigeria's public service. A qualitative approach was chosen because it allows for an in-depth, contextual understanding of leadership behavior, institutional dynamics, and socio-cultural factors influencing governance. This method enables the researcher to critically engage with the meanings, themes, and patterns embedded within existing literature, policy documents, reports, and scholarly articles.

The content analysis technique involved the systematic review and interpretation of secondary data drawn from peer-reviewed journals, government publications, organizational reports, and existing empirical studies related to ethical leadership, public service accountability, and governance in Nigeria. Key search terms included "ethical leadership in Nigeria," "public service accountability," "governance challenges," and "transformational leadership in Africa." The documents were selected based on relevance, credibility, and recency (with a preference for sources published between 2010 and 2025), ensuring that the findings are grounded in contemporary evidence and perspectives.

This methodology enabled the researcher to identify recurring themes such as integrity deficits, weak regulatory frameworks, politicization of leadership, and cultural constraints within Nigeria's public institutions. Moreover, the qualitative design provided room to compare and synthesize findings from different authors and regions within Nigeria, revealing both systemic patterns and contextual specificities. Through this process, the study was able to derive strategic recommendations informed by real-world challenges and supported by scholarly consensus.

The data analysis process involved thematic coding, where recurring ideas, narratives, and findings were organized into categories aligned with the study's objectives namely, the perception of ethical leadership, institutional and cultural constraints, and recommendations for promoting accountability. This method facilitated a structured interpretation of qualitative data while preserving the richness of contextual insights.

Overall, the chosen methodology allowed the study to explore ethical leadership and accountability not just as abstract concepts, but as lived realities in Nigeria's public service. The reliance on well-documented secondary data enhanced the credibility of findings and ensured that recommendations were grounded in established knowledge and current governance debates.

## Data Sources and Collection

This study utilized a broad range of secondary sources to explore ethical leadership and accountability in Nigeria's public service. Materials reviewed included peer-reviewed journal articles, textbooks, newspapers, government publications, magazines, and empirical studies relevant to public sector ethics and governance. These sources were identified through systematic searches of academic databases such as Google Scholar, JSTOR, and Scopus, using keywords like "ethical leadership in Nigeria," "public accountability," and "transformational leadership." Emphasis was placed on literature published between 2010 and 2025 to ensure the inclusion of current data and insights.

Additionally, manual reviews of reference lists were conducted to identify further relevant materials. The selected documents were evaluated for relevance, credibility, and academic rigor, providing a comprehensive base for qualitative content analysis. This method allowed the study to critically synthesize existing knowledge, highlight patterns, and offer insights into the challenges and opportunities for promoting ethical leadership and accountability in Nigeria's public service.

## Data Analysis

The collected data were analyzed using qualitative content analysis, involving a systematic process of identifying, coding, and categorizing patterns and themes related to ethical leadership and accountability. This approach enabled the reduction of extensive data into manageable themes, allowing for meaningful interpretation and inference. The analysis focused on both manifest content, which refers to the directly observable information, and latent content, which involves uncovering the underlying meanings and contextual nuances. Through ongoing engagement with the source materials, the study ensured the reliability of its interpretations and developed a comprehensive understanding of the complex phenomena under investigation.

## Ethical Considerations

The research adhered to ethical standards for secondary data analysis by appropriately acknowledging all sources through proper citations and references. Intellectual honesty and integrity were maintained throughout the study by accurately representing the findings and arguments from the source materials, ensuring there was no misrepresentation or manipulation of information. This careful attention to ethical considerations upheld the credibility and reliability of the research.

## **Discussion of Findings**

The analysis of secondary sources revealed several key findings regarding ethical leadership and accountability in Nigeria's public service:

### **Pervasive Ethical Violations and Systemic Corruption:**

The study confirmed the existence of widespread ethical violations in Nigeria's public service, ranging from petty corruption to grand misappropriation of public funds. These violations have become institutionalized and normalized within the system, creating a culture where ethical conduct is often the exception rather than the norm. The pervasiveness of corruption has significantly undermined public trust in government institutions and impaired the effectiveness of service delivery. Particularly concerning was the finding that ethical violations persisted even during emergency situations such as the COVID-19 pandemic, when public officials looted palliative materials meant for vulnerable populations. This demonstrates the depth of the ethical crisis within Nigeria's public service and suggests that existing accountability mechanisms are insufficient to deter misconduct, especially among those in leadership positions.

### **Weak Institutional Frameworks and Enforcement Mechanisms:**

A critical finding of this study is the weakness of institutional frameworks designed to promote ethical conduct and ensure accountability in Nigeria's public service. Although Nigeria has established various institutions and regulations to combat corruption and enforce accountability, these mechanisms have proven ineffective due to political interference, inadequate resources, and weak enforcement capacity. The study revealed that regulatory capture has been a significant problem, with political leaders often interfering with the operations of accountability institutions to protect themselves and their allies from scrutiny. This has created a culture of impunity where public officials can engage in ethical violations with minimal fear of consequences. Additionally, the judicial system has been compromised in many cases, further weakening the accountability framework.

### **Socioeconomic and Cultural Factors Enabling Ethical Violations:**

The research identified several socioeconomic and cultural factors that contribute to ethical violations in Nigeria's public service. General poverty among the population has created pressure on public officials to seek alternative means of income generation, often through corrupt practices. The politicization of the public service has led to the appointment of unqualified personnel based on patronage rather than merit, further

eroding professionalism and ethical standards. Additionally, the study found that the legacy of colonial administration continues to influence ethical practices in Nigeria's public service. The colonial administration was characterized by authoritarianism and extraction rather than service to the public, and elements of this legacy persist in contemporary administrative practices. This historical context helps explain why ethical leadership and accountability have been difficult to institutionalize in Nigeria's public service.

### **Leadership Failure and Erosion of Public Trust:**

The study documented a crisis of leadership in Nigeria's public service, with successive political leaders failing to exemplify accountability and integrity in governance. This leadership failure has had a trickle-down effect throughout the public service, creating an environment where ethical violations are tolerated and even expected. The erosion of public trust has been both a cause and consequence of unethical leadership, as citizens' diminishing faith in public institutions reduces their willingness to hold leaders accountable while also justifying further ethical violations by public officials. This vicious cycle has been difficult to break, as each generation of leaders seems to perpetuate the patterns of misconduct established by their predecessors.

## **Conclusion**

This study has examined the critical issues of ethical leadership and accountability in Nigeria's public service, revealing a complex web of challenges that have significantly impaired the effectiveness of governance and service delivery. The research demonstrates that ethical violations are pervasive and systemic, ranging from petty corruption to grand misappropriation of public funds. These violations are facilitated by weak institutional frameworks, socioeconomic factors, and a culture of impunity that has developed over decades.

The interrelationship between ethical leadership and accountability has been clearly established, with weaknesses in both areas creating a vicious cycle that undermines good governance. Ethical leadership is essential for establishing the moral tone and cultural norms that support accountability, while robust accountability mechanisms are necessary to reinforce ethical leadership by providing consequences for violations. The absence of both elements in Nigeria's public service has resulted in poor service delivery, weakened institutions, diminished public trust, and ultimately, the perpetuation of poverty and underdevelopment despite Nigeria's abundant resources. The study concludes that addressing the challenges of ethical leadership and accountability in Nigeria's public

service requires a comprehensive approach that addresses both individual and institutional dimensions. Transformational leadership that inspires ethical conduct must be complemented by institutional reforms that create effective accountability mechanisms. Additionally, socioeconomic factors that enable corruption must be addressed through broader policy interventions aimed at poverty reduction and the promotion of inclusive development.

### Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance ethical leadership and accountability in Nigeria's public service:

1. **Institutional Strengthening:** Public institutions responsible for ensuring accountability should be strengthened with adequate resources, operational independence, and protected mandates to minimize political interference. This includes anti-corruption agencies, audit institutions, and the judiciary. Specifically, legislation protecting these institutions from political manipulation should be enacted and enforced.
2. **Leadership Development and Ethics Training:** Comprehensive leadership development programs incorporating ethics training should be implemented at all levels of the public service. These programs should emphasize the principles and practices of ethical leadership, focusing on values such as integrity, transparency, and accountability. Such training should be mandatory for all public officials, particularly those in leadership positions.
3. **Transparency and Open Government Initiatives:** The government should implement robust transparency initiatives including open data platforms, public access to information, and citizen engagement mechanisms. The Open Tendering System for government contracts implemented in Anambra State represents a good practice that could be scaled nationally to reduce corruption in public procurement.
4. **Performance Management and Accountability Systems:** Effective performance management systems

with clear metrics and consequences for non-performance should be established throughout the public service. These systems should link performance evaluation to rewards and sanctions, creating incentives for ethical conduct and discouraging violations.

5. **Socioeconomic Reforms:** Broader socioeconomic reforms addressing poverty and inequality should be implemented to reduce the pressures that contribute to corrupt practices. This includes reviewing the compensation structure for public servants to ensure living wages that reduce the temptation for unethical supplementation of income.

### Suggestions for Further Study

Based on the limitations and findings of this research, the following areas are recommended for further investigation:

1. **Comparative Studies:** Research comparing ethical leadership and accountability mechanisms in Nigeria's public service with those of other countries (both within and outside Africa) could provide valuable insights into context-specific and transferable solutions.
2. **Sector-Specific Analyses:** Studies focusing on specific sectors of Nigeria's public service (such as health, education, or security) could reveal sector-specific challenges and opportunities for promoting ethical leadership and accountability.
3. **Longitudinal Research:** Investigations tracking changes in ethical leadership and accountability practices over time would help assess the effectiveness of interventions and reforms aimed at addressing these issues.
4. **Quantitative Assessments:** Research employing quantitative methods to measure the prevalence and impact of ethical violations would provide valuable data for evidence-based policy formulation and resource allocation.
5. **Intersectional Studies:** Examinations of how factors such as gender, ethnicity, and religion intersect with ethical leadership and accountability practices could reveal important insights for targeted interventions.

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## Remote Work Challenges and Opportunities for Enhancing Employee Responsiveness in Bonny's Oil and Gas Sectors

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### **Abstract**

*This study investigated the relationship between remote work and employee responsiveness within the bonny oil and gas sector. Specifically, it examined how teleworking relates to three measures of employee responsiveness: flexibility, speed, and adaptability. A correlational research design was used, with data collected from 186 employees using a structured questionnaire. The Pearson Product Moment Correlation Coefficient was used to analyze the relationships between the variables. The findings showed a significant positive relationship between remote work and employee responsiveness. The study concludes that remote work arrangements can enhance employee responsiveness in the oil and gas industry, suggesting that organizations should strategically implement flexible work models to improve performance. Based on these findings, the study recommends that oil and gas companies: Develop comprehensive policies for teleworking, clearly defining eligibility, performance expectations, and communication protocols. Promote hybrid work models to balance operational needs with employee flexibility. Establish performance monitoring and feedback systems to continually evaluate the effectiveness of remote work arrangements.*

**Keywords:** Remote Work, Teleworking, Employee Responsiveness, Flexibility, Speed, Adaptability.

### **Introduction**

The modern business environment is characterized by rapid and constant change, which can quickly make traditional plans obsolete. To remain effective and competitive, organizations must prioritize responsiveness at every level of operation (Lin & Wu, 2011). Responsiveness allows employees to adapt their behaviors and actions to advance value, making it critical for the survival and success of any business (Proctor, 2018). It encourages operational and administrative flexibility, enabling organizations to quickly detect market changes, reconfigure processes, and adopt new technologies ahead of competitors (Hoyt, Huq & Kreiser, 2007). Responsive employees not only adapt to change but also create new opportunities (Emen, Nahseren & Quiclear, 2012). Remote work is a working style that allows professionals to perform their duties outside a traditional office setting. This approach is built on the idea that work doesn't require a specific location to be completed successfully (Thorstensson, 2020). Instead of commuting to a designated desk, remote employees

can complete projects from anywhere, giving them the flexibility to better integrate their professional and personal lives. This can lead to benefits such as improved work-life balance, access to more career opportunities, and reduced commuting costs. These arrangements can increase employee satisfaction, boost productivity, and generate cost savings for the organization.

The benefits of remote work are widely acknowledged. Flexible scheduling, for instance, gives employees autonomy in planning their daily lives (Lupu, 2017). Other benefits include the freedom to adjust work hours, work a compressed week, or schedule personal appointments during the day, which can reduce absenteeism and stress (Wienclaw, 2019). These factors can also help mitigate the impact of adverse weather and reduce health-related issues (Lupu, 2017). Despite the growing literature on this topic, many studies have not fully explored the potential of remote work as a solution to common organizational challenges. This study aims to fill that gap.

### Problem Statement

A significant problem facing many oil and gas firms in Nigeria is a lack of employee responsiveness. This is reflected in the inability of some companies to meet the evolving demands of their market and environment. According to Team (2023), approximately 80% of businesses in Nigeria fail within nine years, a failure rate often attributed to a firm's inability to keep pace with market changes. This lack of responsiveness stems from a deficit in flexibility, speed, and adaptability, which are often linked to a lack of effective remote work policies, poor use of information technology, and ineffective process management. These deficiencies have been associated with increased cases of cybercrime, poor service delivery, and a decline in

profitability and competitiveness (Pehrsson, 2014). This study addresses the crucial question of how organizations can effectively tackle this issue.

### Purpose of the Study

The primary purpose of this study is to empirically examine the relationship between remote work (specifically teleworking) and employee responsiveness (measured by flexibility, speed, and adaptability) in oil and gas firms in Bonny, Nigeria.

### Conceptual Framework

The conceptual framework for this study is as follows; Predicting Variable: Remote Work (Teleworking); Criterion Variable: Employee Responsiveness (Flexibility, Speed, and Adaptability)

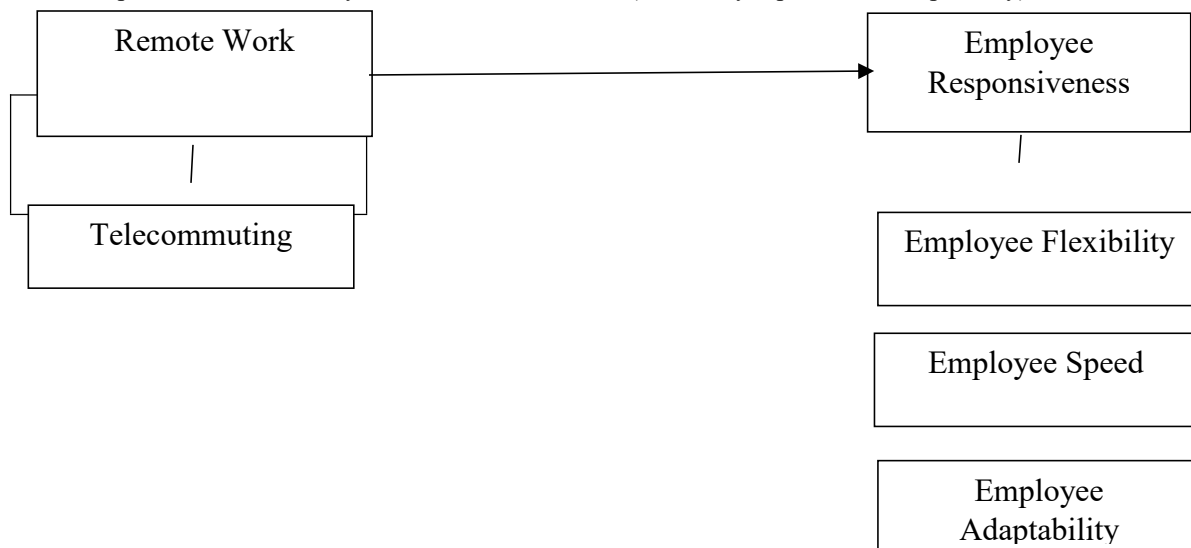


**Fig. 1.1: Conceptual framework for remote work and employee responsiveness**

Source: Jack Nilles (1988).

### Literature Review and Theoretical Framework

#### Theoretical Framework: Self-Efficacy Theory

This study is grounded in Self-Efficacy Theory, a core component of Bandura's (1986) broader social cognitive theory. The theory posits that an individual's behavior, environment, and cognitive factors are interconnected. Specifically, it suggests that an employee's belief in their ability to perform remote work tasks (their self-efficacy) directly influences their effort, persistence, and, ultimately, their performance. By increasing employees' self-efficacy regarding remote work, organizations can potentially improve their outcomes. This theoretical lens is particularly relevant because remote work requires a high degree of self-discipline, motivation, and the belief that one can successfully manage tasks independently. The theory's

emphasis on how past successes and failures shape an individual's mastery expectations provides a valuable framework for understanding how employees adapt and perform in a remote setting.

### Conceptual Review

#### Remote Work

Also known as distance working or telework, remote work is an arrangement where employees carry out their job responsibilities from a location other than the conventional office. This typically involves using digital communication and collaboration tools such as video conferencing, email, and project management software. As Elshaiekh et al. (2018) noted, remote workers often exhibit a high degree of self-discipline and are motivated by factors like proximity to family or a desire for social distancing. The concept aligns with Flexibility Firm Theory (Rodgers, 1992), which argues that workers experience greater flexibility when working from home, enabling them to better manage personal and professional responsibilities.

### **Employee Responsiveness**

Employee responsiveness is a crucial organizational capability that reflects how quickly and effectively employees react to changes in the business environment to capitalize on opportunities (Bernardes & Hanna, 2009). It involves the ability to sense, interpret, and act on market stimuli (Garrett, Covin & Slevin, 2009). This study examines three key dimensions of employee responsiveness:

**Employee Flexibility:** This is the ability of employees to alter and adjust their operations in response to changing environmental demands (Homburg et al., 2007). It represents the availability of choices for how, when, and where employees engage in their work (Hill et al., 2008).

**Employee Speed:** This refers to the pace of an employee's operations and processes. It signifies their capacity to increase the speed of their work to meet service demands and environmental changes (Homburg et al., 2007).

**Adaptability:** This is a facet of resilience that encompasses the ability to learn, experiment with new solutions, and develop broad responses to various challenges (Walter et al., 2006). It is the inclination to maintain an experimental attitude and act in line with changing circumstances (Bowden, 1946).

### **Empirical Review**

**Remote Work and Employee Flexibility:** The emergence of digital technology has enabled organizations to adopt remote work, which, in turn, has been associated with greater employee flexibility (Spreitzer et al., 2017). This is supported by the notion that working from home allows employees to better balance family and work responsibilities (Kaur, Malhotra, & Sharma, 2020). However, the direct correlation remains a subject of debate, which this study were investigate.

**Remote Work and Employee Speed:** Several studies suggest remote workers experience fewer interruptions, leading to increased focus, speed, and overall job performance (Grant & Campbell, 2020). Remote work also provides a sense of control and can improve time management by reducing commuting (Kossek et al., 2019; Bai et al., 2021). The hypothesis that remote work positively impacts employee speed was examined.

**Remote Work and Employee Adaptability:** Remote work can foster a sense of autonomy and adaptability by giving employees greater control over their schedules and processes (Fukumura et al., 2021). However, some research highlights challenges like blurred boundaries between work and home life, which can negatively impact adaptability. This study explore whether the benefits of increased autonomy outweigh these challenges in the context of employee adaptability.

### **Methodology**

#### **Research Design**

This study will use a correlational research design to examine the relationship between remote work (the predictor variable) and employee responsiveness (the criterion variable). This design is suitable for quantifying the strength and direction of the relationship between variables, and it provides a systematic approach for data analysis using statistical tools like the Pearson Product Moment Correlation Coefficient.

#### **Population and Sampling**

The population for this study consists of employees of five selected oil and gas firms in Bonny, Rivers State. A sample of 384 respondents was drawn from this population. This sample size is considered representative and was determined using the Taro Yamane and Bowley's (1969) sampling formulas. The sample was proportionately distributed across the selected firms. The unit of analysis is the individual employee, who is considered best positioned to provide accurate and relevant data.

#### **Data Collection**

Primary data was the main source of information for this study. Data was collected using a structured questionnaire as the principal instrument.

#### **Validity and Reliability**

The research instrument was subjected to validity tests, including content and construct validity, to ensure it accurately measures the intended concepts. Reliability will be assessed using the Cronbach's alpha coefficient, a statistical measure of internal consistency.



**Table 3.1 Result of Reliability Test**

| Variables             | No of items | Alpha value |
|-----------------------|-------------|-------------|
| Teleworking           | 4           | 0.874       |
| Employee Flexibility  | 4           | 0.925       |
| Employee Speed        | 4           | 0.765       |
| Employee Adaptability | 4           | 0.875       |

Source: SPSS Output, 2025

### Descriptive Statistics

Descriptive statistics were used to summarize and describe the basic features of the data. This includes demographic and univariate data. Demographic data refers to characteristics of the study participants, such as age, gender, or location. Univariate data involves the analysis of a single variable at a time, like the average score on a test. Descriptive statistics provide simple summaries about the sample and what the data shows, without making conclusions beyond the analyzed data itself. Common descriptive statistics include:

Measures of central tendency: mean, median, and mode; Measures of variability: standard deviation, variance, and range, and Frequency distributions: tables and graphs showing how often different values occur.

### Inferential Statistics

#### Results

#### Field Report

**Table 4.1: Questionnaire Distribution and Recovery**

| Oil and Gas Sector         | Questionnaire Disseminated | Not Retrieved | Retrieved and usable copies |
|----------------------------|----------------------------|---------------|-----------------------------|
| Bonny oil and gas terminal | 46                         | 3             | 43                          |
| Bonny oil and gas terminal | 19                         | -             | 19                          |
| Nigeria LNG Plant          | 55                         | 4             | 51                          |
| Mazigan Limited            | 26                         | 1             | 25                          |
| Tides Oil & Gas            | 50                         | 2             | 48                          |
| <b>Total</b>               | <b>196</b>                 | <b>10</b>     | <b>186</b>                  |

Source: Fieldwork, (2025)

A total of 196 questionnaires were distributed. Of these, 186 were returned and used for analysis, resulting in a retrieval rate of approximately 95%. Ten questionnaires were not retrieved because the respondents were unable to complete them.

Inferential statistics were used to make inferences and draw conclusions about a larger population based on the sample data. This method was used to establish the nature and direction of the relationship between variables. For example, inferential statistics could be used to determine if there is a statistically significant relationship between the amount of time spent studying and a student's test score, and if that relationship is positive (as one increases, the other increases) or negative (as one increases, the other decreases). Common inferential statistical techniques include:

Correlation analysis: measures the strength and direction of a linear relationship between two variables.

Regression analysis: predicts the value of a dependent variable based on one or more independent variables.

Hypothesis testing: includes t-tests, ANOVA, and chi-square tests, which are used to determine if there is enough evidence in a sample to conclude that a certain condition is true for the entire population.

### Findings on Remote Work (Predictor Variable)

The survey results on teleworking, a dimension of remote work, indicate a generally positive perception among employees.

**Work-Life Control:** A strong majority of respondents felt that teleworking provides control over their work

time and family life. Specifically, 81.4% (156 out of 192) either strongly agreed or agreed with this statement.

**Minimal Interference:** Responses were mixed regarding interruptions. While a total of 60.2% (115 out of 192) agreed or strongly agreed they experience little interference, a significant minority of 30.8% (59 out of 192) disagreed or strongly disagreed.

**Effective Use of Working Hours:** A very high percentage of respondents, 78.6% (151 out of 192), agreed or strongly agreed that their working hours were used effectively.

**Sense of Independence:** Most respondents, 63% (121 out of 192), felt a sense of independence with teleworking.

### Findings on Employee Responsiveness (Criterion Variable)

This section presents findings on the three dimensions of employee responsiveness: flexibility, speed, and adaptability.

#### Employee Flexibility

The results suggest that employees perceive their firm as being highly flexible.

**Operational Agility:** 81.3% (156 out of 192) of respondents agreed or strongly agreed that the firm can effectively alter its operations.

**Behavioral Dynamics:** A strong majority of 70.3% (135 out of 192) agreed or strongly agreed that the firm is dynamic in its behavior and disposition to change.

**Business Process Change:** A solid 63% (121 out of 192) of respondents agreed or strongly agreed that the firm can change its approach to business functions and processes.

**Relationship Building:** A total of 63% (121 out of 192) of respondents agreed or strongly agreed that the firm builds relationships to advance operational alternatives.

#### Employee Speed

##### Statement Items and Analyzed Responses on Teleworking

|                                                     | N   | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------------------------------------|-----|---------|---------|------|----------------|
| I control my working time and family life           | 186 | 1       | 5       | 3.95 | 1.119          |
| I experience little interference and interruptions, | 186 | 1       | 5       | 3.33 | 1.443          |
| My working hours is used effectively                | 186 | 2       | 5       | 4.17 | .988           |
| I feel independence with teleworking                | 186 | 1       | 5       | 3.62 | .964           |
| Valid N (listwise)                                  | 186 |         |         |      |                |

*Source: SPSS Output, 2025*

The findings on employee speed were generally positive, with some variation.

**Prompt Decision-Making:** A total of 70.3% (135 out of 192) of respondents agreed or strongly agreed that decision-making is prompt.

**Work Velocity:** 63% (121 out of 192) of respondents agreed or strongly agreed that work is done quickly.

**Pace with Change:** A solid 63% (121 out of 192) of respondents agreed or strongly agreed that the organization maintains pace with changes.

**Meeting Customer Needs:** A total of 58.3% (112 out of 192) of respondents agreed or strongly agreed that agility is leveraged to meet customer needs.

#### Employee Adaptability

The results on employee adaptability were largely positive, with a very high level of agreement on one key point.

**Creating Changes:** A significant majority of 70.3% (135 out of 192) of respondents agreed or strongly agreed that adaptability allows for creating changes.

**Concern-Driven Organization:** The responses were more divided on this item. While 47.9% (92 out of 192) agreed or strongly agreed, a substantial percentage of 25.5% (49 out of 192) disagreed or strongly disagreed.

**Resilience to Change:** An overwhelming 81.3% (156 out of 192) of respondents agreed or strongly agreed that employees are resilient to sensitive changes.

**Competitive Advantage:** A total of 56.2% (108 out of 192) of respondents agreed or strongly agreed that the organization creates advantages over less adaptive competitors.

#### Univariate Data Analysis

The study uses the mean value thresholds established by Asawo (2009) to interpret the data. The benchmark for a positive or favorable response is a mean score of 3.00 or higher.

Low: Mean (M) between 1.0 and 2.4; Moderate: Mean (M) between 2.5 and 3.4; High: Mean (M) between 3.5 and 4.4; and Very High: Mean (M) of 4.5 and above.

The study found a general consensus among employees that teleworking improves the effective use of working hours ( $M = 4.17$ ) and provides them with a sense of independence (mean values  $> 3.50$ ). This suggests that employees feel more productive and autonomous when working remotely.

### Areas of Concern

Despite the perceived benefits, there is a notable challenge with interruptions and interference during teleworking ( $M = 3.33$ ). The lower mean score and high standard deviation ( $SD = 1.443$ ) indicate that experiences with interruptions vary significantly among employees. This suggests that while some employees may find their remote environment distraction-free, others face considerable challenges, impacting their ability to concentrate.

### Statement Items and Analyzed Responses on Employee Flexibility

|                                                                                         | N   | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------------------------------------------------------------------------|-----|---------|---------|------|----------------|
| My firm is able to effectively alter its operations                                     | 186 | 1       | 5       | 4.08 | 1.000          |
| My firm is dynamic in its behaviour and disposition to change                           | 186 | 1       | 5       | 3.87 | 1.327          |
| My firm is able to change its approach to business functions and processes              | 186 | 1       | 5       | 3.68 | 1.240          |
| My firm builds on relationships in advancing its alternatives to actions and operations | 186 | 1       | 5       | 3.51 | 1.384          |
| Valid N (listwise)                                                                      | 186 |         |         |      |                |

**Source:** SPSS Output, 2025

**Mean scores** for Employee Flexibility items ranged from **3.51 to 4.08**., Highest mean: *“My firm is able to effectively alter its operations”* ( **$M = 4.08$ ,  $SD = 1.000$** ). Lowest mean: *“My firm builds on relationships in advancing its alternatives to actions and operations”*

( **$M = 3.51$ ,  $SD = 1.384$** ).

Employees mostly agree that their firms adapt operationally when needed, but are slightly less certain about relationship-building for adaptability (lower mean of 3.51 with more variability in views).

### Statement Items and Analyzed Responses on Employee Flexibility

|                                         | N   | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------------------------|-----|---------|---------|------|----------------|
| Decision-making is prompt in my firm    | 186 | 2       | 5       | 3.95 | .955           |
| In my organization work is done quickly | 186 | 1       | 5       | 3.84 | 1.250          |

|                                                                                         |     |   |   |      |       |
|-----------------------------------------------------------------------------------------|-----|---|---|------|-------|
| In my organization we maintain pace with changes in our work environment                | 186 | 1 | 5 | 3.67 | 1.373 |
| In my organization we leverage on agility as a major capacity in meeting customer needs | 186 | 1 | 5 | 3.53 | 1.253 |
| Valid N (listwise)                                                                      | 186 |   |   |      |       |

*Source: SPSS Output, 2025*

**Mean scores** for speed items ranged from **3.53** to **3.95**. Highest mean: “*Decision-making is prompt in my firm*” (**M = 3.95, SD = 0.955**). Lowest mean: “*We leverage agility to meet customer needs*” (**M = 3.53,**

**SD = 1.253**). Employees agree that prompt decision-making is strength. However, agility as a deliberate strategy for meeting customer needs is slightly less emphasized (lower mean, more spread in responses).

#### Statement Items and Analyzed Responses on Employee Adaptability

|                                                                        | N   | Minimum | Maximum | Mean | Std. Deviation |
|------------------------------------------------------------------------|-----|---------|---------|------|----------------|
| Adaptability allow us to create changes                                | 186 | 1       | 5       | 3.94 | 1.396          |
| In my organization we are driven by concern                            | 186 | 1       | 5       | 3.32 | 1.240          |
| We are resilient to sensitive changes in my organization               | 186 | 1       | 5       | 3.97 | .947           |
| We create advantages over less adaptive competitors in my organization | 186 | 1       | 5       | 3.66 | 1.185          |
| Valid N (listwise)                                                     | 186 |         |         |      |                |

*Source: SPSS Output, 2025*

**Mean scores** for adaptability-related competitive advantage items ranged from **3.32** to **3.97**. Highest mean: “*We are resilient to sensitive changes in my organization*” (**M = 3.97, SD = 0.947**). Lowest mean: “*In my organization we are driven by concern*” (**M = 3.32, SD = 1.240**).

Resilience to changes is seen as strength (high mean

and low standard deviation). However, concern-driven motivation is rated lower and more variable, suggesting different experiences among employees.

**Scatter Plot Showing a Positive Relationship between Remote Work and Employee Responsiveness of Oil and Gas Firms Bonny, Nigeria**

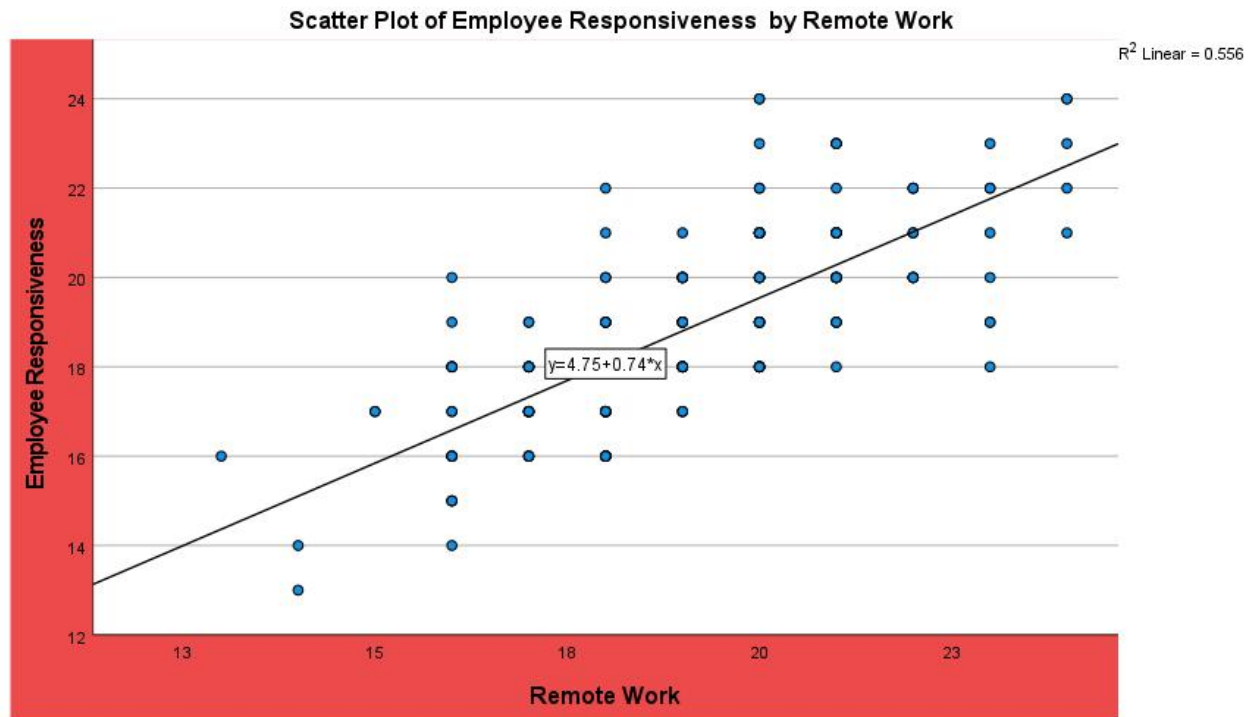


Figure 4.6: Scatter diagram of the positive relationship between remote work and employee responsiveness

As obviously indicated in the diagram above, the dependent variable being employee responsiveness was plotted on the Y-axis while the independent variable being remote work was plotted on the X-axis. The apparent cases in the scatter plot sloping upwards from left to right display the existence of a linear as well as positive relationship between the variables. The evidence of an existing relationship between the variables through the plot of a scatter diagram as illustrated in figure 4.6 above became the basis upon which the study upheld as well as proceeded with the bivariate analysis.

#### Bivariate Data Analyses

The results of analyzed postulated hypotheses were presented with test conducted using Pearson's Product Moment Correlation Coefficient at 99% confidence level, which was accepted as a criterion for the probability for either accepting the null hypothesis at ( $p > 0.01$ ) or rejecting the null hypothesis formulated at ( $p < 0.01$ ). The strength of the correlation was interpreted according to the guideline provided by Dancey and Reidy (2007), where coefficients between 0.1–0.3 indicate a weak relationship, 0.4–0.6 indicate a moderate relationship, and 0.7–1.0 indicates a strong relationship."

#### Correlation Result of Teleworking and Employee Flexibility

H<sub>01</sub>: There is no significant relationship between teleworking and employee flexibility of oil and gas firms in Bonny.

|                      |                     | Teleworking | Employee Flexibility |
|----------------------|---------------------|-------------|----------------------|
| Teleworking          | Pearson Correlation | 1           | .800**               |
|                      | Sig. (2-tailed)     |             | .000                 |
|                      | N                   | 186         | 186                  |
| Employee Flexibility | Pearson Correlation | .800**      | 1                    |
|                      | Sig. (2-tailed)     | .000        |                      |
|                      | N                   | 186         | 186                  |

Source: SPSS Output, 2025

**Correlation coefficient (r) = .800 (p < .01), Strength:** Very Strong Positive Relationship.

There is a very strong and statistically significant positive relationship between teleworking and employee flexibility. This means that as teleworking opportunities increase, employee flexibility also increases substantially.

#### Correlation Result of Teleworking and Employee Speed

H<sub>02</sub>: There is no significant relationship between teleworking and employee speed of oil and gas firms in Bonny.

|                |                     | Teleworking | Employee Speed |
|----------------|---------------------|-------------|----------------|
| Teleworking    | Pearson Correlation | 1           | .880**         |
|                | Sig. (2-tailed)     |             | .000           |
|                | N                   | 186         | 186            |
| Employee Speed | Pearson Correlation | .880**      | 1              |
|                | Sig. (2-tailed)     | .000        |                |
|                | N                   | 186         | 186            |

Source: SPSS Output, 2025

**Correlation coefficient (r) = .880 (p < .01), Strength:** Very Strong Positive Relationship

A very strong positive relationship exists between teleworking and employee speed. Employees who engage in teleworking tend to complete their tasks faster and respond more promptly to work demands.

#### Correlation Result of Teleworking and Employee Adaptability

H<sub>03</sub>: There is no significant relationship between teleworking and employee adaptability of oil and gas firms in Bonny.

|                       |                     | Teleworking | Employee Adaptability |
|-----------------------|---------------------|-------------|-----------------------|
| Teleworking           | Pearson Correlation | 1           | .862**                |
|                       | Sig. (2-tailed)     |             | .000                  |
|                       | N                   | 186         | 186                   |
| Employee Adaptability | Pearson Correlation | .862**      | 1                     |
|                       | Sig. (2-tailed)     | .000        |                       |
|                       | N                   | 186         | 186                   |

Source: SPSS Output, 2025

**Correlation coefficient (r) = .862 (p < .01), Strength:** Very Strong Positive Relationship.

Teleworking strongly enhances employee adaptability.

Employees working remotely are highly capable of adjusting to new procedures, tools, and work environments.

#### Summary of Correlation Results

| Hypothesis | Variables                             | r-value | Strength of Relationship | Interpretation                                               |
|------------|---------------------------------------|---------|--------------------------|--------------------------------------------------------------|
| H01        | Teleworking and Employee Flexibility  | .800    | Very Strong Positive     | Teleworking significantly improves employee flexibility.     |
| H02        | Teleworking and Employee Speed        | .880    | Very Strong Positive     | Teleworking leads to faster work completion among employees. |
| H03        | Teleworking and Employee Adaptability | .862    | Very Strong Positive     | Teleworking enhances employees' ability to adapt to changes. |

This report summarizes the findings of a study on the relationship between remote work and employee responsiveness in the oil and gas sector in Bonny, Rivers State, Nigeria. The research focused on how teleworking impacts three key measures of employee responsiveness: flexibility, speed, and adaptability.

### Key Findings

The study found a strong and statistically significant positive relationship between teleworking and all three measures of employee responsiveness. The correlation coefficients were all above 0.70, indicating a very strong connection.

**Teleworking and Flexibility:** There was a significant positive relationship with a correlation coefficient ( $r$ ) of 0.800. This suggests that teleworking empowers employees to manage their schedules and tasks more effectively, enhancing their overall flexibility. This finding is consistent with existing research that highlights teleworking's positive impact on work-life balance.

**Teleworking and Speed:** The study revealed a very strong positive relationship with a correlation coefficient ( $r$ ) of 0.880. This indicates that remote work arrangements help employees complete tasks more quickly, likely due to fewer distractions and greater control over their work environment. This supports the idea that increased autonomy leads to faster task execution.

**Teleworking and Adaptability:** A strong positive relationship was found with a correlation coefficient ( $r$ ) of 0.862. This suggests that teleworking enhances an employee's ability to adjust to new demands, processes, and technologies. This is in line with previous research

showing that remote work fosters independence and helps employees manage changes more effectively. All  $p$ -values were less than 0.01, confirming the statistical reliability of the results.

### Conclusions

The study concludes that remote work, specifically teleworking, is a powerful tool for enhancing employee responsiveness in the oil and gas sector. By providing employees with greater control over their work conditions, it leads to significant improvements in their flexibility, speed, and adaptability. This makes remote work a strategic asset for fostering organizational agility, maintaining productivity, and ensuring competitiveness in an industry traditionally reliant on on-site operations.

### Recommendations

Based on these findings, it is recommended that oil and gas companies in the region take the following actions: **Formalize Policies:** Develop and implement clear, comprehensive policies for teleworking. These should define eligibility, performance expectations, communication protocols, and accountability measures to ensure a smooth and productive transition.

**Invest in Technology:** Provide the necessary technological infrastructure to support remote work. This includes investing in reliable digital platforms, collaborative software, robust internet facilities, and strong cyber-security to maintain efficiency and productivity.

**Boost Managerial Support:** Train managers to effectively lead remote teams. This includes maintaining frequent communication, providing professional and emotional support, and recognizing the achievements of remote employees to foster motivation and a sense of belonging.

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## Artificial Intelligence for Humanizing Access to Education in Africa: Overcoming the Burden of Distance

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### Abstract

#### Aim/Purpose

This perspective article explores how artificial intelligence (AI) can address the persistent barrier of geographical distance in African education, where rural learners travel long distances to under-resourced schools and urban learners face congestion and economic segregation. It argues that AI can transform distance from a structural disadvantage into an opportunity for equitable inclusion.

#### Background

Distance is a major determinant of access in Africa, intersecting with socioeconomic inequalities and infrastructural deficits. While AI-enabled learning tools are expanding globally, their role in mitigating Africa's distance-related inequities, especially in rural and peri-urban settings, remains underexplored.

#### Methodology

The article adopts a perspective approach, drawing on African case studies, policy insights, and emerging data to synthesize how AI interventions—adaptive tutoring, predictive analytics, and immersive classrooms—relate to equity.

#### Contribution

It positions AI not merely as a technological tool but as a culturally embedded strategy for social justice. The article introduces an Africanized framework combining opportunity cost, digital equity, and Ubuntu pedagogy to evaluate AI's potential to humanize learning.

#### Findings

Examples from Kenya, South Africa, and Uganda show that AI can reclaim time lost to travel, reduce fatigue, and expand access to resources. However, gaps in connectivity, affordability, and digital literacy risk reinforcing inequalities if adoption is not inclusive.

#### Recommendations for Practitioners

Educational policymakers and practitioners should design AI initiatives that are low-bandwidth, multilingual, and culturally relevant, ensuring accessibility for rural and peri-urban learners. Investments in infrastructure, digital literacy, and equity-focused policies are essential for sustainable adoption.

#### Recommendations for Researchers Impact on Society

Future research should emphasize Africa-specific longitudinal studies, localized AI design, and cross-disciplinary collaborations.  
Harnessing AI to overcome distance can advance educational equity, reduce dropout

|                 |                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Future Research | rates, and foster inclusive human development across Africa. Further inquiry should address ethical safeguards, Ubuntu-informed pedagogy, and the scalability of inclusive AI solutions. |
| Keywords        | Artificial intelligence in education, Africa, educational equity, distance and access, digital divide, humanized pedagogy.                                                               |

## Introduction

The challenge of distance in education remains particularly acute in Africa, where geographical and infrastructural barriers continue to shape access to learning opportunities (Gunter, 2025). Across many countries in sub-Saharan Africa, students in rural communities often walk several kilometres daily to reach schools, while urban learners face long commutes through congested and unreliable transport systems (Chilewa, 2019). UNESCO reports that nearly 34% of African children live more than 30 minutes away from a primary school, a proportion far higher than the global average, and in countries such as Nigeria, Tanzania, and Ethiopia, travel times frequently exceed one hour each way (Nwoke et al., 2024a). These spatial barriers intersect with structural inequalities: rural schools are more likely to be under-resourced, while urban schools remain stratified by economic segregation, perpetuating cycles of unequal opportunity (Nwoke et al., 2024b).

Artificial intelligence (AI) is increasingly presented as a transformative tool that can mediate these challenges by decoupling learning from geography (Rakuasa, 2023). AI-driven adaptive learning platforms, such as Eneza Education in Kenya, have reached

millions of learners in remote areas via simple mobile phones, offering personalized lessons that reduce dependence on physical proximity to schools (Oberdieck, 2021). Similarly, AI-powered early warning systems are being piloted in South Africa to identify at-risk students based on attendance and performance data, enabling timely interventions even when students face irregular school access due to distance (Embarak & Hawarna, 2024). These innovations illustrate how AI has the potential to reframe educational access: not merely as a matter of infrastructure and transport, but as a question of intelligent, equitable design (Ahmed, 2024).

Yet the promise of AI in Africa cannot be detached from the realities of the continent's digital divide (Kitsara, 2022). Internet penetration across Africa remains at approximately 36%, compared to a global average of 66%, and disparities in bandwidth, device ownership, and digital literacy risk reproducing the very inequalities AI is meant to solve (Anicet Kiemde & Dooguy Kora, 2020). While AI can mitigate the disadvantages of distance, poorly designed or narrowly implemented systems may reinforce exclusion by

privileging urban, affluent learners with better digital access (Li, 2023). Furthermore, questions of cultural relevance and decolonization in education demand that AI applications be adapted to local languages, pedagogical traditions, and community needs, rather than imported wholesale from global EdTech models (Nemorin, 2024).

This perspective article explores the relationship of geographical distance, educational equity, and AI in Africa. It argues that distance should not be understood only in physical terms but also in digital and cultural dimensions that shape learning access. By situating AI within Africa's diverse educational landscapes, the discussion highlights both its potential to humanize pedagogy and its risks of deepening inequity if deployed without sensitivity to local contexts. Through a synthesis of emerging African case studies, quantitative data, and theoretical insights, the article calls for policy frameworks and research agendas that critically evaluate AI's role in overcoming distance-related barriers and ensure its contributions align with the continent's broader goals of inclusive, equitable, and decolonized education.

## Theoretical framework

Understanding the impact of distance on student academic performance in Africa requires a theoretical foundation that integrates geography, technology, and equity. In contexts where long commutes and infrastructural deficits continue to disadvantage learners, AI emerges as both a potential equalizer and a site of risk. Three interconnected theoretical lenses—educational access and opportunity cost, digital equity and the digital divide, and humanizing pedagogy within the Ubuntu tradition provide a framework for analysing how AI can transform distance-related challenges into opportunities for inclusion.

## Educational Access and Opportunity Cost in African Schooling

Access to education in Africa has historically been shaped by spatial inequalities. Rural learners in countries such as Tanzania, Ethiopia, and Nigeria often face commutes of over an hour each way, with significant opportunity costs in terms of time for rest, study, and household responsibilities. Opportunity cost theory, traditionally applied to economic trade-offs, illuminates the stark choices faced by African families: long travel distances may force children to forego extracurricular learning, contribute to family labour, or

even drop out entirely. AI reframes this trade-off by offering adaptive learning resources through mobile devices, enabling students to reclaim learning time otherwise lost to distance. For instance, mobile-based AI tutoring platforms in East Africa allow learners to study after returning from farms or long journeys, converting distance into flexible digital opportunity.

### **Digital Equity and the African Digital Divide**

While AI holds promise in extending access, its effectiveness is constrained by the continent's digital divide. Theories of digital equity emphasize that access is multidimensional, involving not only devices and connectivity but also digital literacy, affordability, and cultural relevance. Across Africa, disparities in broadband access and device ownership mean that AI-enhanced learning can deepen inequities if not accompanied by inclusive infrastructure development. The framework of digital justice—which links technology use to broader issues of fairness and equity—is especially salient in Africa. Without careful policy design, AI adoption may benefit urban elite schools while leaving rural communities further behind. Conversely, when embedded in inclusive strategies, such as the low-bandwidth AI-supported SMS systems in Kenya, AI can become a tool for democratizing access to quality learning regardless of geography.

### **Humanizing Pedagogy and the Ubuntu Philosophy**

A uniquely African contribution to rethinking AI in education is found in the Ubuntu philosophy, which emphasizes relationality, community, and shared humanity: “I am because we are.” Applied to pedagogy, Ubuntu challenges technocentric models of AI by insisting on culturally relevant, community-centred approaches to learning. Humanizing pedagogy within this framework requires that AI applications not only deliver individualized content but also reflect local languages, cultural narratives, and collaborative modes of knowledge-building. For example, AI-assisted translation tools can support instruction in indigenous African languages, making distance learning more inclusive for learners in multilingual and rural contexts. By embedding Ubuntu into AI adoption, education can resist the risk of depersonalization and instead affirm collective values, ensuring that technology humanizes rather than alienates learning.

### **Toward a Contextualized AI Framework for Africa**

By integrating opportunity cost theory, digital equity, and Ubuntu pedagogy, this framework highlights both the potential and the pitfalls of AI in addressing distance-related challenges in Africa. It underscores that the question is not merely whether AI can overcome geographical barriers, but how it can do so

without reproducing new forms of digital exclusion. A contextualized theoretical foundation recognizes that African learners experience distance in physical, economic, and digital forms simultaneously, and that AI must be harnessed to address all three dimensions. This holistic perspective provides a basis for analysing empirical findings and guiding future policy interventions to ensure that AI contributes meaningfully to educational equity and social justice in Africa.

### **Mechanisms Linking Distance to Academic Performance in Africa through AI**

The impact of distance on student academic performance in Africa can be explained through several interrelated mechanisms encompassing, time allocation, physical and mental fatigue, and access to resources (Okpunukpang et al., 2024). These mechanisms highlight how geographical separation from schools continues to disadvantage African learners. However, AI introduces new opportunities to mitigate these barriers by extending access to personalized, context-sensitive learning (Rasheed et al., 2025).

### **Time Allocation and AI-Supported Flexibility**

Long commutes significantly reduce the time students in Africa can dedicate to study and rest. Rural learners in northern Nigeria, for instance, often spend more than an hour traveling each way to reach school, while urban learners in cities like Lagos or Nairobi lose substantial hours in traffic congestion (Wachira et al., 2022). This lost time translates into fewer hours for homework, reading, and cognitive recovery. AI-enabled learning platforms, particularly those accessible through low-bandwidth mobile applications, provide flexibility for learners to engage in study outside rigid school hours (Alam & Mohanty, 2023). Eneza Education in Kenya and M-Shule in Uganda exemplify how AI-powered adaptive learning modules can deliver personalized exercises via SMS or lightweight apps, allowing learners to convert fragmented time at home or during travel into meaningful study opportunities (Yadav et al., 1 C.E.), (Kyambade et al., 2025). In this way, AI helps offset the opportunity costs imposed by distance (Uddin, 2024).

### **Physical and Mental Fatigue: AI as a Mediator of Cognitive Load**

Physical fatigue from long walks and mental exhaustion from navigating poor transport systems remain defining features of African students' daily lives, especially in rural areas. Fatigue diminishes focus, memory retention, and classroom participation (Chen & Qin, 2024). AI applications can help mediate these effects by optimizing learning processes and

reducing cognitive overload (Twabu, 2025). Intelligent tutoring systems, for example, adjust the pace and complexity of material to match the learner's energy and attention levels, ensuring that students who arrive at school tired are not doubly disadvantaged (*Integrating Intelligent Tutoring Systems for Differentiated Learning in Inclusive Classrooms*, 2024). Furthermore, emerging AI-driven emotional recognition tools, though still in their infancy in Africa, can detect signs of disengagement or fatigue and prompt supportive interventions from teachers (Helwig, 2025). By integrating these adaptive systems, schools can better accommodate the realities of students who endure taxing commutes.

### **Access to Resources: Expanding Reach through AI-Powered Platforms**

Distance often restricts African learners' access to libraries, laboratories, and extracurricular activities (Loots et al., 2023). In rural Malawi, for instance, schools lack adequate textbooks, while in many peri-urban South African contexts, participation in after-school clubs is curtailed by travel constraints (Altinyelken & Hoeksma, 2021). AI-driven digital platforms have begun to bridge these gaps. Virtual libraries powered by natural language processing tools can provide reading materials in local languages, while AI-based simulation software offers science experiments virtually, reducing reliance on physical labs (Murali et al., 2024). Moreover, AI-supported peer learning platforms allow collaboration across distances, enabling students in remote villages to join study groups with peers in urban centres (Tripathi et al., 2025). Such systems reconfigure access to resources from being place-bound to being digitally mediated, provided infrastructure gaps are addressed (Myronchuk et al., 2025).

### **Distance, AI, and Educational Equity in Africa**

Taken together, these mechanisms demonstrate that while distance continues to create significant barriers to academic success in Africa, AI technologies can be harnessed to mitigate its effects (Ebelechukwu Okonkwo et al., 2024). Importantly, these interventions must be designed with inclusivity in mind: without careful attention to affordability, infrastructure, and cultural fit, AI could reinforce rather than resolve inequalities (Sarkar, 2025). A holistic approach requires not just the deployment of AI tools, but their integration into equitable policies and practices that recognize the lived realities of African learners (Pedro et al., 2019).

#### **Geographical Variations and Contextual Factors in Africa**

The impact of distance on student academic performance in Africa is highly differentiated across

urban, peri-urban, and rural settings (Lembani et al., 2020). Each geographical context presents unique challenges shaped by infrastructural, socioeconomic, and cultural factors. AI has the potential to mitigate these disparities, but its effectiveness depends on context-sensitive application and the narrowing of digital divides (Božić, 2023).

### **Urban Africa: Congestion, Inequality, and AI for Adaptive Access**

In African megacities such as Lagos, Cairo, and Nairobi, physical proximity to schools does not necessarily translate into easy access (Mboup, 2019). Students frequently spend long hours navigating traffic congestion, unsafe transport routes, and economic segregation (Mboup, 2019). Urban schools are often better resourced, yet stark inequalities persist between affluent private institutions and underfunded public schools in informal settlements (*Education Policies, Systems, and Progress in Africa and Asia A Comparative Analysis of 12 Cities in Six Countries*, 2020). AI offers pathways to level this disparity through adaptive digital learning platforms. In South Africa, for instance, AI-powered early warning systems are being piloted to identify at-risk learners across diverse school districts, helping teachers intervene despite structural inequalities in school quality (Babu et al., 2024). Similarly, AI-enhanced timetabling and transport optimization systems can potentially reduce travel inefficiencies in dense cities, freeing more time for learning (Vetri Selvi et al., 1 C.E.).

### **Peri-Urban and Township Contexts: Infrastructure Gaps and AI Mediation**

Peri-urban areas and townships, such as those surrounding Johannesburg or Accra, occupy an intermediate position where students may live closer to schools than rural learners but face significant infrastructural deficits, including irregular electricity, limited public transport, and uneven digital connectivity (Andoh, 2024). Many families rely on private vehicles or shared informal transport, which is unaffordable for low-income households. In these contexts, AI-mediated mobile platforms provide flexible alternatives. Low-bandwidth SMS-based AI tutoring systems, like M-Shule in Kenya, enable peri-urban learners to access personalized lessons without needing full-scale broadband or expensive devices (Jordan et al., 2025). These platforms transform learning into a more accessible, home-centred activity, thereby offsetting infrastructural gaps. AI chatbots and voice-based systems in local languages are also emerging, enabling learners with low literacy or limited internet to engage in educational support (Soledad et al., 2025).

### **Rural Africa: Distance, Underfunding, and AI's Expansive Potential**

Rural Africa presents the most severe educational challenges associated with distance. In Ethiopia, Malawi, and northern Nigeria, learners often walk several kilometres to reach schools that are underfunded and face teacher shortages (Härmä, 2021). Roads are frequently poorly maintained, and public transport is absent. These conditions severely limit learning opportunities and contribute to dropout rates, especially among girls, who may also face safety risks during long commutes (Mchunu et al., 2025). AI-enabled distance learning platforms, when coupled with basic mobile infrastructure, offer transformative potential. In Kenya, Eneza Education has reached over six million rural learners through SMS-based AI tutoring, delivering subject-specific content without requiring smartphones or high-speed internet (Otieno et al., 2023). Similarly, pilot projects in Rwanda have explored AI-assisted radio and voice-based platforms to provide instruction in rural communities, ensuring access even where schools are sparsely distributed (Sangwa & Mutabazi, 2025). By leveraging widely accessible technologies such as feature phones, AI can reconfigure the geography of education, extending learning beyond the physical classroom (Quevedo Piratova et al., 2025).

### **Cultural and Infrastructural Factors: AI Between Opportunity and Risk**

Cultural perceptions of education in Africa also shape how distance interacts with academic performance (Banda et al., 2023). In some rural communities, families prioritize agricultural or domestic labour over formal schooling, making long commutes an additional deterrent. Here, AI-enabled flexible learning systems provide an opportunity for students to study during non-school hours, balancing community responsibilities with learning (Singh et al., 1 C.E.). At the same time, infrastructure remains a critical constraint. Without affordable electricity, broadband connectivity, and reliable devices, AI risks reinforcing urban privilege while rural learners fall further behind (Sharma et al., 2024). Bridging this gap requires investments in infrastructure alongside AI deployment. Equally important is ensuring cultural relevance: AI systems must support African languages, local curricula, and context-specific pedagogies. Otherwise, AI risks importing homogenized learning models that alienate rather than empower African learners (Murungu, 2023).

#### **Future Directions for Research in Africa**

A deeper understanding of the relationship between distance and student academic performance in Africa requires moving beyond correlational insights toward

research that critically engages with AI as both a tool and a context-dependent intervention (Mfikoyi et al., 2025). The continent's unique educational geography, marked by rural-urban disparities, infrastructural deficits, and cultural diversity, offers an urgent yet fertile ground for reimagining how AI can transform access and equity in education (Adewale et al., 2024). Several future directions are particularly salient.

### **Longitudinal and Empirical Studies on AI in African Education**

Most evidence on AI in education remains short-term and pilot-focused, leaving critical gaps in understanding its sustained impact on African learners facing distance-related barriers (Niane, 2024). Longitudinal research is needed to track how AI interventions such as SMS-based tutoring, predictive analytics for at-risk students, and AI-assisted radio programs affect learning trajectories over years rather than months (Hamid, 2024). For example, following rural learners in Ethiopia or Malawi who engage with AI-enabled platforms could reveal whether these tools offset the cumulative disadvantages of distance in the long run (Talema, n.d.). Such studies would also clarify whether AI narrows or inadvertently widens gaps between rural and urban learners.

### **Localized and Multilingual AI Design**

AI tools must be adapted to Africa's cultural and linguistic diversity. With over 2,000 languages spoken across the continent, AI systems designed exclusively for English or French instruction risk excluding vast numbers of learners (Gwagwa et al., 2020). Future research should therefore explore the development and evaluation of AI platforms that support indigenous African languages and localized curricula (Senekal & Brokensha, 2023). Natural language processing (NLP) tailored to African dialects is an emerging field, but its integration into educational platforms remains limited. Investigating how such tools can humanize distance learning by making it culturally and linguistically inclusive is an urgent priority.

### **Cross-Disciplinary Collaboration: AI, Education, and African Realities**

Addressing the complex intersections of distance, equity, and AI requires collaboration between educators, computer scientists, urban planners, and sociologists (Mac Fadden et al., 2024). For instance, urban planners and AI researchers can jointly use Geographic Information Systems (GIS) and machine learning to map "education deserts" in African cities, informing where AI-enabled digital hubs should be established (Macharia et al., 2023). Sociologists and educational psychologists can explore how AI-

mediated learning interacts with cultural values such as Ubuntu, which emphasizes community and collective well-being, ensuring that AI enhances rather than erodes social cohesion in African classrooms (Suliman et al., 2024).

### **Policy and Infrastructure: AI for Equity, Not Exclusion**

AI in African education cannot succeed in isolation from infrastructural and policy reform (Kolog et al., 2022). Reliable electricity, affordable mobile internet, and device accessibility remain prerequisites for any AI intervention. Future research should therefore examine not just AI tools, but also the policy frameworks that determine their equitable deployment. For example, studies could analyse how national broadband policies in Kenya, Nigeria, or South Africa intersect with AI adoption in schools, and whether they reduce or reinforce inequalities in access (Adegoke et al., 2025). Equally, research into financing models, including public-private partnerships, community-based digital hubs, or open-source AI platforms can provide evidence-based pathways for sustainable AI integration in African education (Olusegun Aderibigbe et al., 2023).

### **Ethics, Equity, and the Risk of Digital Colonialism**

Finally, critical research must interrogate the ethical dimensions of AI in African education (Gbadebo, 2024). Without careful design, AI platforms imported from global EdTech companies risk reproducing “digital colonialism,” where African learners are subjected to pedagogical models detached from their cultural realities (Salami, 2024). Future studies should therefore foreground equity, decolonization, and inclusivity in evaluating AI adoption. This includes examining how African-led AI innovation can resist dependency on foreign platforms and instead build context-sensitive systems that reflect the continent’s aspirations for self-determined educational development (Arakpogun et al., 2021).

### **Conclusion**

The relationship between distance and academic performance in Africa underscores the profound impact of geography and infrastructure on educational opportunity. For decades, African learners, particularly those in rural and peri-urban areas have shouldered the burdens of long commutes, resource scarcity, and fatigue, all of which restrict academic engagement and widen equity gaps. This perspective has argued that AI offers a unique opportunity to transform these distance-related disadvantages into pathways for inclusion. AI-powered platforms such as adaptive tutoring systems, predictive analytics, and low-bandwidth mobile learning applications already demonstrate how

technology can reconfigure access by reaching students beyond the physical classroom. In Kenya and Uganda, SMS-based AI systems have allowed learners in remote communities to engage with curricula despite infrastructural limitations. In South Africa, AI-enhanced early warning systems are being deployed to identify at-risk learners irrespective of geographical location. These cases illustrate how AI can humanize access to education by reducing dependence on proximity and enabling learning opportunities that are flexible, personalized, and scalable.

Yet the promise of AI in Africa is inseparable from the continent’s structural realities. Without inclusive infrastructure policies, involving reliable electricity, affordable connectivity, and equitable device distribution, AI risks reinforcing existing inequalities, privileging urban elites while leaving rural learners further behind. Equally, without attention to cultural relevance and linguistic diversity, AI could impose external pedagogical models that alienate African learners rather than empowering them. This raises urgent questions about digital equity, decolonization, and the ethics of AI in education. For Africa, the challenge is therefore twofold: to harness AI as a powerful tool for bridging educational distance, and to ensure its deployment aligns with principles of social justice, Ubuntu, and cultural sustainability. Achieving this balance requires coordinated efforts among policymakers, educators, technologists, and communities to design AI systems that reflect African contexts and values. Future research must prioritize Africa-led innovations that address the continent’s unique challenges, while contributing critical insights to global debates on equity and AI in education. Ultimately, overcoming distance in African education is not solely a logistical or technological issue but a matter of justice and inclusion. AI can play a decisive role in creating an educational landscape where no learner’s potential is limited by where they live. By embedding AI within strategies that foreground equity, cultural relevance, and human dignity, Africa can chart a path toward an inclusive educational future—one that not only bridges the gap of distance but also redefines the meaning of access and opportunity in the age of AI.

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## Blockchain Technology and Business Performance of selected Manufacturing Firms in Delta State, Nigeria.

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### **Abstract**

*This study examined the effect of blockchain technology on the business performance of selected manufacturing firms in Delta State, Nigeria. The specific objectives were to evaluate the effect of blockchain transparency, traceability, security, and data integrity on business performance. A total of 150 questionnaires were distributed, out of which 140 were correctly completed and analyzed using descriptive statistics and multiple regression analysis with the aid of SPSS. Qualitative data were also obtained through interviews with management staff to provide deeper insights into blockchain adoption practices. The findings revealed that blockchain transparency, traceability, security, and data integrity each exert a positive and significant influence on business performance. Among these variables, blockchain security had the strongest effect, followed by data integrity, transparency, and traceability. The study further showed that blockchain implementation enhances operational efficiency, strengthens supply chain visibility, safeguards data, and improves organizational trust and accountability. The study concludes that blockchain technology significantly improves the business performance of manufacturing firms by promoting secure, transparent, and efficient operations. It recommends that firms should invest in blockchain infrastructure, build employee capacity, and integrate blockchain systems into supply chain operations while government and regulatory bodies should develop clear policies to encourage widespread adoption. The research contributes to knowledge by providing empirical evidence on the role of blockchain dimensions—transparency, traceability, security, and data integrity—in enhancing the performance of manufacturing firms within a developing economy context. The study also offers practical insights for managers and policymakers on leveraging blockchain for industrial competitiveness and sustainability.*

**Keywords:** Blockchain Technology, Business Performance, Transparency, Traceability, Security, Data Integrity, Manufacturing Firms, Delta State, Nigeria.

### **Introduction**

Blockchain technology has emerged as a transformative force across various industries, offering solutions that enhance transparency, traceability, security, and data integrity. In the manufacturing sector, these attributes are pivotal in optimizing operations and improving business performance. This study delves into the impact of blockchain technology, focusing on its facets of transparency, traceability, security, and data integrity, on the business performance of selected manufacturing firms in Delta State, Nigeria. The manufacturing industry is a cornerstone of economic development, contributing significantly to employment

and GDP. However, it faces challenges such as supply chain inefficiencies, counterfeit products, and data breaches, which can impede performance (Azzi, et al 2019). Blockchain technology, with its decentralized and immutable ledger system, offers potential solutions to these issues. By recording transactions across a distributed network, blockchain ensures that data is transparent, traceable, and secure, thereby enhancing operational efficiency and trust among stakeholders (Casino, et al 2019).

Transparency in manufacturing processes is crucial for building trust with consumers and partners. Blockchain's decentralized ledger records all

transactions in a manner that is accessible and verifiable by all authorized participants (Dai & Vasarhelyi, 2017). This level of openness can reduce information asymmetry and foster trust among supply chain partners. For instance, a study highlighted that by using a distributed ledger system, all transactions are recorded and can be accessed by anyone on the network, helping to reduce corruption, fraud, and other illegal activities (Dobrovnik, et al, 2018).

Traceability is another critical aspect where blockchain can make a significant impact. In complex supply chains, tracking the origin and movement of products can be challenging, leading to issues like counterfeiting and quality control problems (Francisco & Swanson, 2018). Blockchain provides a tamper-proof record of a product's journey from its origin to the consumer, thereby enhancing traceability. This capability is particularly beneficial in industries where product authenticity and quality are paramount. For example, blockchain allows for real-time tracking of goods, ensuring transparency and accountability at each stage of the supply chain (Hackius & Petersen, 2017).

Security in data management is a pressing concern for manufacturing firms, especially with the increasing digitization of operations. Blockchain's immutable ledger ensures that once data is recorded, it cannot be altered or deleted without consensus from the network, thereby safeguarding data integrity (Kshetri, 2018). This feature protects sensitive information from unauthorized access and tampering, which is crucial for maintaining the confidentiality and integrity of manufacturing processes. Integrating AI and blockchain into quality management systems transforms how organizations ensure data integrity and automate processes (Kouhizadeh, et al, 2021).

Data integrity is fundamental to decision-making and operational efficiency in manufacturing. Blockchain ensures that data remains accurate, consistent, and reliable throughout its lifecycle. This reliability enables firms to make informed decisions, optimize processes, and maintain compliance with industry standards. A study emphasized that blockchain technology has the potential to improve the efficiency of numerous areas of the financial industry, which can be extrapolated to manufacturing sectors where data integrity is critical (Li, et al, 2021). The adoption of blockchain technology in manufacturing is not without challenges. Issues such as the need for substantial investment in infrastructure, the requirement for technical expertise, and concerns about data privacy and regulatory compliance can hinder implementation. However, the potential benefits, including enhanced transparency, improved traceability, strengthened security, and assured data integrity, make a compelling case for its integration into manufacturing processes.

In the context of Delta State, Nigeria, manufacturing firms operate in a dynamic environment with unique challenges. The integration of blockchain technology could address specific issues such as supply chain inefficiencies, product counterfeiting, and data management challenges. By enhancing transparency and traceability, firms can build trust with consumers and partners, leading to improved market competitiveness. Strengthened security and data integrity can protect against data breaches and ensure compliance with industry regulations, thereby enhancing overall business performance. Empirical studies have begun to explore the impact of blockchain technology on manufacturing firms in Nigeria. For instance, a study of Chukwu, et al (2024), investigated materials management and the adoption of blockchain technology on supply chain efficiency in Nigerian Breweries Plc Ama, Enugu. The findings suggest that the application of blockchain technology improves supply chain efficiency, which can be a driver of profitability in manufacturing firms.

Furthermore, blockchain's role in enhancing supply chain transparency and traceability has been recognized as a key factor in reducing administrative costs and improving operational efficiency. By providing a verifiable record of a product's origin, blockchain helps prevent the circulation of counterfeit goods and ensures that all participants in the supply chain have access to the same information, thereby reducing discrepancies and disputes (Manupati, et al, 2022). The potential of blockchain technology to revolutionize manufacturing processes extends beyond supply chain management. It can also play a significant role in areas such as quality control, contract management, and data sharing (Mao, et al, 2018). For example, in quality control, blockchain can establish tamper-proof records, boosting consumer confidence in the products. In contract management, smart contracts can automate execution, enhancing efficiency and reducing the need for intermediaries. Blockchain also fosters secure collaboration in manufacturing, which is crucial for system stability and safety (Nandi & Dey, 2021).

Despite the promising benefits, the adoption of blockchain technology in manufacturing firms in Delta State, Nigeria, remains in its nascent stages. Factors such as limited awareness, lack of technical expertise, and infrastructural challenges impede widespread implementation. However, as global trends move towards increased digitization and the demand for transparency and accountability in business operations grows, the impetus for adopting blockchain technology becomes stronger. Thus, blockchain technology holds significant potential to enhance the business performance of manufacturing firms by improving transparency, traceability, security, and data integrity. While challenges to adoption exist, the benefits offer a

compelling case for integration into manufacturing processes. As firms in Delta State, Nigeria, navigate the complexities of the modern manufacturing landscape, embracing blockchain technology could serve as a catalyst for improved operational efficiency and competitiveness.

### The Problem

The manufacturing sector in Nigeria is pivotal to the nation's economic development but faces significant challenges, including supply chain inefficiencies, counterfeit products, and data breaches, which hinder operational performance and profitability (Queiroz & Wamba, 2020). Blockchain technology, with its decentralized and immutable ledger system, offers potential solutions by enhancing transparency, traceability, security, and data integrity (Tönnissen & Teuteberg, 2020). However, despite its transformative potential, blockchain adoption in Nigeria's manufacturing industry is still in its early stages, and empirical studies examining its impact remain limited (Hastig & Sodhi, 2020). While blockchain's potential benefits are widely discussed, there is a scarcity of empirical studies focusing on its application within Nigeria's manufacturing sector. Existing research primarily addresses theoretical aspects, leaving a gap in practical, data-driven insights (Durach et al., 2020). Nigeria presents unique challenges such as infrastructure deficits, regulatory hurdles, and market dynamics that may affect blockchain implementation differently compared to other regions. Current literature does not adequately address these context-specific factors (Queiroz & Wamba, 2020). Although blockchain is touted to improve supply chain efficiency, there is limited evidence demonstrating how it influences key performance indicators within Nigerian manufacturing firms. Understanding this impact is crucial for informed decision-making (Tönnissen & Teuteberg, 2020). Factors hindering the adoption of blockchain technology in Nigeria's manufacturing sector, such as high implementation costs, lack of technical expertise, and resistance to change, are not thoroughly explored in recent studies (Hastig & Sodhi, 2020). Addressing these gaps will provide valuable insights into the practical implications of blockchain technology in enhancing the performance and competitiveness of manufacturing firms in Nigeria. This study aims to fill this gap by investigating the effects of blockchain technology proxied with Blockchain Transparency (BTC), Blockchain Traceability (BTB), Blockchain Security (BS) and Blockchain Data Integrity (BDI) on business performance (BP) of selected manufacturing firms in Delta State, Nigeria.

### Research Questions

How does blockchain transparency affect the business performance of selected manufacturing firms in Delta State?

- What is the effect of blockchain traceability on business performance of selected manufacturing firms in Delta State?
- To what extent does blockchain security contribute to business performance of selected manufacturing firms in Delta State?
- How does blockchain-enhanced data integrity influence business performance of selected manufacturing firms in Delta State?

### Objectives of the Study

The main objective of this study is to examine the effect of blockchain technology on the business performance of selected manufacturing firms in Delta State, Nigeria. The specific objectives are:

- to evaluate the effect of blockchain transparency on business performance of selected manufacturing firms in Delta State.
- to determine the influence of blockchain traceability on business performance of selected manufacturing firms in Delta State.
- to assess the effect of blockchain security on business performance of selected manufacturing firms in Delta State.
- to investigate how blockchain-enhanced data integrity affects business performance of selected manufacturing firms in Delta State.

### Research Hypotheses

**H<sub>01</sub>:** Blockchain transparency has no significant effect on business performance of selected manufacturing firms in Delta State.

**H<sub>02</sub>:** Blockchain traceability does not significantly effect business performance of selected manufacturing firms in Delta State.

**H<sub>03</sub>:** Blockchain security has no significant influence on business performance of selected manufacturing firms in Delta State.

**H<sub>04</sub>:** Blockchain-enhanced data integrity does not significantly affect business performance of selected manufacturing firms in Delta State.

### Review of Related Literature

#### Conceptual Review

##### *Blockchain Technology*

Blockchain technology is a decentralized and distributed ledger system that allows secure and transparent recording of transactions across multiple nodes in a network. Introduced in 2008 as the foundation of Bitcoin (Nakamoto, 2008), it has evolved to become a tool with transformative potential in

various sectors, including finance, healthcare, logistics, and manufacturing. The primary characteristic of blockchain is its ability to ensure data immutability, which means once data is recorded, it cannot be altered without consensus from the network (Zohar et al., 2021). This feature is particularly advantageous in sectors where transparency and security are paramount. Recent studies have underscored blockchain's capacity to streamline processes and reduce operational costs. For example, according to a report by Tapscott and Tapscott (2020), blockchain's decentralized nature enhances trust between parties, making it a powerful tool in industries that involve complex supply chains and numerous stakeholders. Additionally, blockchain's integration with technologies like the Internet of Things (IoT) and Artificial Intelligence (AI) has further amplified its potential in optimizing manufacturing and logistics operations (Garg & Yadav, 2021).

#### ***Blockchain Transparency (BTC)***

Blockchain transparency refers to the openness and accessibility of data stored within the blockchain system. It allows all authorized users to view and verify transaction records, promoting accountability and reducing opportunities for fraud. In the context of manufacturing, transparency is essential for enhancing operational visibility and fostering trust between business partners (Seitz et al., 2021). A study by Chen et al. (2021) demonstrated that blockchain transparency significantly reduced inefficiencies in the supply chain by enabling real-time monitoring of product movement and transaction status. Transparency through blockchain ensures that all parties involved in the manufacturing process—from suppliers to consumers—have access to the same verifiable data, minimizing the potential for conflicts or discrepancies. The application of blockchain transparency in manufacturing can lead to better decision-making, as stakeholders can make informed choices based on the immutable and transparent nature of the data.

#### ***Blockchain Traceability (BTB)***

Traceability refers to the ability to track the history and movement of a product throughout its entire lifecycle, from raw material sourcing to final consumption. In manufacturing, traceability is critical for maintaining quality control, preventing counterfeit goods, and ensuring compliance with regulatory standards (Li et al., 2021). Blockchain enhances traceability by creating a tamper-proof record of every transaction or change in the supply chain, ensuring that product origins and movements are well-documented. According to Wang et al. (2022), the traceability feature of blockchain technology provides manufacturers with a clear and auditable history of a product's journey, significantly reducing the occurrence of counterfeit goods and

enhancing the credibility of products. This feature also allows for quick identification and resolution of quality issues, making it easier to recall defective products, if necessary. In Nigeria, where issues like counterfeit products in manufacturing are rampant, blockchain traceability presents an effective solution for ensuring product authenticity and safety (Adeyemo et al., 2021).

#### ***Blockchain Security (BS)***

Security is one of the fundamental attributes of blockchain technology. Blockchain uses advanced cryptographic techniques to ensure the integrity and confidentiality of data. Unlike traditional databases, where data can be altered or deleted by authorized parties, blockchain's immutability feature prevents unauthorized changes once data is recorded, making it highly secure (Crosby et al., 2020). In the manufacturing sector, security concerns related to data breaches, cyberattacks, and unauthorized access to sensitive information are prevalent (Shetty & Singh, 2021). Blockchain's security features are vital in mitigating these risks by ensuring that data is securely stored and accessible only by authorized users. This aspect of blockchain can also protect intellectual property, trade secrets, and sensitive customer information, which are valuable assets in manufacturing firms (Chang et al., 2021). A study by Alzahrani et al. (2020) revealed that the implementation of blockchain in supply chain management enhanced the security of transactions, particularly in industries dealing with sensitive or high-value products, such as pharmaceuticals and electronics. In Nigeria, where cybercrime poses a significant challenge to businesses, the adoption of blockchain security can bolster trust and protect critical business assets.

#### ***Blockchain Data Integrity (BDI)***

Data integrity is the assurance that data remains accurate, consistent, and trustworthy over its lifecycle. Blockchain ensures data integrity through its immutable ledger, where once data is recorded, it cannot be tampered with without altering every subsequent block, which would require the consensus of the network (Böhme et al., 2020). This capability is particularly valuable in manufacturing, where accurate data is essential for maintaining quality, ensuring compliance, and making informed decisions. Research by Park and Kim (2021) highlighted that blockchain enhances data integrity by eliminating errors associated with manual data entry and mitigating risks related to data manipulation. In manufacturing environments, where data is constantly generated across various stages of production, blockchain technology ensures that information related to inventory, production schedules, and supply chain status remains reliable.



This also aids in maintaining compliance with industry regulations, such as product safety standards.

### ***Business Performance (BP)***

Business performance in the manufacturing sector is a measure of a firm's operational efficiency, profitability, and ability to meet market demands. Blockchain technology can significantly impact business performance by optimizing processes, enhancing transparency, and improving supply chain management. According to a study by Sharma et al. (2021), the adoption of blockchain led to reduced operational costs, improved product quality, and greater customer satisfaction. In the context of Nigeria's manufacturing sector, where inefficiencies and fraud often hinder business performance, blockchain presents a solution to optimize operations. Adeyemo et al. (2021) noted that blockchain integration improved decision-making by providing reliable and real-time data, which is crucial for manufacturing firms operating in dynamic and competitive markets. Furthermore, the increased transparency and traceability enabled by blockchain enhance relationships with suppliers and customers, improving trust and market competitiveness.

### ***Blockchain Technology on Business Performance in Manufacturing in Nigeria***

In Nigeria, the manufacturing industry faces numerous challenges; including supply chain inefficiencies, counterfeit goods, and security risks. The adoption of blockchain technology has the potential to address these issues and enhance business performance in the sector. A study by Okoli and Nwachukwu (2021) suggested that blockchain technology could enhance supply chain transparency, reduce operational costs, and improve product quality in Nigerian manufacturing firms. Blockchain's ability to provide real-time, verifiable data on product movements and transaction histories can foster trust among stakeholders and lead to more efficient operations (Afolabi & Nwachukwu, 2021). In addition, blockchain's ability to prevent fraud and ensure data integrity is particularly important in Nigeria, where counterfeiting and data breaches are major concerns (Alabi et al., 2021). As such, blockchain adoption can help Nigerian manufacturers improve operational efficiency, enhance product quality, and strengthen relationships with customers and suppliers, ultimately improving their business performance.

### ***Theoretical Review***

#### ***Distributed Ledger Theory (DLT)***

Distributed Ledger Theory (DLT) is a foundational concept that describes a decentralized database that is maintained and shared across multiple nodes within a

network. The origin of DLT can be traced back to the early developments of cryptographic systems, particularly the introduction of blockchain in the context of Bitcoin by Satoshi Nakamoto in 2008. Nakamoto's work demonstrated that a decentralized ledger could be used to ensure secure transactions without the need for intermediaries like banks (Nakamoto, 2008). This theory has evolved from a pure cryptocurrency application into a broader technology used in various industries to ensure data integrity, transparency, and security.

DLT supports blockchain transparency (BTC) by enabling an immutable record of transactions that are visible and accessible to all participants in the network. Through this feature, blockchain ensures that manufacturing firms' operations are more transparent, providing real-time information to all stakeholders. For instance, in Delta State, Nigeria, the use of blockchain-based DLT can ensure that every transaction, such as raw material procurement or product distribution, is recorded in an open ledger. This reduces the opportunity for fraudulent activities and enhances trust among manufacturers, suppliers, and customers (Seitz et al., 2021). Furthermore, DLT supports traceability (BTB) by providing an auditable trail of all product transactions, allowing firms to track the origin of raw materials, product movement, and quality at every stage. This visibility contributes to greater operational efficiency and better business performance (Wang et al., 2022). In relation to business performance (BP), DLT's ability to create a secure, transparent, and immutable ledger allows manufacturing firms in Delta State to improve operational processes, reduce supply chain inefficiencies, and increase stakeholder confidence. By enhancing transparency and traceability, DLT facilitates smoother transactions and decision-making, which ultimately drives better business outcomes.

#### ***Game Theory (Incentive Mechanisms)***

Game Theory, introduced by mathematician John von Neumann and economist Oskar Morgenstern in 1944, is a theoretical framework used to understand the strategic interactions between rational decision-makers. The application of Game Theory to blockchain technology is particularly relevant in the context of incentive mechanisms. These mechanisms ensure that participants in a blockchain network act in ways that maintain the integrity of the system. In blockchain, miners or validators are incentivized through mechanisms such as proof-of-work (PoW) or proof-of-stake (PoS) to validate and secure transactions, ensuring that the network remains decentralized and functional.

Incentive mechanisms play a critical role in Blockchain Security (BS). By applying Game Theory principles, blockchain systems incentivize honest behavior and

disincentivize malicious activities such as fraud or double-spending. In manufacturing firms, this aspect of blockchain can help safeguard sensitive data and transactions, ensuring that security breaches are minimized and that the integrity of supply chain data is maintained (Alzahrani et al., 2020). Moreover, the incentive structure of blockchain encourages participants to follow the rules of the network, thus ensuring the security and privacy of sensitive business data, which is critical for manufacturing firms dealing with proprietary information. Game Theory's influence extends to Blockchain Data Integrity (BDI), as the incentives embedded within blockchain protocols ensure that participants are motivated to maintain accurate and reliable data. When applied to the manufacturing sector in Delta State, Nigeria, this feature of blockchain allows for accurate record-keeping, ensuring that manufacturers make informed decisions based on trustworthy data. For instance, through the use of smart contracts, blockchain can automate various manufacturing processes, reducing human error and improving data integrity in the supply chain.

Thus, Game Theory and its incentive mechanisms help to improve business performance (BP) by reducing costs related to fraud, improving security, and ensuring that the data used for decision-making is accurate and reliable. By promoting secure and efficient systems for managing transactions and data, blockchain technology enhances the overall performance of manufacturing firms in Delta State, Nigeria.

### ***Cryptographic Theory***

Cryptographic Theory has been pivotal in the development of blockchain technology. Cryptography, as a field of study, deals with securing communication and information through the use of mathematical algorithms. The application of cryptographic techniques to blockchain technology ensures that data is encrypted and secured, preventing unauthorized access, tampering, or fraud. The concept of using cryptography to ensure the security and privacy of transactions was popularized by the introduction of Bitcoin (Nakamoto, 2008), which relied on cryptographic hash functions and public-private key pairs for secure transactions.

Cryptography underpins Blockchain Security (BS) by providing the foundation for secure transactions and safeguarding sensitive data in manufacturing operations. Through the use of hashing, digital signatures, and encryption, blockchain technology ensures that data cannot be altered or tampered with, thereby preserving the security and confidentiality of business operations. For example, in the context of manufacturing in Delta State, cryptographic techniques in blockchain can protect intellectual property,

contracts, and sensitive operational data from unauthorized access or cyberattacks (Shetty & Singh, 2021).

Cryptographic theory also contributes to Blockchain Transparency (BTC) by ensuring that all transactions are verifiable and traceable. While the data is transparent to authorized users, cryptographic encryption ensures that the participants' identities and sensitive information remain protected. This balance between transparency and privacy allows manufacturing firms to operate in an open yet secure environment, where stakeholders can access relevant data without compromising business confidentiality (Chang et al., 2021).

Furthermore, cryptographic techniques are critical to Blockchain Data Integrity (BDI), as they guarantee the authenticity and consistency of the data stored on the blockchain. Since each block is linked through cryptographic hashes, any alteration to the data would require the modification of all subsequent blocks, making tampering virtually impossible. For manufacturing firms in Delta State, Nigeria, this ensures that product quality and supply chain data remain accurate and reliable, which is essential for decision-making and regulatory compliance.

In relation to business performance (BP), the application of cryptography in blockchain technology enhances operational efficiency, reduces security risks, and fosters trust among stakeholders, all of which contribute to improved business outcomes. As manufacturing firms in Delta State face challenges such as data breaches and counterfeit products, cryptographic security offers a robust solution to mitigate these risks and improve overall performance.

### ***Empirical Review***

Wang, Zhao, and Jiang (2022) explored the potential of blockchain to improve transparency and traceability in supply chains, focusing on the manufacturing sector. The study employed a survey methodology, collecting data from 150 firms in China. The data were analyzed using structural equation modeling (SEM) to assess the effect of blockchain's transparency and traceability on supply chain performance. Findings revealed that blockchain's transparency significantly improved supply chain visibility, while traceability reduced the occurrence of counterfeit products. The study concluded that blockchain enhances business performance by increasing operational transparency and reducing risks associated with counterfeit goods. The authors recommended that firms integrate blockchain to optimize supply chain operations and improve performance.

Chang, Liu, and Yang (2021) examined the role of blockchain technology in enhancing operational performance, focusing on transparency, traceability,

and data integrity in the manufacturing sector. The study adopted a mixed-methods approach, combining qualitative interviews with industry experts and quantitative surveys from 150 manufacturing firms in China. Data analysis was conducted using multiple regression to assess the relationship between blockchain technology and business performance. The results revealed that blockchain's security and data integrity features significantly improved manufacturing performance by reducing fraud and ensuring accurate and reliable data. The study concluded that blockchain adoption can enhance the overall operational efficiency of firms, and recommended that manufacturers consider integrating blockchain into their business processes to improve security and traceability.

Li, Guo, and Liu (2021) focused on the impact of blockchain on supply chain efficiency and performance, specifically examining blockchain's transparency (BTC), traceability (BTB), and data integrity (BDI) in the automotive industry. The researchers used a quantitative survey methodology, collecting data from 120 firms in Europe. Structural equation modeling (SEM) was used to analyze the data. The study found that blockchain's transparency and traceability significantly enhanced supply chain performance by providing real-time access to product information and ensuring the authenticity of products. Data integrity also played a crucial role in improving operational efficiency and reducing costs. The authors concluded that blockchain is a powerful tool for improving business performance in the automotive sector and recommended its adoption across manufacturing supply chains.

Shetty and Singh (2021) examined the role of blockchain technology in enhancing the security and data integrity of manufacturing firms. The study employed a survey methodology, collecting data from 100 manufacturing firms in India. Regression analysis was used to analyze the relationship between blockchain features, such as security (BS) and data integrity (BDI), and business performance (BP). The results indicated that blockchain's security features significantly enhanced data protection, reducing the risks of data breaches and improving the trustworthiness of operations. The study concluded that blockchain technology improves business performance by strengthening data security and integrity. The authors recommended that manufacturing firms adopt blockchain to safeguard sensitive data and enhance operational efficiency.

### Literature Gaps

The growing application of blockchain technology in the manufacturing sector has garnered significant attention due to its potential to enhance transparency, traceability, security, and data integrity. Numerous

studies have examined the role of blockchain in improving business performance, particularly in supply chain operations. While empirical studies provide insights into blockchain's impact on manufacturing efficiency, several gaps remain in the existing literature that warrant further investigation. These gaps are particularly evident in findings, variables, methodology, and geographical focus, especially in the context of Nigeria, where blockchain adoption is still at an early stage. This research aims to address these gaps by focusing on the effect of blockchain technology, proxied by blockchain transparency (BTC), traceability (BTB), security (BS), and data integrity (BDI), on the business performance (BP) of selected manufacturing firms in Nigeria.

**Findings Gaps:** Although several studies highlight the positive influence of blockchain's transparency, traceability, and security on supply chain performance and business outcomes (e.g., Alzahrani et al., 2020; Chang et al., 2021; Jain et al., 2021), there remains a lack of consensus on the specific mechanisms through which these blockchain attributes influence business performance. For instance, while Alzahrani et al. (2020) found that transparency and traceability improve operational efficiency, the specific aspects of business performance—such as profitability, customer satisfaction, and market share—were not fully explored in the context of the Nigerian manufacturing sector. Additionally, the role of data integrity in strengthening decision-making and business operations, as discussed by Feng et al. (2021) and Jain et al. (2021), has not been systematically examined in the Nigerian manufacturing context. These gaps highlight the need for more targeted studies that examine the causal relationships between blockchain attributes and various dimensions of business performance.

**Variables Gaps:** While many studies have focused on key blockchain attributes like transparency, traceability, security, and data integrity (e.g., Li et al., 2021; Wang et al., 2022), few studies have analyzed how these variables interact with each other and influence different aspects of business performance. For example, Li et al. (2021) concentrated on traceability and transparency but did not fully integrate the interaction between security and data integrity in their model, which are crucial to understanding blockchain's full impact on business operations. Similarly, Alzahrani et al. (2020) highlighted the impact of transparency and traceability on supply chain efficiency, but they did not explore how these variables, in conjunction with security, influence organizational performance outcomes such as profitability, growth, or sustainability. The integration of these blockchain features into a

comprehensive model remains a critical gap in the literature.

**Methodological Gaps:** The studies reviewed primarily employed quantitative methods, such as structural equation modeling (SEM) and regression analysis, to assess the impact of blockchain technology on business performance (e.g., Chang et al., 2021; Jain et al., 2021; Alzahrani et al., 2020). While these approaches provide valuable insights, they often lack a deeper qualitative understanding of how blockchain is implemented and the challenges firms face in adopting this technology. For example, Shetty and Singh (2021) used regression analysis to demonstrate the impact of security and data integrity on performance, but did not explore the managerial, organizational, or technological challenges encountered by manufacturing firms. Furthermore, the studies generally lacked longitudinal data that could provide insights into the long-term effects of blockchain adoption on performance metrics. More mixed-methods or longitudinal research is needed to explore the implementation challenges, processes, and sustained benefits of blockchain technology in manufacturing firms.

**Geographical Gaps:** Although the studies reviewed provide insights from various global contexts, there is a notable geographical gap, particularly in the African region. Many of the empirical studies are based on data from countries like China, India, and Saudi Arabia (e.g., Chang et al., 2021; Li et al., 2021; Jain et al., 2021), with limited attention paid to sub-Saharan Africa, specifically Nigeria. While Akinyele et al. (2021) examined blockchain in the Nigerian manufacturing context, their study was limited in scope and did not fully explore the regional challenges, such as infrastructure limitations, regulatory frameworks, and market conditions that influence blockchain adoption. The majority of studies, including those from Pakistan and India (Khan et al., 2021; Sundararajan et al., 2021), focus on well-established or emerging markets where blockchain adoption is relatively advanced. The Nigerian manufacturing sector, however, faces unique challenges, such as infrastructural gaps, which may significantly influence the effectiveness of blockchain technology in improving business performance. Therefore, there is a need for more focused studies that investigate how blockchain can be successfully integrated into Nigerian manufacturing firms to improve their performance.

## Tools and Methods

### Research Design

This study adopted a descriptive survey research design. The population of this study consisted of employees from five selected manufacturing firms in Delta State,

Nigeria, who were involved in operations that could be impacted by blockchain technology. These employees included supply chain managers, IT personnel, and senior executives within Nigerian Breweries Plc, West African Plastics Ltd, Delta Steel Company Ltd, Dufil Prima Foods Plc, and Excel Paints Manufacturing Ltd. These individuals were considered ideal as they were in positions to provide insights on how blockchain attributes such as transparency, traceability, security, and data integrity influenced business performance within their respective firms. The total population was estimated to be approximately 150 employees across the five firms, based on internal records. This number was adopted because of the size as permissible in sreserach when the sample is small(xxxx). This study employed a stratified random sampling technique. The stratification was based on job roles within the selected manufacturing firms, including supply chain managers, IT personnel, and senior executives. Primary data were collected using a structured questionnaire. The questionnaire was distributed to respondents in the selected manufacturing firms. It was designed with a Likert-scale format, with respondents asked to rate their agreement with statements related to blockchain transparency, traceability, security, data integrity, and business performance. The Likert scale ranged from “Strongly Disagree” (1) to “Strongly Agree” (5). This method enabled the systematic collection of data that was easy to analyze quantitatively. The research instrument for this study was a structured questionnaire, which was divided into sections. The first section collected demographic information about the respondents, such as their job role and years of experience. The second section focused on the independent variables (blockchain transparency, traceability, security, and data integrity), while the third section addressed business performance, the dependent variable. Each section contained questions designed to capture respondents' perceptions and experiences with blockchain technology in their respective firms. The reliability of the research instrument was tested using Cronbach's alpha coefficient. A pilot study was conducted with a small group of respondents from similar manufacturing firms not included in the main study. The Cronbach's alpha values for each of the variables were calculated as follows:

Blockchain Transparency (BTC):  $\alpha=0.82$

Blockchain Traceability (BTB):  $\alpha=0.79$

Blockchain Security (BS):  $\alpha=0.85$

Blockchain Data Integrity (BDI):  $\alpha=0.88$

Business Performance (BP):  $\alpha=0.81$

These values indicated that the instrument had acceptable internal consistency, with all variables having a Cronbach's alpha value of 0.7 or above. Based on the results of the pilot study, minor revisions were made to the instrument to further enhance its reliability.

The data collected from the questionnaires were analyzed using quantitative techniques. Descriptive statistics, such as frequencies, means, and standard deviations, were used to summarize and describe the characteristics of the data. Multiple regression analysis was employed to examine the relationships between the independent variables (blockchain transparency, traceability, security, and data integrity) and the dependent variable (business performance). This statistical technique was appropriate because it allowed for the assessment of the simultaneous effects of multiple independent variables on a single dependent variable. The regression analysis helped determine the extent to which each of the blockchain attributes affected business performance and identified which variable had the most significant impact. The study was guided by a model ( $BP = \beta_0 + \beta_1 BTC + \beta_2 BTB + \beta_3 BS + \beta_4 DI + \epsilon$ ) reflecting BP = Business Performance (dependent variable), BTC = Blockchain Transparency (Independent variable), BTB = Blockchain Traceability (Independent variable), BS = Blockchain Security

| Variable                | N   | Mean | Std. Deviation | Interpretation |
|-------------------------|-----|------|----------------|----------------|
| Blockchain Transparency | 140 | 4.21 | 0.63           | High           |
| Blockchain Traceability | 140 | 4.08 | 0.71           | High           |
| Blockchain Security     | 140 | 4.35 | 0.58           | Very High      |
| Data Integrity          | 140 | 4.27 | 0.65           | High           |
| Business Performance    | 140 | 4.18 | 0.69           | High           |

The descriptive results suggest that respondents strongly agreed that blockchain technology enhances transparency, traceability, data integrity, and overall operational security, which in turn improves performance indicators such as productivity, quality control, and customer trust.

### Regression Analysis

A multiple regression analysis was conducted to examine the effect of the four blockchain constructs (transparency, traceability, security, and data integrity) on business performance.

#### Coefficients Table:

| Predictor Variable      | Beta ( $\beta$ ) | t-value | Sig. (p) | Interpretation |
|-------------------------|------------------|---------|----------|----------------|
| Blockchain Transparency | 0.254            | 4.672   | 0.000    | Significant    |
| Blockchain Traceability | 0.198            | 3.861   | 0.001    | Significant    |
| Blockchain Security     | 0.301            | 5.497   | 0.000    | Significant    |
| Data Integrity          | 0.276            | 4.208   | 0.000    | Significant    |

### Interpretation of Findings

The regression results reveal that blockchain security ( $\beta = 0.301$ ) exerts the strongest positive effect on business performance, followed by data integrity ( $\beta = 0.276$ ) and transparency ( $\beta = 0.254$ ). Traceability also contributes significantly ( $\beta = 0.198$ ), though slightly lower than the others. This implies that blockchain

(Independent variable), BDI = Blockchain Data Integrity (Independent variable),  $\beta_0$  = Intercept,  $\beta_1$ - $\beta_4$  = Coefficients for each independent variables and  $\epsilon$  = Error term

## Analysis, Results and Discussion

### Data Presentation and Response Rate

Out of the 150 questionnaires administered to selected manufacturing firms in Delta State, 140 were properly completed and returned, representing a 93.3% response rate. This high response rate was considered adequate for robust statistical analysis. The respondents comprised top and middle management staff from production, finance, ICT, and operations departments, ensuring diverse insights on blockchain adoption and business performance.

### Descriptive Statistics

Descriptive analysis using SPSS showed that most firms had integrated blockchain applications mainly in supply chain management, quality assurance, and data recording.

### Model Summary:

$R = 0.872$

$R^2 = 0.761$

Adjusted  $R^2 = 0.749$

$F(4,135) = 107.23, p < 0.001$

This indicates that 76.1% of the variation in business performance is explained by the combined influence of blockchain transparency, traceability, security, and data integrity.

adoption enhances secure transactions, reduces data tampering, improves traceability, and promotes trust-based performance in manufacturing operations.

### Qualitative Insights

Interviews with 10 managers revealed that blockchain technology has improved accountability, streamlined record-keeping, and reduced losses from counterfeit

products. One production manager noted that *“blockchain-based traceability has significantly improved customer confidence and reduced product recalls.”* Another ICT officer emphasized that *“enhanced data integrity has minimized audit discrepancies and increased operational transparency across departments.”*

The qualitative data corroborate the quantitative findings by highlighting that blockchain systems foster reliability, transparency, and inter-departmental efficiency, thereby reinforcing competitive advantage and business sustainability.

### Discussion of Findings

The findings align with earlier empirical studies (e.g., Kamble et al., 2021; Saberi et al., 2019) which established that blockchain transparency and traceability enhance supply chain visibility and operational efficiency. Similarly, the strong positive impact of blockchain security on business performance supports Tijan et al. (2020), who emphasized that blockchain’s immutable nature reduces fraud and ensures data protection.

In the Delta State context, these results suggest that manufacturing firms leveraging blockchain experience improved performance outcomes—particularly in customer trust, process efficiency, and compliance management. However, challenges such as limited technical expertise, infrastructural constraints, and regulatory ambiguity still pose barriers to widespread blockchain adoption.

### Summary

The study revealed that blockchain transparency plays a vital role in improving trust and accountability, which in turn enhances the overall business performance of manufacturing firms. Blockchain traceability was found to strengthen supply chain visibility, thereby reducing operational inefficiencies and improving productivity. Among the blockchain dimensions examined, security had the most significant impact, as it safeguards critical business data and ensures operational reliability. Additionally, data integrity was shown to enhance decision-making accuracy and promote organizational efficiency. Overall, both the quantitative and qualitative analyses confirmed that blockchain adoption exerts a positive and significant effect on the business performance of manufacturing firms in Delta State, highlighting its strategic importance for competitiveness and sustainability.

### Conclusion

This study examined the effect of blockchain technology on the business performance of selected

manufacturing firms in Delta State, Nigeria, using both quantitative and qualitative approaches. The analysis of 140 valid responses revealed that blockchain transparency, traceability, security, and data integrity each exert significant positive influences on business performance.

Specifically, blockchain security emerged as the most influential factor, underscoring the technology’s role in protecting business data, ensuring safe transactions, and fostering trust among partners and customers. Data integrity and transparency were also found to be strong drivers of performance, enabling accurate decision-making and enhancing accountability. Similarly, traceability improved supply chain monitoring, quality control, and customer satisfaction.

The findings affirm that blockchain adoption contributes meaningfully to operational efficiency, product authenticity, and corporate credibility in Nigeria’s manufacturing sector. However, the study also highlights persistent challenges such as limited technical expertise, infrastructural constraints, and regulatory uncertainty, which may hinder full-scale blockchain implementation.

In conclusion, blockchain technology stands as a strategic digital innovation capable of transforming the operational landscape of manufacturing firms in Delta State. When effectively integrated, it enhances performance, competitiveness, and long-term sustainability.

### Recommendations

Based on the findings, the following recommendations are proposed:

The study recommends that manufacturing firms in Delta State should first invest in robust blockchain infrastructure by adopting digital platforms and tools that enhance data management, traceability, and security across operations.

There is a need for capacity building and continuous training to equip employees with the technical knowledge and skills required for effective blockchain implementation and cybersecurity management.

i. That regulatory support and institutional collaboration should be strengthened through clear government policies, industry standards, and partnerships between public and private sectors to promote innovation and ensure compliance with data protection laws.

ii. Lastly, firms should integrate blockchain into supply chain and operational systems while continuously evaluating its performance impact, promoting data integrity, and leveraging complementary technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT) to drive sustained business growth and competitiveness.

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## The Madness of Power: Analyzing Caligula's Reign and Psychology through Maslow's Hierarchy of Needs

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### Abstract

*There were some significant leaders in the history of the countries and regions. They have not been forgotten for centuries. Some of them did great jobs in their presence, for their nations and countries and even humanity. However, some others have been remembered by their bloody and autocratic administration; for example, they tortured their public. Caligula is one example of the second type of leadership. Although he did not achieve any military or political success, he became infamous for his notorious behaviors. These include, not least, the appointment of his horse as a consul, an incestuous relationship with his sister, and even his absurd order for the sun to rise in the middle of the night. This study will dig out Caligula's turbulent life. The reason of his desire of brutality and inhumane treatments trace back to traumas of his childhood. Moreover, this article will apply Maslow's Hierarchy of Needs to Caligula's life sketch.*

**Keywords:** *Caligula, Hierarchy of Needs, Leader, Maslow, Roman Empire, Tyranny.*

### Introduction

Autocracy, when combined with psychological trauma and unmet emotional needs, can lead to devastating consequences for both rulers and their subjects. Caligula, one of Rome's most infamous emperors, serves as a compelling case study for the intersection between power and pathology. While historical records focus on his brutal decisions and eccentric behaviors, this paper adopts a psychological lens, employing Maslow's Hierarchy of Needs to interpret the emperor's descent into tyranny. This paper argues that Caligula's personal history — including loss, alienation, and emotional instability — prevented him from fulfilling his own psychological needs, which in turn manifested in destructive political choices that also denied those same needs to his subjects. Throughout history, leaders have played a crucial role in shaping the psychological and social realities of their societies. While some rulers guided their people toward prosperity and fulfillment, others plunged entire nations into fear and deprivation. Gaius Julius Caesar Augustus Germanicus, commonly known as Caligula, exemplifies the latter. By examining his reign through the lens of Abraham Maslow's Hierarchy of Needs, we can better understand how autocratic rule can suppress or distort the fundamental human needs of both individuals and societies.

### Caligula's Life Experience

Caligula was the third emperor (AD 12-41) of the Roman Empire and the son of Germanicus (World History Encyclopedia). He came from the Julio-Claudian dynasty, to which the first five Roman emperors belonged. The name "Caligula" means "little soldier's sandal." Soldiers gave him this name because Caligula wanted to be a soldier from a young age and dressed like a soldier (Graham, 2025).

Although he himself rejected this nickname, he is still known as Caligula. While Augustus, the first Roman Emperor, was still on the throne, the question "Who will be the heir to the throne?" began to be asked. It was thought that the heir would be Germanicus, the father of Caligula. Augustus, however, chose Tiberius on the condition that he adopt Germanicus.

Germanicus was then sent to the east. While in the East, Tiberius is thought to have poisoned him on November 10, 19 (Graham, 2025). In 27, the young Caligula was sent to live with Tiberius' mother, Livia. Meanwhile, allegations have been made about Caligula that he had an incestuous relationship with his sister, but nothing clear can be said (Aysan, 2024). Caligula was always a favorite of Tiberius. There are many heretical gossips about Caligula, who stayed in Capri from 31 to 37 (Fenmere, 2025). Since Tiberius and Caligula were not very popular, it is normal for such rumors to occur. Caligula ascended the throne with the death of Tiberius in 37. According to one idea, Tiberius was strangled with a pillow so that

Caligula could ascend the throne earlier (Damon, 2012).

Betrays, assassinations, poisonings, and strangulations were commonplace in Rome. Even before Caligula ascended the throne, he participated in the torture of slaves and watched bloody gladiatorial games, even his entertainment was bloody (Holland, 2025).

Caligula's accession initially brought relief and optimism among the Roman people. They were finally freed from Tiberius' oppressive rule. Caligula was the first emperor to be admired by the whole world, from the place where the sun rises to the place where it sets by public (Philo, 41 CE/2021).

This was the beginning of a new era. In his early days, he was generous, although he was of a political nature. He overpaid the Praetorian guard, destroyed Tiberius' treason documents and declared treason prosecutions a thing of the past, recalled exiles, and helped those who suffered from the Imperial tax system. He removed sex offenders from the empire. It is also known to be quite extravagant for things like gladiatorial fights. These actions initially brought him quite a reputation in the eyes of the public.

In addition, he revived free elections for the people. He reopened the Roman Imperial annals, which had been closed during the reign of Tiberius. For these reasons, Caligula was called "The Sun" by the people. While everything was going well, Caligula's psychological problems arose. (Mallan, 2021)

When the heresies which Tiberius had suppressed while he was present were exposed, the people regretted it. It was thought that Caligula, who suffered a serious illness in the year he ascended the throne, would die, but Caligula survived. Historian Howard Hayes Scullard says (1982), "He emerged from his illness a monster of lust and a demonic tyrant. While Caligula was very respectful to the Senate at first, he gradually began to make maverick decisions. His relationship with the Senate is one of the most significant points in Caligula's period. In particular, his dismissal of the consuls in 39 without talking to the senate caused a rift with the senate.

He ordered everyone to shave their heads for fear of baldness, declared his beloved horse consul for fear of being assassinated, another famous scandal is intent to raise his horse, Incitatus, to consular rank (Miles, 2007).

However, it is known that this situation is not real. Incitatus was the favorite horse of Caligula, and he dressed Incitatus in purple, the color which represents royalty.

"The infamous incident where he appointed his beloved horse, Incitatus, as a consul served as both a mockery of senatorial authority and a stark reminder of the emperor's unchecked power. Instead of laughter, this act bred resentment, as senators felt they were being ridiculed rather than respected. "(Hawkinson, 2025, p. 148).

He reportedly ordered the sun to rise at night, wandered the corridors in fear, and had his sleep interrupted by constant suspicions of assassination. Caligula is one of the most paranoid people, history has ever seen. Serious issues or illnesses can occur in the life of a leader. Paranoia is the greatest enemy of a commander.

Caligula, who declared himself a living god (The History Hour, 2018), declared her a goddess when his sister, with whom he was in a relationship, died. He reportedly opened a brothel in his palace and was in the habit of taking the wives of members of the Senate to his own bedroom during social events, even though their husbands could only look after them as they left. He then described his sexual acts with his spouses in the presence of their husbands in a way that everyone could hear. All these heresies gradually increased, and he sold the spouses of high-ranking senators to the highest bidder (Holland, 2025).

These absurd behaviors had begun to anger the senate and assassination plans had begun to be made. Caligula spent excessively, both for his own pleasure and for his wants, and over time he melted the treasure left by Tiberius. He went beyond seeing himself as a god, beheading statues of the gods and making his own busts.

His excesses weakened Rome in every way, and he used the birth of his daughter as an excuse to collect extra money from the people in order to put his own heresies into practice. His harsh and unnecessary rules brought more blood and death to the Empire, and his paranoia led to the death of even those closest to him.

Surviving sources mention several political successes achieved by Caligula. During his reign, Mauretania, which had joined the empire, was restructured into two provinces. Herod Antipas was appointed governor of Judea. Several disturbances between Jews and Greeks in Alexandria and other eastern provinces were suppressed.

During the reign of Caligula, the ports of Rhegium and Sicily were improved. Grain imports from Egypt were increased. Public works were completed, temples were built, and walls repaired. Caligula was also portrayed, albeit reluctantly, as a very persuasive, good orator and generally popular in the eyes of the Roman public.

Despite these actions, Caligula, who had no military successes, wanted to conquer Britain, but his army did not trust him. Soldiers were right because their commander hasn't got an experience in the war field and even one of the respectful Emperor, Gaius Julius Caesar, couldn't conquer Britain completely. Therefore, there weren't any belief for Caligula to earn a power in Britain, and they don't make a mistake at this point.

When the army refused to cross the English Channel, Caligula's wish could not be fulfilled. A soldier must trust his/her commander otherwise even he/she fights

against a villager the result will be defeat. Caligula could not return empty-handed from this expedition, so he ordered the soldiers to collect seashells.

These seashells represented Caligula's victory over the god Neptune (Poseidon). When Roman Empire conquered Greece in 146 BC, they obsessed with Greek religion, culture, science and developed with this conquer.

"Graecia capta ferum victorem cepit (Greece, captured, captured a fierce conqueror.)" (Horace, 14 BC/2002). They adopted all of Greek mythology as their own religion and changed the names of the pantheon. For example, the chief god Zeus named as the larger planet in the solar system Jupiter.

This defeat was the last straw for the Senate, and a conspiracy was urgently planned. Caligula realized this and refused to enter the city. As he hadn't got any military success, his only purpose to conquer Britain was avoiding from death.

If he had returned from the British expedition successfully, he would have only been able to postpone his death a little because the Senate had wanted to get rid of Caligula for a long time and the unsuccessful British expedition had been a very justified reason for them.

His paranoia was clearly a necessity for being face to face with the Senate. In Roman Empire, the emperor's relation with Senate is critic for his future. Caligula was always stayed against Senate, actually he was against everyone during his period.

Caligula, who entered the city when his fear passed, left the arena where the Palatium games were held towards the end of January 41, under the pretext of eating and bathing. He was walking for his last time.

As he walked, a group of army men intercepted him, and Caligula was stabbed multiple times to death. Caligula learned by experience that he is not a god. The other assassin stabbed Caligula's wife, Caesonia, and killed her young daughter, Julia Drusilla, by banging her head against the wall (Josephus, Antiquities of the Jews XIX.1.15).

He was alone in his entire life, nevertheless not in death. Although the Senate wanted to take advantage of this assassination and rebuild the republic, this did not happen, Claudius became the new emperor. Claudius or Tiberius Claudius Caesar Augustus Germanicus did what Gaius Julius Caesar and Gaius Julius Caesar Augustus Germanicus could not do and established Roman rule in Britain (Scramuzza, 1940). Caligula is a mentally unstable leader according to some, addicted to the excess of all kinds of pleasures according to others, and sociopathic according to others.

Above all, his cruelty, arrogance, paranoia, military incompetence, indulgence, and perversion brought about the end of Caligula.

Caligula died consumed by hatred — not only for others but also for himself. The very people who once hailed him as "our sun" ultimately dismissed him as "our regret."

CALIGULA:

"Utinam populus Romanus unam cervicem haberet: "I wish the people of Rome had only one neck so I could separate it from the body in one stroke" (Holland, 2025).

### **Maslow's Hierarchy of Needs as a Framework to Understand Caligula's Rule**

Abraham Maslow's hierarchy of needs, a psychological theory that classifies human motivation into five levels — physiological, safety, love/belonging, esteem, and self-actualization — offers a compelling framework to evaluate the societal and individual impact of imperial leadership. As Maslow himself noted, "These basic needs are physiological, safety, love, esteem, and self-actualization. They may be considered as needs arranged in a hierarchy of prepotency" (Maslow, 1943, p. 372).

When applied to the reign of Caligula, this framework reveals the systematic collapse of both public welfare and personal stability under autocratic excess. Caligula's life and policies, when viewed through Maslow's lens, demonstrate how unchecked power can distort not only the fulfillment of societal needs but also the ruler's own psychological development.

Caligula presents a psychological case, and if we aim to understand him comprehensively, Maslow's Hierarchy of Needs provides the most suitable framework. This analysis will examine Caligula's life through the five levels of the pyramid. Each part will describe characteristics, life standards, goals and failures of the most brutal leader in history.

### **The Collapse of the Pyramid: Maslow's Framework Applied to Caligula**

#### **Physiological Needs**

The most basic layer of Maslow's pyramid concerns survival: food, water, rest, and shelter. In the early years of Caligula's rule, he attempted to address these needs by organizing gladiatorial games and other ways to have fun. At first glance, it might appear that an emperor would never struggle with basic physiological needs such as access to water, shelter, or clothing.

Yet in Caligula's case, such assumptions prove misleading. His pervasive paranoia undermined even these fundamental aspects of existence: he could not drink water without suspicion, could not rest without fear, and could not walk without guards. In the long term, even the presence of guards failed to provide reassurance, as he feared betrayal from those closest to him. Ultimately, he lacked trust not only in others but also in himself.

#### **Safety Needs**

Security of body, health, property, and legal justice are at the core of this second level. Caligula's reign is infamous for its pervasive atmosphere of paranoia

and fear. Arbitrary executions, political purges, and the dissolution of legal procedures destroyed any sense of personal or societal safety. His public spectacles of cruelty and mockery of legal institutions — including appointing his horse as consul — reveal a conscious disregard for this essential need.

The citizens of Rome, regardless of status, lived under the threat of random violence and persecution. We can say that Caligula is right to be a paranoid because if we look at the conclusion he died because of a suicide. But the real question is “Why he died because of a suicide not a heart attack or brain hemorrhage?”

### **Love and Belonging Needs**

Social connection — love, friendship, familial ties — becomes almost impossible in an environment of fear. Caligula not only destroyed trust within the Senate but also invaded the private lives of his political rivals, even publicly humiliating them and their spouses. Allegations of incest and his theatrical treatment of relationships suggest that Caligula's personal ability to form genuine emotional bonds was severely compromised.

Instead of fostering communal spirit, he fostered isolation, surveillance, and betrayal. Caligula's idea of entertainment was completely different. We can also include the incident with the senators' wives in this topic. In this huge empire, even his relatives hated him. He can't afford his belonging needs. Think that you are sleeping with someone but neither you nor your partner loves this situation because this is only a necessity not an entertainment. Everything you do is a game and has no emotional reality. That means Caligula fails at this level again.

### **Esteem Needs**

Statue means everything for an ordinary or popular person, because of this meaning Maslow puts “Esteem Needs” before the last level of his pyramid and made an excellent choice. The need for respect, recognition, and self-esteem plays a central role in Caligula's descent. Rather than earning admiration through just rule or military achievement, Caligula demanded divine worship. He declared himself a living god and sought to be feared rather than respected. His narcissism and obsession with status reflect an unfulfilled and disordered pursuit of esteem.

For the Roman population, meanwhile, the destruction of merit-based advancement and public dignity created a void in self-worth and societal stability. At first, everyone seemed to respect him very much, but then everything changed. The public thought that he was cursed and he would bring the destruction of Rome. In fact, he nearly did so yet ultimately fail even in that.

### **Self-Actualization**

The highest level of Maslow's hierarchy involves achieving one's full potential and creative expression. Under Caligula's regime, cultural life suffered. Fear-based censorship and the suppression of intellectual freedom left little space for philosophical or artistic growth. Caligula's own sense of self-actualization was distorted by delusion: he sought transcendence through domination, humiliation, and divine pretense. What Maslow defines as personal growth became, in Caligula's case, self-destruction. Caligula could not reach the higher levels of the pyramid because he failed to satisfy even its most basic levels. The concept of self-actualization is very different for an Emperor such as Caligula. You might say that getting a promotion from work is enough for me. If you are Caligula you have to conquer, defeat, beat, unite with others, be acknowledged by the public, and be loved by your people.

Honestly, he remained only a tyrant and could not go beyond that. Perhaps his goal of self-realization was simply to cross the English Channel. But even in this goal he lost to a God who didn't exist. In fact, he was just someone trying to realize his own desires for self-actualization, because of this he declared himself as a god. According to the Roman tradition when the emperor dies the public remembers him as a god. However, this tradition isn't enough for Caligula, he wants to be remembered as a god while he is leaving, because his only purpose is to ensure obedience.

### **Conclusion**

Caligula's psychological and behavioral condition appears deeply pathological. We can describe this tyrant as a psychopath or mentally ill. He failed in every way, he could not afford an emperor's responsibilities to the public, soldiers and senators. He failed as a husband, a leader, a commander, and even as a man by the standards of his own time. When examining the Pyramid of Maslow and apply to this whole failure man, we expect it to be at the top of the pyramid because the subject is an emperor not an ordinary man. However, we are facing someone who has reached the deep of the pyramid. This is why Caligula's life appears tragic. While many might aspire to lead the Roman Empire, few would wish to do so if it meant becoming “a Caligula.” If one were to assume the position of Caligula, the outcome would be clear: despite commanding an army, he remained profoundly isolated. His apparent power was undermined by alienation and mistrust, to the extent that even his own soldiers were reluctant to obey his orders. No one loves you, even the people you sleep with hate you, even your sister. His pervasive anxiety prevented him from achieving even the most basic need for restorative sleep. No matter how comfortable his bed might have been, paranoia pierced his rest like a bed of needles, leaving him restless and tormented. Neither respect, nor love, nor

security, nor success, nor any other good things in life you will have be. All you have is your position of no consequence, women who are disgusted by you, and alcohol that wants to spill on the floor and go to waste when it goes into your mouth. Now say it: would you want to be Caligula? Even an unemployed person may have some positions in their life; this can be a wife, a house, a child, a piece of fence, a T-shirt or anything else. Caligula doesn't even have a piece of fence to protect him. Understanding Caligula could only be achieved by adapting Maslow's pyramid. By examining Caligula through each level of Maslow's hierarchy of needs, it becomes evident that he exemplifies a profoundly disturbed psychological profile. His pervasive paranoia, inability to form meaningful relationships, and chronic failure to satisfy even basic human needs underscore the severity of his dysfunction. This analysis suggests that Caligula's case warrants careful and systematic study from both historical and psychological perspectives, providing valuable insights into the complex interaction between personal pathology and autocratic leadership.

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## Ethical Leadership and Accountability in Nigeria's Public Service

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### Abstract

*This qualitative study examines the critical relationship between ethical leadership and accountability in Nigeria's public service, exploring how ethical practices influence governance outcomes. The research identifies pervasive challenges including systemic corruption, lack of transparency, weak institutional frameworks, and political interference that undermine accountability mechanisms. Through content analysis of secondary sources including journal articles, government publications, and empirical studies, the investigation reveals that ethical failures in Nigeria's public service are multifaceted, stemming from historical precedents, organizational culture, and socioeconomic factors. The study establishes that ethical leadership characterized by integrity, accountability, transparency, and commitment to the public good is instrumental to achieving good governance and sustainable development. Findings indicate that transformational leadership approaches, coupled with strengthened institutional controls and cultural transformation, could significantly enhance accountability in the public sector. The research contributes to the existing literature by providing a comprehensive analysis of the interconnectedness between ethical leadership and accountability in the Nigerian context. Recommendations include institutional reforms, enhanced transparency mechanisms, leadership development programs, and the cultivation of an ethical organizational culture to promote accountability and good governance in Nigeria's public service.*

Keywords: Ethical Leadership, Accountability, Public Service, Governance, Corruption, Nigeria

### Introduction

The public service in Nigeria represents the institutional framework through which government policies are formulated and implemented, thereby serving as the engine room of governance and national development. Historically, Nigeria's public service has undergone significant reforms since the colonial period, with the 1976 reforms marking a major attempt to professionalize and enhance efficiency in the sector (Adebayo, 2020). Despite these reforms, the sector continues to grapple with challenges of inefficiency, politicization, and declining ethical standards. The concept of ethical leadership, which emphasizes principles such as transparency, accountability, integrity, and service to the public good, remains central to addressing these challenges and ensuring the proper functioning of public institutions (Okereke & Eme, 2022).

Nigeria's socioeconomic landscape reveals a paradox a country endowed with vast human and natural resources, yet consistently facing underdevelopment, poverty, and inequality. Scholars argue that this

contradiction is strongly tied to governance deficits, especially within the public service (Akinola, 2021). Issues such as nepotism, bribery, embezzlement, and bureaucratic bottlenecks have become entrenched, weakening institutional performance and eroding public confidence in government agencies. These unethical practices not only diminish service delivery but also stifle sustainable economic growth and social justice (Olowu & Oyedele, 2023).

The erosion of accountability in Nigeria's public service is a direct consequence of weak enforcement mechanisms and a culture of impunity among public officials. Studies show that accountability mechanisms such as audits, procurement monitoring, and anti-corruption frameworks are either poorly implemented or circumvented due to weak political will (Agbiboa, 2021). As a result, the credibility of the public service has been compromised, with the average citizen perceiving government institutions as self-serving rather than people-oriented. This situation underscores the urgency of embedding ethical leadership as a

guiding principle in Nigeria's governance framework (Adeosun, 2022).

In the broader theoretical discourse, ethical leadership and accountability have gained global recognition as key determinants of public sector effectiveness. Theories such as Transformational Leadership Theory and Agency Theory emphasize the role of leaders in fostering accountability, ethical behavior, and alignment of personal interests with public goals (Brown & Treviño, 2020). However, the application of these frameworks in Nigeria remains underexplored, with existing literature offering limited insights into how ethical leadership can be systematically cultivated to combat entrenched corruption and inefficiency in public institutions (Eneh, 2022).

Against this backdrop, this study seeks to bridge the gap by critically examining the relationship between ethical leadership and accountability in Nigeria's public service. By drawing from empirical evidence, theoretical perspectives, and comparative global practices, the study aims to provide actionable recommendations for strengthening institutional frameworks. Ultimately, the research contributes to the broader debate on governance reform in Africa, highlighting the need for leadership models rooted in ethics, transparency, and accountability to achieve sustainable national development (Oluwatobi & Okafor, 2023).

### Statement of the Problem

The Nigerian public service is bedeviled by a plethora of ethical issues that have severely compromised its accountability mechanisms and service delivery capacity. Despite numerous reforms and anti-corruption initiatives, systemic corruption remains entrenched in the public sector, manifesting through various forms including bribery, embezzlement of funds meant for developmental projects, falsification of government documents for selfish motives, and inflation of contract figures. These unethical practices have become so normalized that they now represent a significant impediment to Nigeria's socioeconomic development.

The magnitude of corruption and ethical violations was particularly evident during the COVID-19 pandemic, when public officials brazenly looted palliative materials meant for vulnerable populations during lockdown periods. This incident highlighted the profound ethical crisis within Nigeria's public service and raised serious questions about the effectiveness of existing accountability mechanisms. The persistence of such practices suggests deep-rooted systemic issues that go beyond individual moral failings to encompass institutional and structural deficiencies.

Several interconnected factors contribute to this problematic situation. General poverty among the

populace creates an environment conducive to corruption, as public officials often seek alternative means of supplementing their income. The politicization of the public service has led to the appointment of unqualified personnel based on patronage rather than merit, further eroding professionalism and ethical standards. Additionally, weak regulatory instruments and enforcement mechanisms have created a culture of impunity where ethical violations often go unpunished.

The consequences of these ethical failures are far-reaching and multifaceted. They include poor service delivery, inadequate infrastructure, weakened public institutions, diminished public trust, and ultimately, the perpetuation of poverty and underdevelopment despite Nigeria's abundant resources. This situation necessitates a thorough investigation into the root causes of ethical violations in Nigeria's public service and the identification of practical strategies for promoting ethical leadership and accountability.

### Objectives of the Study

This research aims to comprehensively examine the phenomenon of ethical leadership and accountability in Nigeria's public service. The specific objectives are:

1. To investigate the perception and manifestation of ethical leadership within Nigeria's public service sector, examining the extent to which political leaders exhibit accountability and integrity as instruments of governance.
2. To identify and analyze the institutional and cultural factors that constrain ethical behavior and accountability in Nigeria's public service, including poverty, corrupt practices, weak regulatory frameworks, and organizational culture.
3. To propose evidence-based strategic recommendations for promoting ethical leadership and strengthening accountability mechanisms in Nigeria's public service, focusing on institutional reforms, cultural transformation, and leadership development.

### Research Questions

To guide this investigation, the following research questions have been formulated:

1. To what extent do Nigeria's political leaders exhibit accountability and integrity as instruments of governance, and how are these ethical leadership qualities perceived by the public?
2. What are the primary institutional, cultural, and socioeconomic factors that constrain ethical behavior and accountability in Nigeria's public service?
3. What practical strategies and mechanisms can be implemented to promote ethical leadership and strengthen accountability in Nigeria's public service?

## **Conceptual Review**

### **Ethical Leadership**

Ethical leadership in public service is a foundational pillar for building trust and ensuring effective governance. It transcends mere compliance with rules, representing a holistic commitment to moral principles that guide both personal conduct and organizational culture. In today's complex environment, this involves navigating novel dilemmas such as digital privacy, algorithmic bias in automated public service delivery, and the ethical management of vast public datasets (Margetts & Dorobantu, 2019). The concept is not static; it evolves to meet new challenges, demanding that leaders be both morally aware and technically proficient to make decisions that are not only legal but also just and equitable for the citizens they serve. This is particularly critical in an era of deepfakes and misinformation, where public trust is fragile and easily eroded by perceived ethical lapses (Bennett & Livingston, 2018).

The conceptual dimensions of ethical leadership, while rooted in the "moral person" and "moral manager" framework, have been expanded to include a "moral entrepreneur" role in the digital age (Hassan, Wright, & Yukl, 2021). The moral person dimension focuses on the leader's individual character: their honesty, integrity, fairness, and trustworthiness, demonstrated through consistent personal actions. The moral manager dimension is outwardly focused, involving the active promotion of ethical conduct within the organization through clear communication, reinforcement, and holding subordinates accountable. A contemporary example of this duality can be seen in the leadership responses to crises; a leader who transparently acknowledges institutional failures (moral person) and then implements systemic reforms to prevent recurrence (moral manager) embodies both dimensions effectively.

In the Nigerian context, the relevance of ethical leadership is magnified by persistent challenges such as corruption, nepotism, and a historical deficit of public trust. The conceptualization of an ethical leader here must include the courage to resist deeply entrenched informal systems of patronage ("godfatherism") and to make decisions based solely on merit and public interest, a challenge documented in recent analyses of sub-national governance (Okafor & Fatile, 2022). This is exemplified by the ongoing efforts of agencies like the Independent Corrupt Practices and Other Related Offences Commission (ICPC), whose effectiveness is directly tied to the perceived ethical fortitude of its leadership. When such leaders actively "show and tell" their values, they begin to counteract a culture of cynicism and set a new standard for public service.

The practical application of ethical leadership faces significant hurdles, including political pressure,

cultural norms that may conflate loyalty with integrity, and a lack of robust protective mechanisms for whistleblowers. Conceptually, this suggests that ethical leadership cannot be viewed in isolation; it is interdependent with the broader governance ecosystem. For it to flourish, it must be supported by strong, impartial institutions and a vibrant civil society that is empowered to demand accountability, as evidenced by the mixed results of anti-corruption initiatives across Africa (Persson, Rothstein, & Teorell, 2023). Therefore, strengthening ethical leadership is not merely about training individuals but about systematically creating an environment that rewards ethical behavior and imposes tangible costs on ethical violations.

### **Accountability**

Accountability is the bedrock of democratic governance, constituting the mechanisms through which public officials are held responsible for their actions, use of resources, and the outcomes they achieve. Its conceptual core involves three key elements: transparency (openness about actions), answerability (the obligation to justify decisions), and enforceability (the presence of meaningful sanctions for misconduct or poor performance). In the 21st century, the concept has been radically expanded by technology-enabled "social accountability," where citizens and civil society organizations use tools like open data platforms, social media activism, and crowdsourced monitoring to directly hold power to account, often bypassing sluggish or compromised formal channels (Peixoto & Sifry, 2017).

The conceptual framework of accountability operates through multiple, overlapping channels: political, legal, administrative, and professional. A robust system requires these horizontal (between state institutions) and vertical (from state to citizens) mechanisms to function in tandem. Contemporary scholarship emphasizes the rise of "diagonal accountability," a hybrid where civil society actors directly engage with and strengthen horizontal agencies like audit institutions and anti-corruption commissions (Peruzzotti & Smulovitz, 2022). For instance, the audit reports generated by the Office of the Auditor-General for the Federation (a horizontal mechanism) can be leveraged by the media and advocacy by groups like SERAP (social accountability) to pressure the Public Accounts Committees into action, creating a more potent multi-layered web of oversight.

In Nigeria, the conceptual ideal of accountability starkly contrasts with its practical application. While the framework exists on paper, the system is often weakened by politicization, institutional capture, and selective enforcement. A stark contemporary illustration is the persistent and well-documented delays by the National Assembly in reviewing and

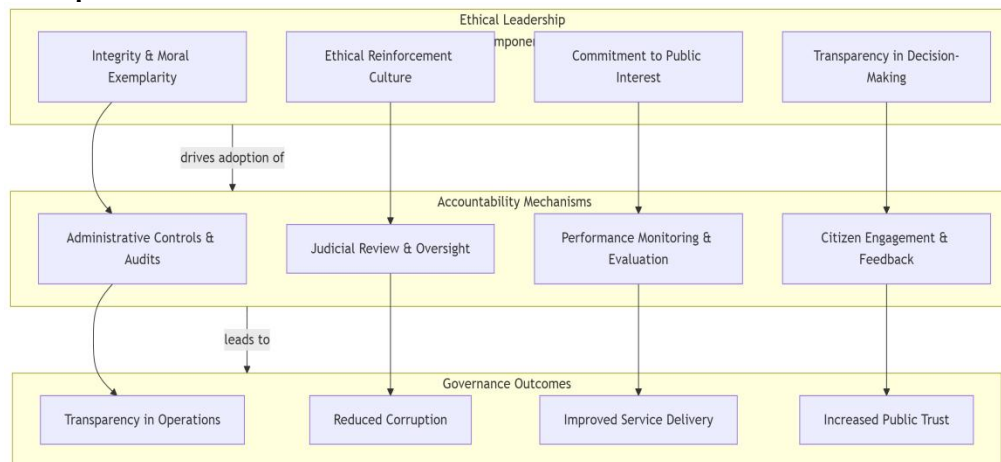


acting upon the annual audit reports submitted by the Auditor-General, a critical failure that breaks the chain of answerability and enforceability (International Budget Partnership, 2023). This perpetuates a culture of impunity, where the likelihood of facing consequences for misappropriation is perceived as low, thus enabling both grand corruption and petty malfeasance alike.

Strengthening accountability conceptually requires moving beyond a focus solely on punitive, retrospective measures to building integrated, proactive systems that prevent misconduct. This includes leveraging technology for real-time transparency, such

as the Government Integrated Financial Management Information System (GIFMIS) and the Treasury Single Account (TSA), though their effectiveness is itself dependent on strong political will and technical capacity (Ojo, 2021). Furthermore, promoting performance-based accountability, which ties rewards and sanctions to measurable results and service delivery outcomes, can shift the focus from process to impact. Ultimately, a reconceptualization of accountability in Nigeria must address the underlying political economy factors that weaken institutions and foster an environment where unethical conduct is rationalized and often rewarded.

## Conceptual Framework



This diagram illustrates a conceptual framework where Ethical Leadership serves as the foundational driver for effective governance. The components of ethical leadership such as integrity, transparency, and a commitment to the public interest directly enable the implementation of robust Accountability Mechanisms, including audits, performance monitoring, and citizen engagement. These mechanisms act as the critical link, translating ethical principles into tangible actions. Finally, the effective functioning of these accountability processes leads to desired Governance Outcomes, such as reduced corruption, improved public service delivery, and, ultimately, the cultivation of greater public trust. The framework demonstrates a clear causal pathway from leadership values to concrete results through the essential medium of accountability.

## Theoretical Framework

Transformational Leadership Theory:

Transformational Leadership Theory, initially conceptualized by Burns (1978) and later expanded by Bass (1985), provides a foundational lens for analyzing leadership effectiveness, particularly in relation to

ethics and accountability. The theory posits that transformational leaders influence their followers by appealing to higher moral values and ideals rather than self-interest. Key components of this leadership style include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006). Through these dimensions, transformational leaders can create meaningful organizational change by shaping values, instilling purpose, and elevating follower commitment to collective goals.

In the Nigerian public service, where issues of corruption, weak institutional accountability, and leadership failures are recurrent, transformational leadership theory offers a compelling framework to understand how ethical leadership can be cultivated. Leaders who demonstrate authenticity, moral integrity, and a commitment to national service can inspire civil servants to emulate similar values, thereby improving institutional performance and public trust. According to Avolio and Walumbwa (2014), transformational leaders serve as ethical role models, which is particularly important in governance systems where leadership deficits are deeply entrenched.

Transformational leadership also aligns with the increasing call for public sector reform in developing countries, especially where leadership effectiveness is often undermined by systemic constraints. Studies such as those by Oreg and Berson (2019) have shown that transformational leadership significantly improves organizational citizenship behavior and reduces unethical practices in bureaucratic settings. In Nigeria's public service, this implies that civil servants who work under transformational leaders are more likely to resist corrupt practices, adhere to institutional regulations, and prioritize service delivery outcomes. This transformation is not only behavioral but cultural, embedding ethics and accountability into the core fabric of public institutions.

Moreover, the theory emphasizes the importance of intellectual stimulation, which encourages innovation and critical thinking in public service. Leaders who foster open dialogue and challenge traditional bureaucratic inefficiencies can empower employees to develop creative solutions to longstanding governance problems. As argued by Northouse (2021), such leadership approaches can shift organizational mindsets from passive rule-following to proactive engagement with public challenges. In the Nigerian context, where rigid hierarchies often stifle innovation, transformational leadership can serve as a catalyst for cultural change and institutional modernization.

In conclusion, Transformational Leadership Theory provides a robust theoretical foundation for exploring ethical leadership and accountability in Nigeria's public service. Its emphasis on moral leadership, inspirational vision, and follower development is particularly relevant in a governance context characterized by ethical lapses and institutional decay. Contemporary research underscores the theory's applicability to public sector reform, especially in environments where ethical leadership is urgently needed to rebuild trust and improve service delivery (Banks et al., 2016). This framework thus informs the current study's exploration of how ethical leadership can be operationalized to strengthen accountability mechanisms within Nigeria's public institutions.

### **Empirical Review**

Several empirical studies have investigated the intersection of ethical leadership and accountability within Nigeria's public service, revealing deep-rooted systemic issues and the challenges confronting reform. Igbokwe-Ibeto and Osakede (2023) conducted a comprehensive assessment of ethical violations in Nigeria's public service, identifying persistent misconduct such as bribery, contract inflation, embezzlement, and document falsification. These malpractices were attributed to entrenched corruption, widespread poverty, weak enforcement mechanisms,

and the politicization of public offices. Their study emphasized the role of institutional failure in enabling unethical behavior and recommended reforms such as empowering professional bodies within the civil service, developing anti-crime tools, and strengthening accountability mechanisms across ministries and agencies.

In a related study, Ngare (2023) explored ethical leadership from the perspective of political accountability and found that successive Nigerian administrations consistently failed to institutionalize integrity and public engagement in governance. The study emphasized that public trust in government remains critically low due to leaders' reluctance to uphold transparency and include citizens in decision-making. Ngare concluded that accountability and integrity are not merely ethical virtues but fundamental requirements for sustainable governance. The research underscored that the absence of these values undermines policy legitimacy, disrupts service delivery, and fosters citizen apathy, thereby complicating the public sector reform agenda in Nigeria.

Further empirical evidence is provided by Okagbue (2011), whose research focused on ethical leadership and governance in Nigerian local governments. The study found that public servants overwhelmingly preferred leadership styles rooted in honesty, transparency, and citizen engagement. Civil servants interviewed during the study identified ethical leadership as a catalyst for enhanced service delivery and public confidence. Notably, the research revealed that ethical leadership can be a transformative force when linked with accountability, transparency, and participatory governance. These findings highlight the potential of ethical leadership not just to mitigate corruption, but to create an enabling environment for socioeconomic development and the effective utilization of public resources.

A more recent study by Orie and Egbe (2025) examined the implications of ethical leadership on sustainable development outcomes in Anambra State. The researchers found a direct correlation between strong ethical leadership, institutional governance, and successful implementation of development projects. The study noted that where transparency and stakeholder engagement were present, development outcomes were significantly more positive. Moreover, the research reinforced the idea that ethical leadership is foundational for ensuring long-term development and public trust. It recommended that government policies explicitly integrate ethical governance frameworks and leadership training for public officials to bridge the accountability gap and promote public sector efficiency.

Methodology

This study adopted a qualitative research design, specifically utilizing content analysis to explore the phenomena of ethical leadership and accountability within Nigeria's public service. A qualitative approach was chosen because it allows for an in-depth, contextual understanding of leadership behavior, institutional dynamics, and socio-cultural factors influencing governance. This method enables the researcher to critically engage with the meanings, themes, and patterns embedded within existing literature, policy documents, reports, and scholarly articles.

The content analysis technique involved the systematic review and interpretation of secondary data drawn from peer-reviewed journals, government publications, organizational reports, and existing empirical studies related to ethical leadership, public service accountability, and governance in Nigeria. Key search terms included "ethical leadership in Nigeria," "public service accountability," "governance challenges," and "transformational leadership in Africa." The documents were selected based on relevance, credibility, and recency (with a preference for sources published between 2010 and 2025), ensuring that the findings are grounded in contemporary evidence and perspectives. This methodology enabled the researcher to identify recurring themes such as integrity deficits, weak regulatory frameworks, politicization of leadership, and cultural constraints within Nigeria's public institutions. Moreover, the qualitative design provided room to compare and synthesize findings from different authors and regions within Nigeria, revealing both systemic patterns and contextual specificities. Through this process, the study was able to derive strategic recommendations informed by real-world challenges and supported by scholarly consensus.

The data analysis process involved thematic coding, where recurring ideas, narratives, and findings were organized into categories aligned with the study's objectives namely, the perception of ethical leadership, institutional and cultural constraints, and recommendations for promoting accountability. This method facilitated a structured interpretation of qualitative data while preserving the richness of contextual insights.

Overall, the chosen methodology allowed the study to explore ethical leadership and accountability not just as abstract concepts, but as lived realities in Nigeria's public service. The reliance on well-documented secondary data enhanced the credibility of findings and ensured that recommendations were grounded in established knowledge and current governance debates.

#### **Data Sources and Collection**

This study utilized a broad range of secondary sources to explore ethical leadership and accountability in

Nigeria's public service. Materials reviewed included peer-reviewed journal articles, textbooks, newspapers, government publications, magazines, and empirical studies relevant to public sector ethics and governance. These sources were identified through systematic searches of academic databases such as Google Scholar, JSTOR, and Scopus, using keywords like "ethical leadership in Nigeria," "public accountability," and "transformational leadership." Emphasis was placed on literature published between 2010 and 2025 to ensure the inclusion of current data and insights.

Additionally, manual reviews of reference lists were conducted to identify further relevant materials. The selected documents were evaluated for relevance, credibility, and academic rigor, providing a comprehensive base for qualitative content analysis. This method allowed the study to critically synthesize existing knowledge, highlight patterns, and offer insights into the challenges and opportunities for promoting ethical leadership and accountability in Nigeria's public service.

#### **Data Analysis**

The collected data were analyzed using qualitative content analysis, involving a systematic process of identifying, coding, and categorizing patterns and themes related to ethical leadership and accountability. This approach enabled the reduction of extensive data into manageable themes, allowing for meaningful interpretation and inference. The analysis focused on both manifest content, which refers to the directly observable information, and latent content, which involves uncovering the underlying meanings and contextual nuances. Through ongoing engagement with the source materials, the study ensured the reliability of its interpretations and developed a comprehensive understanding of the complex phenomena under investigation.

#### **Ethical Considerations**

The research adhered to ethical standards for secondary data analysis by appropriately acknowledging all sources through proper citations and references. Intellectual honesty and integrity were maintained throughout the study by accurately representing the findings and arguments from the source materials, ensuring there was no misrepresentation or manipulation of information. This careful attention to ethical considerations upheld the credibility and reliability of the research.

#### **Discussion of Findings**

The analysis of secondary sources revealed several key findings regarding ethical leadership and accountability in Nigeria's public service:

### **Pervasive Ethical Violations and Systemic Corruption:**

The study confirmed the existence of widespread ethical violations in Nigeria's public service, ranging from petty corruption to grand misappropriation of public funds. These violations have become institutionalized and normalized within the system, creating a culture where ethical conduct is often the exception rather than the norm. The pervasiveness of corruption has significantly undermined public trust in government institutions and impaired the effectiveness of service delivery. Particularly concerning was the finding that ethical violations persisted even during emergency situations such as the COVID-19 pandemic, when public officials looted palliative materials meant for vulnerable populations. This demonstrates the depth of the ethical crisis within Nigeria's public service and suggests that existing accountability mechanisms are insufficient to deter misconduct, especially among those in leadership positions.

### **Weak Institutional Frameworks and Enforcement Mechanisms:**

A critical finding of this study is the weakness of institutional frameworks designed to promote ethical conduct and ensure accountability in Nigeria's public service. Although Nigeria has established various institutions and regulations to combat corruption and enforce accountability, these mechanisms have proven ineffective due to political interference, inadequate resources, and weak enforcement capacity. The study revealed that regulatory capture has been a significant problem, with political leaders often interfering with the operations of accountability institutions to protect themselves and their allies from scrutiny. This has created a culture of impunity where public officials can engage in ethical violations with minimal fear of consequences. Additionally, the judicial system has been compromised in many cases, further weakening the accountability framework.

### **Socioeconomic and Cultural Factors Enabling Ethical Violations:**

The research identified several socioeconomic and cultural factors that contribute to ethical violations in Nigeria's public service. General poverty among the population has created pressure on public officials to seek alternative means of income generation, often through corrupt practices. The politicization of the public service has led to the appointment of unqualified personnel based on patronage rather than merit, further eroding professionalism and ethical standards. Additionally, the study found that the legacy of colonial administration continues to influence ethical practices in Nigeria's public service. The colonial administration was characterized by authoritarianism

and extraction rather than service to the public, and elements of this legacy persist in contemporary administrative practices. This historical context helps explain why ethical leadership and accountability have been difficult to institutionalize in Nigeria's public service.

### **Leadership Failure and Erosion of Public Trust:**

The study documented a crisis of leadership in Nigeria's public service, with successive political leaders failing to exemplify accountability and integrity in governance. This leadership failure has had a trickle-down effect throughout the public service, creating an environment where ethical violations are tolerated and even expected. The erosion of public trust has been both a cause and consequence of unethical leadership, as citizens' diminishing faith in public institutions reduces their willingness to hold leaders accountable while also justifying further ethical violations by public officials. This vicious cycle has been difficult to break, as each generation of leaders seems to perpetuate the patterns of misconduct established by their predecessors.

### **Conclusion**

This study has examined the critical issues of ethical leadership and accountability in Nigeria's public service, revealing a complex web of challenges that have significantly impaired the effectiveness of governance and service delivery. The research demonstrates that ethical violations are pervasive and systemic, ranging from petty corruption to grand misappropriation of public funds. These violations are facilitated by weak institutional frameworks, socioeconomic factors, and a culture of impunity that has developed over decades.

The interrelationship between ethical leadership and accountability has been clearly established, with weaknesses in both areas creating a vicious cycle that undermines good governance. Ethical leadership is essential for establishing the moral tone and cultural norms that support accountability, while robust accountability mechanisms are necessary to reinforce ethical leadership by providing consequences for violations. The absence of both elements in Nigeria's public service has resulted in poor service delivery, weakened institutions, diminished public trust, and ultimately, the perpetuation of poverty and underdevelopment despite Nigeria's abundant resources. The study concludes that addressing the challenges of ethical leadership and accountability in Nigeria's public service requires a comprehensive approach that addresses both individual and institutional dimensions. Transformational leadership that inspires ethical conduct must be complemented by institutional reforms that create effective accountability mechanisms.

Additionally, socioeconomic factors that enable corruption must be addressed through broader policy interventions aimed at poverty reduction and the promotion of inclusive development.

### Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance ethical leadership and accountability in Nigeria's public service:

1. **Institutional Strengthening:** Public institutions responsible for ensuring accountability should be strengthened with adequate resources, operational independence, and protected mandates to minimize political interference. This includes anti-corruption agencies, audit institutions, and the judiciary. Specifically, legislation protecting these institutions from political manipulation should be enacted and enforced.
2. **Leadership Development and Ethics Training:** Comprehensive leadership development programs incorporating ethics training should be implemented at all levels of the public service. These programs should emphasize the principles and practices of ethical leadership, focusing on values such as integrity, transparency, and accountability. Such training should be mandatory for all public officials, particularly those in leadership positions.
3. **Transparency and Open Government Initiatives:** The government should implement robust transparency initiatives including open data platforms, public access to information, and citizen engagement mechanisms. The Open Tendering System for government contracts implemented in Anambra State represents a good practice that could be scaled nationally to reduce corruption in public procurement.
4. **Performance Management and Accountability Systems:** Effective performance management systems with clear metrics and consequences for non-performance should be established throughout the

public service. These systems should link performance evaluation to rewards and sanctions, creating incentives for ethical conduct and discouraging violations.

5. **Socioeconomic Reforms:** Broader socioeconomic reforms addressing poverty and inequality should be implemented to reduce the pressures that contribute to corrupt practices. This includes reviewing the compensation structure for public servants to ensure living wages that reduce the temptation for unethical supplementation of income.

### Suggestions for Further Study

Based on the limitations and findings of this research, the following areas are recommended for further investigation:

1. **Comparative Studies:** Research comparing ethical leadership and accountability mechanisms in Nigeria's public service with those of other countries (both within and outside Africa) could provide valuable insights into context-specific and transferable solutions.
2. **Sector-Specific Analyses:** Studies focusing on specific sectors of Nigeria's public service (such as health, education, or security) could reveal sector-specific challenges and opportunities for promoting ethical leadership and accountability.
3. **Longitudinal Research:** Investigations tracking changes in ethical leadership and accountability practices over time would help assess the effectiveness of interventions and reforms aimed at addressing these issues.
4. **Quantitative Assessments:** Research employing quantitative methods to measure the prevalence and impact of ethical violations would provide valuable data for evidence-based policy formulation and resource allocation.
5. **Intersectional Studies:** Examinations of how factors such as gender, ethnicity, and religion intersect with ethical leadership and accountability practices could reveal important insights for targeted interventions.

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## The Strategic Importance of Organizational Justice in Modern Organizations

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### Abstract

Organizational justice has become a central idea in explaining how fairness influences employee behavior and workplace outcomes. In today's organizations, where workers are more conscious of their rights and expectations, fairness is no longer just an ethical concern; it is a strategic requirement. This study examined the critical role of organizational justice to organizational performance, employee commitment, and long-term sustainability. The study was anchored on Organizational Support Theory (OST), which offers a powerful theoretical framework for highlighting the strategic importance of organizational justice in modern organizations. Using a historical research design, the study reviews major theories and scholarly discussions on justice in organizational life. It focuses on the dimensions of justice, while exploring how they have developed over time and been applied in practice. This approach helps to highlight the continuing relevance of fairness to current workplace issues such as diversity, talent retention, and organizational image. Organizations that prioritize fairness in their procedures, decision-making, and distribution of resources are more likely to foster trust, minimize workplace conflicts, and maintain a sustainable competitive edge. On the other hand, a lack of fairness often results in employee dissatisfaction, resistance, and damage to organizational credibility. The study concluded that organizational justice should be regarded as a strategic foundation for modern organizations. By embedding fairness into workplace practices, organizations can strengthen collaboration, stimulate innovation, and secure long-term growth in today's highly competitive environment. It is recommended, among others, that policy makers and organizational leaders should align organizational justice with strategic planning by connecting fairness initiatives to broader objectives such as improving employee retention, enhancing organizational reputation, and achieving sustainable performance.

**Keywords:** Justice, fairness, organizational credibility, strategy, workplace outcomes

### Introduction

Although global research consistently underscores the vital role of organizational justice in shaping workplace dynamics and outcomes, variations remain in how fairness is interpreted and practiced across different countries and industries. In societies with strong institutions and transparent governance, fairness is more deeply embedded in organizational structures, resulting in higher employee trust, satisfaction, and productivity. Conversely, environments marked by weak institutional frameworks, rigid hierarchies, and poor communication often suffer from widespread perceptions of unfairness, leading to low morale, disengagement, and diminished performance.

Over the years, organizational justice has emerged as a central theme in management and organizational behavior studies, reflecting the growing recognition that fairness is indispensable for motivating employees, sustaining satisfaction, and driving organizational success. Broadly, organizational justice captures how employees perceive fairness in decision-making, organizational processes, and interpersonal treatment (Colquitt et al., 2001). With workplaces constantly adapting to globalization, technological innovations, and diverse workforce needs, justice has transitioned from being a purely ethical concern to a strategic imperative (Cropanzano et al., 2017).

In today's highly competitive landscape, human capital is a key determinant of sustainability. Employees who

experience fairness are more likely to remain committed, collaborative, and innovative, thereby strengthening organizational performance (Al Aina & Atan, 2020). Conversely, unfair treatment often fuels counterproductive behaviors, higher turnover, and weakened trust in leadership (Greenberg, 1990; Hamdani & Jufrizen, 2023). Ensuring fairness, therefore, extends beyond moral responsibility to becoming a foundation for organizational resilience and effectiveness.

Organizational justice is commonly explored through three main dimensions: distributive justice, which relates to fairness in outcomes; procedural justice, which emphasizes fairness in decision-making processes; and interactional justice, which focuses on fairness in communication and interpersonal treatment (Colquitt, 2001; Hamdani & Jufrizen, 2023). Collectively, these dimensions shape how employees perceive justice and influence the culture of an organization.

While much research has examined these dimensions individually, limited studies have considered their combined effects on employee outcomes, especially within diverse cultural and organizational settings. Even fewer investigations have focused on how justice functions in rapidly changing workplaces shaped by the COVID-19 pandemic, remote and hybrid work models, and digital transformation. These shifts underscore the urgency of exploring how fair perceptions evolve in modern work environments and their ongoing impact on employee performance. This study, therefore, examined the strategic role of organizational justice in modern organizations, emphasizing its relevance for fostering employee engagement, workplace harmony, and sustainable competitive advantage.

### **Review of Related Literature**

Justice is generally equated with fairness, and the two concepts are often used interchangeably. It reflects the belief that actions or decisions are morally right, based on ethical values, equity, religious principles, or legal standards. In everyday life, people are highly sensitive to issues of fairness, especially in organizational settings where employees constantly assess whether workplace decisions and practices are just (Chandrawaty & Widodo, 2021). These perceptions strongly influence their attitudes and behaviours. When fairness is evident, employees tend to react positively, showing higher motivation and commitment. Conversely, perceptions of injustice often trigger dissatisfaction, disengagement, or resistance. For this reason, fairness is a central concern for organizations, shaping employee morale, motivation, and job performance. In practice, workplace justice often encompasses fair pay, equal opportunities for career

advancement, unbiased recruitment processes, and transparent decision-making systems.

Justice is also regarded as a universal norm and a fundamental human right, rooted in the dignity of individuals, who deserve fair treatment in every circumstance, including within organizations. From this perspective, organizational justice refers to employees' perceptions of fairness in the way they are treated compared to others. According to Hamdani and Jufrizen (2023), organizational justice consists of three major dimensions: distributive justice, which focuses on fairness in outcomes; procedural justice, which evaluates fairness in processes; and interactional justice, which emphasizes respectful communication and treatment. Several factors shape how justice is perceived in organizations. These include the nature and clarity of assigned tasks, employees' trust in their leaders, the frequency of constructive feedback, managerial integrity in applying rules fairly and consistently, and the overall organizational climate, which sets the tone for how employees experience fairness in their workplace.

Robbins and Judge (2009) describe justice as an ethical standard that ensures rules are applied consistently and impartially, with the goal of achieving a fair balance in the distribution of benefits and costs. Within organizations, justice reflects how employees perceive fairness in their workplace. These perceptions have attracted considerable attention because of their strong influence on both individual and organizational outcomes. Justice is considered one of the most fundamental aspects of human life, serving as a foundation for growth and the advancement of societies. Since organizations operate as social systems, their stability and sustainability depend heavily on the degree to which justice is upheld among their members. Much of the research on justice has focused on how employees evaluate the fairness of what they receive from their organization compared to what they contribute (Afjeh, 2017). In this regard, justice is understood as a moral and ethical principle that emphasizes fairness, equality, law, and even faith-based values.

The concept of organizational justice was formally introduced by Greenberg in 1987. It focuses on how employees assess the fairness of organizational behaviour and how those assessments shape their own attitudes and actions. Put simply, organizational justice concerns the extent to which employees perceive fairness in their workplace. This concept has been a central topic in management, organizational behaviour, and psychology research (Parker & Kohnmeyer, 2005). Different scholars have defined organizational justice in diverse ways. Okocha and Anyanwu (2016), for example, describe it as the role of equity within the workplace, emphasizing how organizations treat their



employees in line with moral and ethical standards. It also encompasses how employees accept or reject the behaviour of management. Similarly, Kalay (2016) provides a broad perspective, defining organizational justice as the evaluation of management decisions concerning responsibility delegation, empowerment, compensation, reward allocation, workplace policies, and the transparency of decision-making processes. In essence, organizational justice captures employees' perceptions of fairness across economic, social, and managerial dimensions of organizational life.

Imran (2016) describes organizational justice as the fair use of procedures and processes by leaders in dealing with employees to achieve positive workplace outcomes. It focuses on how workers evaluate fairness in their treatment and how such judgments affect other aspects of their work experience. In a similar view, Ohiorenoya and Eguavoen (2019) define organizational justice as employees' perceptions of fairness in organizational treatment, often reflected in reward systems that ensure compensation corresponds fairly with effort and performance. Zayer and Benabdelhadi (2020) expand this by highlighting that organizational justice involves fairness perceptions related to processes, outcomes, and interpersonal treatment within the organization. It plays a vital role in organizational behaviour and human resource management because it influences employee attitudes and behaviours. When fairness is perceived, employees show stronger commitment, trust, satisfaction, and engagement. In contrast, perceptions of unfairness can lead to dissatisfaction, low morale, absenteeism, and turnover, thereby undermining workplace productivity (Rowland & Hall, 2012).

Nurak and Riana (2017) emphasize the moral and ethical conduct of managers in decision-making as a key determinant of organizational justice, while Timan et al. (2024) describe it as the degree to which employees feel treated equally by their superiors. In essence, it represents employees' general perceptions of fairness in organizational decisions and practices. Beyond individual attitudes, organizational justice also impacts wider organizational outcomes. A just workplace strengthens trust between employees and management, reduces conflict, and nurtures collaboration and respect. It also enhances organizational reputation, supports talent retention, and promotes long-term sustainability (Al Aina & Atan, 2020). By applying fairness across dimensions such as resource distribution, promotions, compensation, performance appraisal, and conflict resolution, organizations foster inclusive and equitable environments. This not only motivates employees and sustains engagement but also contributes to achieving strategic goals (Cropanzano et al., 2007; Kolawole et al., 2025; Timan et al., 2024).

## **Dimensions of Organizational Justice**

According to Hamdani and Jufrizen (2023), organizational justice can be understood through four key dimensions that shape how employees perceive fairness in the workplace. These are distributive justice, procedural justice, interactional justice, and informational justice.

### **Distributive Justice**

Distributive justice focuses on the fairness of outcomes such as pay, promotions, job security, and recognition. Employees usually assess fairness by comparing their input–output ratio (e.g., effort, skills, or experience versus salary, promotion, or rewards) with that of their colleagues (Yetgin, 2024). When resources are shared fairly, employees experience higher job satisfaction, while unfairness can trigger dissatisfaction, low effort, or intentions to quit (Biswas & Ramaswami, 2013). Similarly, Harif et al. (2019) note that employees judge fairness by comparing their outcomes with others, and unfair results may lead them to distort their own or others' contributions. Timan et al. (2024) expand this by linking distributive justice to fairness in resource allocation, compensation, and even employee health outcomes, highlighting that unfairness often generates negative emotions and behaviors.

### **Procedural Justice**

While distributive justice emphasizes results, procedural justice centers on the fairness of the processes used to reach those results. Transparent, consistent, and inclusive decision-making processes, such as promotion or salary review procedures, strengthen employees' trust, job satisfaction, and commitment (Azubuike & Madubochi, 2021). Conversely, when processes are perceived as biased or unfair, employees may feel stressed, disengaged, or even exhibit absenteeism. Timan et al. (2024) emphasize that fair procedures build legitimacy, encourage voluntary cooperation, and foster trust, while unfair ones generate resistance and distrust.

### **Interactional Justice**

Interactional justice concerns the quality of interpersonal treatment employees receive, focusing on respect, empathy, honesty, and dignity. Faruk (2016) stresses that fairness in supervisor–employee interactions is crucial for maintaining positive relationships. Timan et al. (2024) distinguish two elements: interpersonal justice (respectful treatment) and informational justice (honest explanations). Ajala (2015) adds that truthfulness, respect, absence of prejudice, and timely justification or apology when mistakes occur can enhance employees' sense of fairness.

## **Informational Justice**

Informational justice deals specifically with the adequacy, transparency, and clarity of communication from management (Lünich et al., 2024). It emphasizes not only informing employees but also explaining the reason behind organizational decisions. Faruk (2016) highlights that while interactional justice focuses on *how* communication is delivered (respectfully or not), informational justice emphasizes *what* is communicated (accuracy and completeness). Marso and Anggreyani (2024) argue that clear and timely updates foster trust and psychological safety, enabling employees to voice concerns and contribute effectively. In contrast, vague or deceptive communication damages trust and increases dissatisfaction.

When combined, these four dimensions, distributive, procedural, interactional, and informational justice form a comprehensive framework for understanding organizational fairness. Studies (e.g., Jung & Ali, 2017; Yoon & You, 2016) consistently show that high perceptions of justice enhance job satisfaction, loyalty, cooperation, and overall performance. Conversely, when justice is lacking, organizations face higher turnover, stress, and disengagement. Ultimately, organizational justice is essential for building a positive, committed, and productive workforce. Rizwan (2014) highlights that organizational justice is shaped by four fundamental factors: equitable compensation, transparent employee selection, merit-based promotion, and objective workplace relationships. Together, these elements form the basis of how employees perceive fairness in their organizations, directly influencing:

### **1. Equitable Compensation**

Equitable compensation refers to a reward system that fairly reflects an employee's contributions, considering workload, responsibilities, experience, and skills. The principle of fairness in pay requires that individuals performing similar tasks receive comparable rewards, thereby minimizing favoritism or bias. Perceptions of justice in compensation are not only tied to measurable outputs but also to how employees interpret intent, awareness, and ethical behavior behind reward decisions. When compensation aligns with employee value, trust and commitment to the organization are strengthened.

### **2. Formal Employee Selection**

A transparent and systematic recruitment process is essential in reinforcing fairness in organizations. Formal selection involves assessing candidates based on objective criteria such as qualifications, work history, skills, and personal integrity. Standardized methods like aptitude tests, reference checks, structured interviews, and background verifications are typically employed. By ensuring that hiring decisions are grounded in merit rather than personal bias,

organizations build credibility and foster employee trust.

## **Merit-Based Promotion**

Promotions serve as recognition of employee effort and performance, but they must be based on fairness to have the intended motivational effect. A merit-based promotion system advances individuals based on clear performance metrics, demonstrated competence, and organizational needs, rather than favoritism or informal influence. Fair promotion practices not only enhance morale and job satisfaction but also signal an organization's commitment to equity, which motivates employees to strive for excellence and strengthen overall performance.

## **Objective Workplace Relations**

Workplace relationships that are guided by professionalism and objectivity help minimize personal biases in decision-making. While such interactions may appear detached, they are crucial in maintaining fairness, consistency, and respect for organizational rules. By prioritizing rationality over favoritism, impersonal workplace relations foster procedural justice, safeguard professional boundaries, and reduce the risk of conflicts of interest. Although they may reduce emotional closeness, they ensure decisions are transparent and credible.

## **The Strategic Importance of Organizational Justice in Modern Organizations**

Organizational justice is a vital factor that shapes employee attitudes, performance, and overall organizational effectiveness. Research consistently shows that fairness within organizations generates a series of positive outcomes such as higher satisfaction, stronger commitment, greater readiness for change, and enhanced innovation, while reducing burnout, turnover, and counterproductive work behaviours. The key importance of organizational justice can be outlined as follows:

### **Enhancing Employee Performance and Productivity**

Organizational justice directly influences how well employees perform. When compensation, rewards, and promotion processes are fair and transparent, employees feel valued, which motivates them to work harder. For instance, Artatanaya and Widhari (2023) found that distributive and procedural justice improved employee performance through organizational citizenship behaviours (OCB) and trust. Chandrawaty and Widodo (2021) also revealed that interactional justice, reflected in respectful treatment, was the strongest predictor of performance. Psychological empowerment further mediates this relationship, enabling employees in fair environments to contribute

innovative ideas, support colleagues, and take on extra-role behaviours, thereby boosting overall productivity.

### **3. Promoting Job Satisfaction and Organizational Commitment**

Fairness in decision-making strongly influences employees' emotional connections to their organizations. Evidence shows that organizational justice enhances job satisfaction, which in turn strengthens organizational commitment. Using the job demands–resources (JD-R) model, Yetgin (2024) demonstrated that distributive, procedural, informational, and interactional justice predicted higher identification with the organization, leading to greater commitment and engagement. Similarly, Marso and Anggreyani (2024) found that perceptions of fairness improved job satisfaction and commitment, mediated by psychological capital and quality of working life. When employees trust that processes and outcomes are fair, they invest more emotionally and cognitively, ensuring long-term commitment.

### **4. Facilitating Organizational Change and Innovation**

Resistance to change is common, but perceptions of fairness, particularly in procedural and informational justice, can reduce resistance and promote readiness for change. Kebede and Wang (2022) showed that organizational justice positively shaped employees' willingness to adapt to change in the Ethiopian Revenue and Customs Authority, with perceived organizational support playing a mediating role. Furthermore, organizational justice stimulates innovation by encouraging knowledge sharing and collaboration. Akram and Dong (2019) demonstrated that all dimensions of justice, distributive, procedural, interactional, temporal, and spatial, positively influenced knowledge sharing and innovative behaviours, making fairness a catalyst for creativity and transformation.

### **5. Reducing Burnout, Turnover, and Counterproductive Behaviours**

Unfair treatment in pay, promotions, or workplace interactions often leads to burnout, dissatisfaction, and higher turnover. Ji et al. (2025) revealed that low distributive, procedural, and interactional justice were linked to greater burnout, reduced job satisfaction, and stronger turnover intentions, with procedural justice having the strongest indirect effect. Unfairness also drives counterproductive work behaviours (CWBs) such as incivility or withdrawal. Conversely, perceptions of fairness reduce these behaviours, ensuring workplace stability and safety.

### **6. Strengthening Trust and Organizational Citizenship**

Trust is a critical outcome of justice. When employees believe decision-making is consistent and fair, they are more likely to trust the organization, which encourages

prosocial behaviours such as OCB. Syaifuddin et al. (2023) highlighted a strong link between fairness and OCB, showing that employees treated fairly are more willing to help colleagues, support organizational goals, and engage in extra-role behaviours. In sensitive environments like healthcare, El-Sayad et al. (2014) found that higher organizational justice among physicians and nurses improved performance and service quality, underlining the importance of fairness in professional trust and teamwork.

### **Aligning Organizational Goals and Labour Relations**

Organizational justice also plays a strategic role in labour relations and corporate social responsibility (CSR). By embedding fairness in policies and practices, organizations can align employee and organizational objectives while fostering cooperative relations with labour unions. Jung and Ali (2017) found that distributive and procedural justice enhanced employee attitudes toward CSR, while cooperative labour relations strengthened job satisfaction and commitment. Similarly, Yoon and You (2016) showed that CSR initiatives supported by fair organizational cultures promoted positive labour–management relations in Korean SMEs.

Thus, organizational justice is more than an HR practice; it is a cornerstone of effective management. Rooted in equity and social exchange theories, justice fosters trust, engagement, performance, and innovation while reducing negative outcomes like burnout and turnover. For organizations navigating change and global competition, embedding fairness into structures and culture is not optional but essential. Proactive justice strategies create resilient, engaged, and innovative workforces, leading to sustainable organizational success (Marso & Anggreyani, 2024).

### **Theoretical Framework**

This study was anchored on Organizational Support Theory (OST), developed by Robert Eisenberger and his colleagues in the 1980s through their foundational work on Perceived Organizational Support (POS). OST posits that when employees perceive that their organization values their contributions and cares about their well-being, they respond with stronger commitment and dedication to organizational goals (Eisenberger et al., 1986).

At the heart of the theory is the concept of POS, which reflects employees' general beliefs about how supportive their organization is. When workers feel supported, they are more likely to exhibit loyalty, trust, and increased effort. Conversely, perceptions of neglect or unfair treatment can weaken motivation and lead to withdrawal behaviors (Rhoades & Eisenberger, 2002).

The theory also stresses that support from the organization fulfills employees' socio-emotional needs, such as respect, belonging, and recognition. Meeting these needs fosters psychological attachment, encouraging workers to align their personal goals with those of the organization. In doing so, job satisfaction and performance improve (Shanock & Eisenberger, 2006). Furthermore, OST emphasizes reciprocity; employees who feel supported often go beyond their formal job roles, engaging in discretionary efforts such as organizational citizenship behaviors. Lack of support, on the other hand, can generate stress, dissatisfaction, and higher turnover rates (Kurtessis et al., 2017).

The relevance of OST to this study lies in its connection between fairness and perceptions of support. Acts of justice, such as equitable resource allocation, transparent processes, and respectful interactions to employees that the organization values them. These signals strengthen trust and deepen their sense of belonging, which in turn boosts commitment and engagement.

In today's competitive environment, where innovation, talent retention, and organizational sustainability are vital, OST provides an important lens for understanding why justice is not just an ethical principle but a strategic asset. Fair treatment fosters positive perceptions of support, enhances organizational reputation, reduces turnover, and promotes long-term performance. Thus, OST offers a powerful theoretical framework for highlighting the strategic importance of organizational justice in modern organizations.

### Methodology

This study adopted a historical research design, which is appropriate for exploring how the idea of organizational justice has developed over time and why it remains strategically important in today's organizations. The historical approach allows the researchers to trace theoretical shifts, scholarly discussions, and practical applications of organizational justice across different organizational settings. The study relies entirely on secondary sources of data. These include peer-reviewed journal articles, published books, and other credible academic works that address organizational justice. Drawing on secondary sources makes it possible to build on established knowledge and to provide a broad and critical review of how the concept of justice has been understood and applied in organizational studies.

To interpret and make sense of the data collected, content analysis was used as the main method of interpretation. This process involves carefully reviewing, categorizing, and interpreting data from the collected sources to uncover common themes, patterns,

and perspectives. Through this analytical approach, the study brings to light how organizational justice shapes employee commitment, organizational effectiveness, and long-term sustainability, while also showing its continued significance in addressing the challenges of modern workplaces.

### Conclusion and Recommendations

This study explored the strategic role of organizational justice and demonstrated how fairness forms the foundation of organizational effectiveness and employee well-being in contemporary workplaces. The historical review revealed that organizational justice has progressed from being seen merely as an ethical or moral concern to becoming a vital strategic requirement for maintaining competitive advantage. By examining its development through the dimensions of distributive, procedural, and interactional justice, the study established that fairness is crucial for building trust, strengthening organizational reputation, and improving overall performance.

The findings show that organizations that intentionally embed fairness into their systems and practices enjoy stronger employee engagement, higher retention rates, and more collaborative workplace cultures. Distributive justice, achieved through the equitable sharing of rewards and resources, directly impacts perceptions of equity and motivation. Procedural justice, which emphasizes transparency and consistency in decision-making, builds trust in leadership and reinforces organizational legitimacy. Interactional justice, centered on respectful treatment and effective communication, strengthens relationships and nurtures a supportive environment. Together, these dimensions create a comprehensive framework for driving organizational success and ensuring long-term sustainability in today's competitive environment.

Theoretically, the study reinforces the value of Organizational Support Theory (OST), which suggests that employees who feel fairly treated and supported by their organizations tend to respond with loyalty, higher commitment, and improved performance. Organizational justice thus serves as both a moral principle and a strategic mechanism for fostering reciprocity, minimizing workplace conflict, and encouraging innovation. By adopting a historical research approach, this study positioned organizational justice within broader discussions of organizational development, highlighting its function as a bridge between employee welfare and organizational objectives.

On the practical side, the findings emphasize that fairness is not simply an admirable value but an essential managerial responsibility. Organizations that overlook justice risk facing disengagement, low morale, and reputational harm. In contrast, those who prioritize

justice in resource allocation, decision-making, and workplace interactions gain long-term benefits such as attracting and retaining talent, promoting collaboration, and adapting more effectively to change. In modern, diverse workplaces where employee expectations are constantly evolving, justice emerges as the cornerstone for creating inclusive, resilient, and high-performing organizations.

In summary, organizational justice should be seen as a strategic pillar of modern management. It extends beyond resolving individual grievances to shaping a collective culture of fairness and respect that drives innovation, strengthens trust, and supports sustainable growth. For organizations aiming to balance performance goals with employee well-being, justice is not optional; it is indispensable. Based on the findings, the following recommendations are proposed:

- i. Organizations should embed fairness into their decision-making by creating clear and transparent policies to guide promotions, reward systems, and disciplinary measures. Doing so will foster trust and minimize perceptions of bias.
- ii. Managers should actively promote a culture of respect and openness by applying principles of interactional justice in everyday activities. This involves treating employees with dignity, offering timely and constructive feedback, and ensuring that communication across the organization is inclusive.
- iii. Policy makers and organizational leaders should align organizational justice with strategic planning by connecting fairness initiatives to broader objectives such as improving employee retention, enhancing organizational reputation, and achieving sustainable performance.

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## The Influence of Entrepreneurial Training and Innovation Drive on Sustainable Employment Outcomes in Non-Oil-Producing Western States of Nigeria

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### Abstract

*This study investigates the influence of entrepreneurial training and innovation drive on sustainable employment outcomes in the non-oil-producing western states of Nigeria. Employing a quantitative research design, primary data were collected through structured questionnaires from 346 entrepreneurs across the targeted regions. The analysis employed descriptive statistics, correlation, and regression techniques. Findings reveal a significant positive relationship between entrepreneurial training and sustainable employment, with a correlation coefficient of 0.816 ( $p = 0.001$ ), underscoring the critical role of targeted skills development in youth employment. Additionally, the innovation drive was identified as a vital factor in job generation and unemployment reduction, with innovation strategies positively influencing employment outcomes. The study is underpinned by human capital theory and innovation diffusion theory, which support the premise that investments in skills and innovative practices enhance enterprise resilience and productivity. The results imply that strategic policy interventions focused on entrepreneurship education and fostering innovation can substantially contribute to reducing unemployment in Nigeria's non-oil economy, thereby promoting sustainable economic growth.*

**Keywords:** *Entrepreneurial training, Innovation drive, Sustainable employment outcome, human capital, Non-oil economy, Nigeria western states.*

### Introduction

The catalyst for economic expansion, poverty alleviation, and unemployment eradication is entrepreneurship. The vital role that entrepreneurship plays in sustainable economic growth is highlighted by the Global Entrepreneurship and Development Institute, which provides information on the growth and performance of entrepreneurial ecosystems at the national and provincial levels (Akinwale et al., 2020). Furthermore, Martins et al. (2023) contended that entrepreneurship has a significant effect on the economy by creating sustainable wealth and business prospects. These findings underscore the need for policymakers to foster an environment that encourages innovation and supports new ventures. By investing in education, infrastructure, and access to capital, governments can enhance entrepreneurial activities, ultimately driving economic resilience and social progress.

In this study, entrepreneurship is conceptualized as the process of identifying business opportunities and raising the necessary funds to launch a new enterprise or revitalize an existing one in the face of risks and uncertainties with the goal of turning market or business opportunities into revenue under private ownership. To put it simply, entrepreneurship is the combining of limited resources under private ownership made feasible by innovative, profit-driven ideas and practical actions. The menace of unemployment and its related stigmas has remained a viral affliction of most economies. This persistent issue not only affects individual livelihoods but also hampers overall economic growth and social stability. As communities grapple with high unemployment rates, the stigmas associated with joblessness can lead to feelings of rent-seeking behavior and despair among those affected. According to Ayoade & Agwu (2016), unemployment remains a major challenge of modern economies around the world today; Nigeria is no



exception. Resulting from poor enterprise culture, the unemployment situation in Nigeria is now a major driver of poverty and social vices. Nigeria's unemployment rate has become a multifaceted issue that affects people of various ages, educational levels, and geographic locations. The unemployment issue in Nigeria is indeed hydra-headed, as most critical stakeholders, decision-makers, and governments at all levels are struggling to address the severe challenges brought on by the scourge across diverse economies. In the same vein, it has been posited that unemployment is one of the challenges that confronts every developing nation (economy), which includes but is not limited to Nigeria. The impacts, however, are more visibly present among the teeming young people largely referred to as the youths. This was confirmed by Oviawe (2010). He asserted that more than half of the Nigerian population is under the age bracket of 30; this implies that the nation's economy is driven by its young people (youths). However, this phase of the nation's population is the worst hit by the virus of unemployment. According to Emeh, Nwanguna, & Abaroh (2012), the young folks in Nigeria are largely confronted with the challenges of unemployment and poverty as well as a lack of relevant skills, awareness, and ability required to progress and add value to the economy. Apparently, the difficulties occasioned by unemployment and a dearth of productive capacities make it hard to maintain productive and meaningful lifestyles, which has a detrimental effect on the rate of national development. However, the perceived dearth of productive capacities among the growing Nigerian population, practically in the western non-oil-producing state, could be addressed by entrepreneurial training and innovation initiatives in both the long and short run.

There are torrent of evidence on entrepreneurship's positive propensity to foster economic growth and development in the Nigerian economy. The imperative of most of this literature hosts the fact that entrepreneurship has been discovered to be a prime indicator of economic growth, development, and sustainability; this is practically manifested in developing economies such as Nigeria. Adding credence to the above postulates, Adebayo & Jenny (2013) posited that entrepreneurship drives developing nations' economic advancement and sustainability by means of job creation and unemployment diminution. However, Arogundade (2011), cited in Ayoade & Agwu (2016), affirmed the contributory role of entrepreneurial initiative to employment provision but ventilated that entrepreneurship, which would have saved the Nigerian economy from unemployment woes, is not receiving desired support from various levels of government. Recognizing the efficacy of entrepreneurial ventures in job creation, most Nigerians,

especially the youth, have embraced it to carve a niche for themselves in the economy. This corroborates the submissions of Oni & Daniya (2012). The duo posited that Nigerians without jobs have turned to self-help and starting their own enterprises as a way to support themselves. This further stresses the positive nexus of entrepreneurship with job generation. Tijani-Alawiye (2004) emphasizes that entrepreneurship boosts the supply of the host of industrialists, and the upshots in the files of industrialists could result in the manner of SMEs or large-form enterprises, which are present in the economy and should be strong, innovative, and have the push to nurture the diverse businesses so as to develop and realize socio-economic development goals in an economy. Adenutsi (2023) contends that in low-income economies, entrepreneurship is the engine of economic growth and development by reducing poverty, creating jobs, and empowering people.

Entrepreneurial training and innovation initiatives are two strategic hubs for unemployment diminution in developed, developing, and less developed economies. This corroborates the view of Mitra (2011), cited in Gamede & Uleanya (2019), who posited that the value-adding potentials (contribution) of entrepreneurship to economic growth and development are a result of or stem from knowledge acquisition as well as entrepreneurial training. In essence, in both developed and developing economies, education is viewed as an investment that promotes growth. This demonstrates that when nations work to expand their training systems to support the development of entrepreneurship abilities, they will be able to accelerate their economic development and lessen the rate of unemployment (Abari, Mohammed & Olufemi, 2016). In addition to adding value to the nation's economic growth and development, entrepreneurship training and innovation initiatives are drivers of employment generation via the provision of skills and mindsets essential to generate and sustain businesses, while innovation drives productivity and competitiveness.

Nigeria, a country historically reliant on oil revenues, is grappling with high youth unemployment and regional disparities in economic performance. Particularly in non-oil-producing southwestern states, such as Osun, Ekiti, and Ogun, employment challenges persist despite significant entrepreneurial potential. As global economies pivot toward innovation-driven employment, understanding how entrepreneurial training and innovation drive sustainable employment outcomes becomes critical. This study explores the extent to which entrepreneurial training and innovation drive—two pillars of the human capital and innovation systems theories—can foster sustainable employment in these under-resourced, non-oil-producing regions.

### Objective of the Study

This research is powered by the following objectives:

- a. **General Objective:** To investigate the nexus between entrepreneurial training and diminution of unemployment in Non-Oil Producing western States of Nigeria.
- b. **Specific Objectives:**
  - (i) To determine the correlation between ET and diminution of unemployment in Non-Oil Producing western States of Nigeria.
  - (ii) To find out whether innovation drive contribute to diminution of unemployment in Non-Oil Producing western States of Nigeria.

### Hypotheses of the Study

The pursuit and achievement of the stated objectives of the study is guided by the postulated hypotheses below:

#### Hypothesis 1

$H_0$ : There exists no positive and significant nexus between ET and diminution of unemployment in non-oil-producing western states of Nigeria.

$H_1$ : There exists a positive and significant nexus between ET and diminution of unemployment in non-oil-producing western states of Nigeria.

#### Hypothesis 11

$H_0$ : There is no positive and significant correlation between innovation drive and diminution of unemployment in non-oil-producing western states of Nigeria.

$H_0$ : There is positive and significant correlation between innovation drive and diminution of unemployment in non-oil-producing western states of Nigeria.

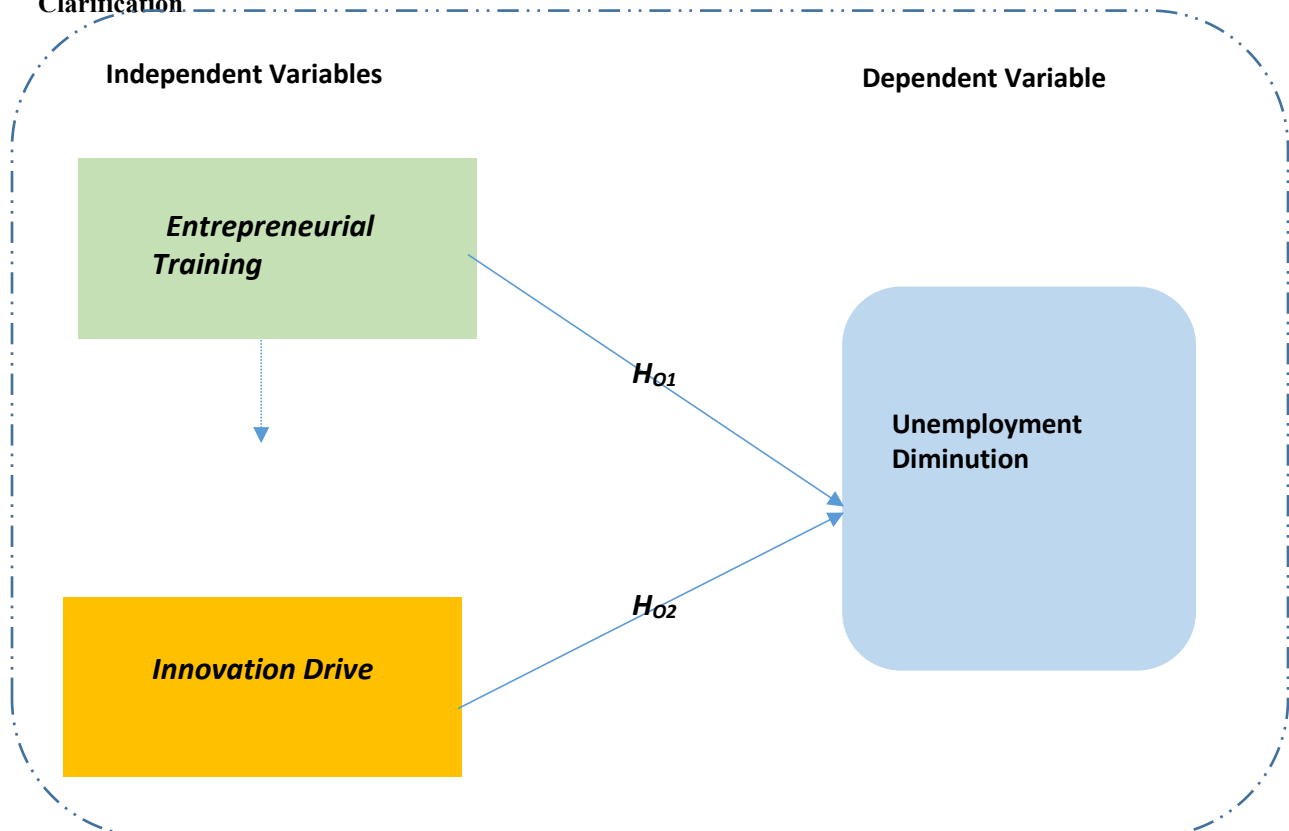
#### Research Questions

The following questions were stated to provide a lucid guidance for the research.

To what extent does ET influence/contribute to diminution of unemployment in non-oil-producing western states of Nigeria?

Does innovation drive contribute to diminution of unemployment in non-oil-producing western states of Nigeria?

### Review of Related Literature and Conceptual Clarification



Source: Author's Conceptualization, 2025.

### **Entrepreneurial Training and Sustainable Employment Outcomes**

Studies have indicated that individuals who are actively involved in skill- and perspicacity-based training usually demonstrate or exhibit higher and better entrepreneurial potential and intentions and are very likely to start and manage their enterprises more effectively and efficiently (Neck & Corbett, 2018). This suggests that fostering these skills in educational and professional settings could significantly enhance the entrepreneurial landscape. By prioritizing such training, we may empower a new generation of innovators and business leaders.

Entrepreneurial training, which other scholars refer to as entrepreneurial education, is skills- and perspicacity-driven; hence, it becomes positively effectuous for participants who sincerely embrace and key into it. In a broader facet, it's shaded as a "capacity" building initiative that liberates individuals or groups of individuals from intellectual and skills debt burdens in developing economies such as Nigeria and other developing nations. These foster a sense of competence and ability that enables participants to be self-reliant and job creators, thereby resulting in unemployment diminution. Entrepreneurial training cuts across the acquisition of business cutting-edge skills, resourceful information, opportunity identification, financial literacy, and risk management. According to Fayolle and Gailly (2015), such training enhances entrepreneurial intention and capacity. In contexts with limited formal employment, these skills are indispensable for job creation. They asserted that these training exercises improve participants' problem-solving, leadership, and decision-making abilities by bridging the gap between academic understanding and actual business difficulties (Rideout & Gray, 2019). According to research, students who participate in experiential learning exhibit better risk-taking skills, more entrepreneurial intents, and increased confidence when starting their own companies (Fayolle & Gailly, 2015).

### **Innovation Drive and Sustainable Employment Outcome**

Innovation drive refers to the capacity and motivation to adopt new ideas, technologies, or processes. Drucker (1985) argues that innovation is the specific instrument of entrepreneurship. In sub-Saharan Africa, innovation has been shown to mediate the impact of training on business scalability and job-wealth creation (Akinwale, 2018). This suggests that fostering innovative practices can significantly enhance the effectiveness of training programs, ultimately leading to more robust economic growth in the region. Apparently, innovation involves more than just introducing new services or products in the business environment; it largely encompasses

embracing or adopting innovative enterprise strategies (models), approaches, and collaborations that support sustainable performance and growth. Enterprises that integrate and incorporate sustainability firmly into their innovation practices are more likely to excel, generate outstanding and better financial results (performance), and add to an environment and society that are healthier and more responsive to emerging trends. By prioritizing innovation, businesses can adapt more readily to market demands and expand their operations. Adding credence to innovation's sterling attributes for driving sustainable growth, Onsel (2015) posits that innovation is not just more closely associated with problem-solving but instead typically related to improving competitiveness and economic success, and it is frequently spurred by technology. This correlation existing between innovation and technology highlights the significance of promoting an environment that promotes creative experimentation and thinking. By investing in research and development, enterprises can improve their skill power and align themselves favorably in an ever-evolving market environment. Nambisan (2015) asserts that the effect of innovation is so significant that a plan or strategy can be evaluated based on how it directs and affects the innovation activities of the firm. This perspective emphasizes the importance of aligning organizational goals with innovative practices to foster growth and adaptability. By doing so, companies can better navigate market changes and enhance their competitive edge.

Innovation is seen as a crucial component of business success. According to Harper and Becker (2013), innovation led to a substantial advance in the actual product, process, or service-preferably one that outperformed the impact of earlier successes. These writers also suggested that innovation promoted sustainable corporate management.

### **Sustainable Employment Outcome**

In the context of this study, sustainable employment is characterized as, or it simply means, sustainable job or employment creation that addresses the economic and financial yearnings of ateeeming populace. It is a job or employment that is created by an individual or group of individuals from empowerments (such as skills training, innovation, and other initiatives) that can stand the test of time with a financial and economic dropdown menu to better the lot of the holder of such job(s). It is a sign of economic and financial fulfillment and independence on the part of such an entrepreneur or enterprise administrator. In a nutshell, this form of job creation (employment) not only aids or betters the lot of the individual but also greatly contributes to the society and economy in general. By encouraging or fostering a climate where skills and innovation thrive, we can pave the way for long-lasting job opportunities

that enhance overall well-being. The following criteria are used to define sustainable employment outcomes (SEO): (i) employment quantity (net job creation/retention); (ii) employment quality (earnings above local living-wage benchmarks, formal contracts, social protection); (iii) skills development and progression pathways; and (iv) inclusivity (youth/women participation). This acknowledges the reality of SMEs while adhering to the principles of decent labor. According to Deeya & Ojha (2025), sustainability employment is the ability of the employee to provide added value for an organization now and in the years to come (future), while also experiencing added value themselves. Van, Karen, Vuuren & Kemps (2017) see sustainable employment as the extent to which employees are able and willing to stay in work over time. Kellard et al. (2001) & Lengnick-Hall, Gaunt & Kulkarni (2008), cited in Aksnes & Ulstein (2023), posit that several aspects related to individual work ability and attributes, employers' attitudes and practices, and labor market characteristics can influence sustainable employment.

### Theoretical underpinnings

The underpinning theories of the study are the human capital theory (HCT) and innovation diffusion theory (IDT). The study incorporates HCT advanced by Becker (1964) and the IDT proposed by Rogers (2003). The underpinning and relevance of these models to this present study is premised on the ground that human capital investments (training) are found to have a positive correlation with improved productivity, agility, and performance versatility, while innovation diffusion facilitates adaptability, flexibility, and competitiveness. These combined models advance that enterprises that give priority attention to employee skills and competence building and embrace innovative cultures (practices) are more likely to excel, respond quickly, and thrive in changing (dynamic) markets. This comprehensive approach not only improves individual effectiveness but also cultivates a culture of ongoing improvement and adaptability. Businesses are therefore more equipped to handle obstacles and take advantage of possibilities in quickly evolving settings. By encouraging a skilled and informed workforce and fostering a notion of innovation, enterprises can position themselves strategically for sustainable progress, growth, and long-term success.

### Methods

This study was designed to assess the contributions of ET and ID to unemployment reduction in selected non-oil-producing western states in Nigeria. That is, to determine whether the above constructs assist in combating the menace of unemployment. To realize this goal, the paper adopted the survey research design.

The design was used owing to the fact that the research revolves around the impression and is targeted at gathering information from selected entrepreneurs of non-oil-producing western states in Nigeria. The description of non-oil-producing states connotes states that have no oil deposits; this also includes states that have no current oil mineral exploration activities taking place in their coverings, and therefore they are not major contributors to Nigeria's crude oil output, such as Lagos, Ogun, Oyo, Osun, and Ekiti. The rationale underpinning the selection of these non-oil-producing states hinges on the notion that youths from the oil-producing states are more concentrated on oil and oil-related dealings, thereby neglecting entrepreneurial ventures. Hence, entrepreneurial activities seem not to thrive well compared to the non-oil-producing actors (states). This disparity suggests that there is a significant opportunity for youth in the non-oil-producing states to engage in diverse economic activities. By fostering entrepreneurial spirit and innovation, these regions could potentially enhance their economic resilience and contribute more substantially to Nigeria's overall development. The population of the study comprised all entrepreneurs in western non-oil-producing states in Nigeria. To arrive at a reliable sample frame, the study applied a non-probabilistic sampling model; thereafter, a purposive sample of 367 entrepreneurs was selected and used for the study. Selected entrepreneurs include both males and females of different enterprise outfits, races, tribes, ages, and educational profiles. The different categories of criteria adopted were apt, as they assisted in generating non-biased responses for ascertaining the influence of ET and ID on unemployment reduction in Nigeria. The study relied on primary data; therefore, a structured and cross-examined questionnaire complemented by in-depth interviews constituted the tools for data gathering. The instrument yielded a Cronbach alpha of 0.8401, a value above the 0.70 threshold, therefore indicating that the instrument is internally consistent and reliable. Both descriptive and inferential statistics were used for data examination. Here, the DS was adopted as a metric of central tendency and variability scrutiny. The DS is composed of mean, standard deviation, minimum, and maximum values. While the inferential statistics took care of the correlational statistical scrutiny. SPSS and STATA were used for descriptive and postulated hypotheses scrutiny.

### Model Specification

The study's composite model specification, which shows the functional relationship between the independent and dependent variables, is provided below.

Unemployment                      Diminution=

f(Entrepreneurship training and Innovation drive).  
eq. 1

The following models were later specified in order to successfully test the hypotheses that were proposed for the study:

#### Model 1

$$\begin{aligned} \text{UempD} &= f(\text{EntT}) \\ \text{UempD} &= \alpha_0 + \beta_1 \text{EntT} + \epsilon_t \end{aligned} \quad \begin{array}{l} \text{eq.2} \\ \text{eq.3} \end{array}$$

#### Model 2

$$\begin{aligned} \text{UempD} &= f(\text{InD}) \\ \text{UempD} &= \alpha_0 + \beta_1 \text{InD} + \epsilon_t \end{aligned} \quad \begin{array}{l} \text{eq.4} \\ \text{eq.5} \end{array}$$

This model is predicated on the idea that innovation and entrepreneurship training in Nigeria's western non-oil-producing states directly contribute to the decline in unemployment.

#### Variable Descriptions

UempD = Unemployment Diminution  
EntT = Entrepreneurship training  
InD = Innovation drive  
 $\alpha_0, \beta_1$  = Regression coefficients of the model  
 $\epsilon_t$  = Error term.

#### Demographic profiles of respondents

**Table 1: Respondents sex profile**

| Sex          | Frequency  | Percentage (%) |
|--------------|------------|----------------|
| Male         | 208        | 60.1           |
| Female       | 138        | 39.9           |
| <b>Total</b> | <b>346</b> | <b>100%</b>    |

Source: SPSS Output 2025.

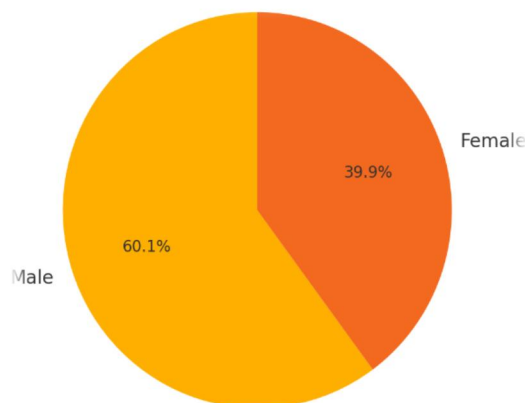


**Figure 1: Pie Chart depicting the Sex profiles of sampled respondents.**

Table 1 and figure 1 above present a copious profiles of studied respondents. From information contained therein, there are more male respondents (208), accounting for 60.1% than their female counterpart (138) representing 39.9%. The implication of this

statistics is that, there are more male entrepreneurs in the Western Nigeria non-oil producing states. This suggests that male individuals dominate the respondent group, indicating possible gender dynamics in the informal business sector surveyed/studied.

**Table 2: Marital Profile of Respondents**

| Marital Status | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| Married        | 267       | 77.2           |
| Single         | 63        | 18.2           |

| Marital Status Frequency Percentage (%) |            |             |
|-----------------------------------------|------------|-------------|
| Others                                  | 16         | 4.6         |
| <b>Total</b>                            | <b>346</b> | <b>100%</b> |

Source: SPSS Output 2025.

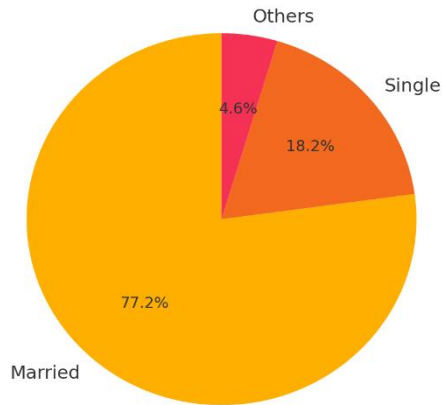


**Figure 11:** Pie Chart indicating the marital dispositions of studied respondents.

It is evident from the above statistics ably conveyed by table 2 and figure 2 that majority of the surveyed respondents (267) representing 77.2% are married, and closely followed by 18.2% single and 4.6% in other

categories, indicating a mature, civilized, and possibly stable business demographic. This could reflect a level of life stability that correlates with longer-term enterprise commitment and engagement.

**Table 3: Respondents Age Profile**

| Age Group Frequency Percentage (%) |            |             |
|------------------------------------|------------|-------------|
| 26–35                              | 179        | 51.7        |
| 15–25                              | 68         | 19.7        |
| 36–45                              | 51         | 14.7        |
| 46–55                              | 28         | 8.1         |
| 56+                                | 20         | 5.8         |
| <b>Total</b>                       | <b>346</b> | <b>100%</b> |

Source: SPSS Output 2025.

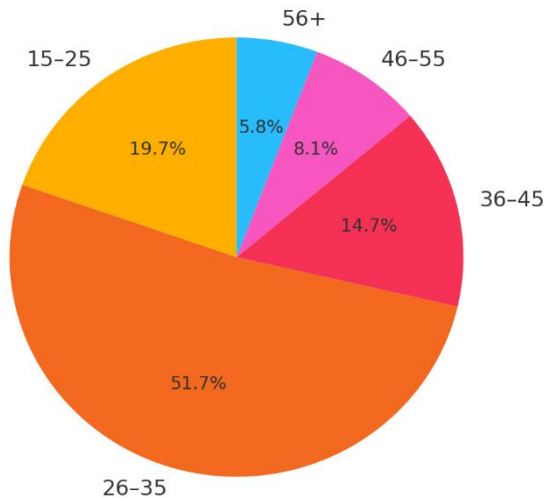


**Figure 111:** Pie Chart indicating the age status of investigated respondents.

The statistics displayed in table/figure 111, showed that more than half of the studied respondents (179) accounting for about 51.7% of the total population, are within the 26–35 age bracket/group, indicating an agile, young, and active/vibrant business enterprise

population. Thereby indicating them as the most economically active age range. This implies that the entrepreneurial landscape of western Nigeria non-oil producing states are largely youth/ young people dominated.

**Table 4: Years in Business/Work Experience**

| Years in Business | Frequency  | Percentage (%) |
|-------------------|------------|----------------|
| 16–25             | 134        | 38.7           |
| 6–15              | 88         | 25.4           |
| 1–5               | 68         | 19.7           |
| 26–35             | 38         | 11.0           |
| 36+               | 18         | 5.2            |
| <b>Total</b>      | <b>346</b> | <b>100%</b>    |

Source: SPSS Output 2025.

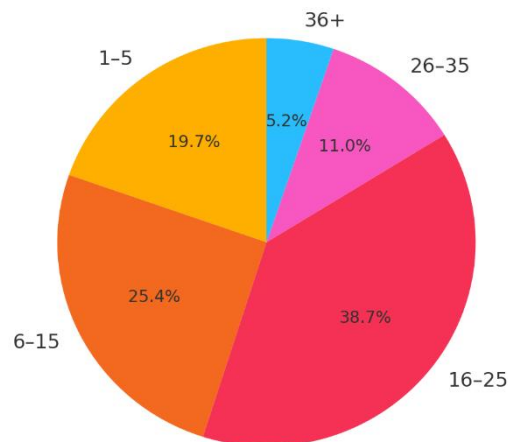


**Figure 1V:** Pie Chart representing sampled respondents' work experience/years in business

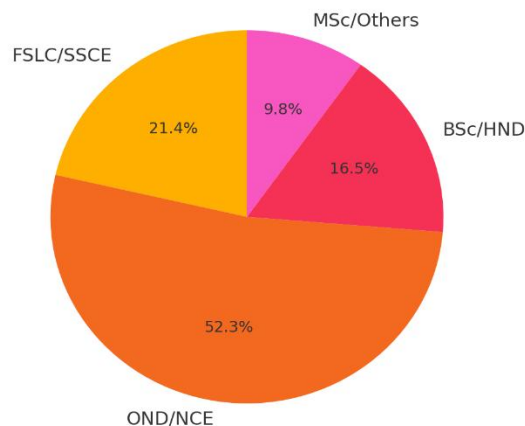
Apparently, the statistical information disclosed in table/figure IV indicated that vast numbers of respondents, representing 38.7% of the outright sampled audience, have been in practice of business for between 16 and 25 years. This is closely followed by those that have been in the practice of enterprises for 6-15 years, representing 25.4%. On the other hand, it was equally ascertained that a very few and limited number have been in the practice and organization of business

ventures for a period of over 36 years, accounting for a paltry 5.2% of the given population. A cursory gaze at the above statistics suggested that experienced enterprise managers and owners dominate the population of entrepreneurs in Nigeria's western non-oil-producing states. This indicates a developed and expanding business environment necessary for a nation-building.

**Table 5: Educational Profile of Respondents**

| Education    | Frequency  | Percentage (%) |
|--------------|------------|----------------|
| OND/NCE      | 181        | 52.3           |
| FSLC/SSCE    | 74         | 21.4           |
| BSc/HND      | 57         | 16.5           |
| MSc/Others   | 34         | 9.8            |
| <b>Total</b> | <b>346</b> | <b>100%</b>    |

Source: SPSS Output 2025.



Table/figure V presents the educational dispositions of respondents of this study. The statistics established that a significant facet number, or vast majority of respondents, reflecting 52.3% of the study's given population, possessed the ordinary national diploma and national certificate for education (OND/NCE) qualifications. This is immediately succeeded by 21.4% accounting for respondents with a first school leaving certificate and senior school certificate examination (FSLC/SSCE). These results largely established the overall education/academic level of the enterprise/business environment studied, copiously

showing that the entrepreneurship landscape of the non-oil-producing western state of Nigeria is moderately schooled and educated, with a very minimal/smaller number holding higher education (university) degrees. It can be deduced from this result that the vast majority of higher education degree/certificate holders in the surveyed environment may not show interest in exploring the economic creams of the informal sector, thereby giving the impression that they're either seeking white-collar jobs or embracing the jakpa syndrome, which may be detrimental to overall nation-building.

**Table 6: Descriptive Statistics of Entrepreneurial Training and Sustainable Employment Outcomes**

| Stats.  | q1       | q2       | q3       | q4       | q5       | q6       |
|---------|----------|----------|----------|----------|----------|----------|
| Mean    | 4.38     | 4.32     | 4.282341 | 4.23     | 4.53     | 4.461208 |
| Std.Dev | .6654743 | .7213733 | .7675819 | .8322119 | .7833619 | .7723765 |
| Max     | 6        | 6        | 6        | 6        | 6        | 6        |
| Min     | 1        | 1        | 1        | 1        | 1        | 1        |

Source: Field Survey, 2025



It is indicated from table 6 above that item 5 accounts for the highest mean score (mean = 4.53), closely followed by item 6 (4.46), while item 7 has the lowest mean score (4.23). Generally, in overall terms, it can be adduced that all items (1, 2, 3, 4, 5, and 6) beat the benchmark or mean threshold of 2.50 rating outcomes. That is, items 1, 2, 3, 4, 5, and 6 have their respective mean scores within the range of 2.50-4.53. The above result establishes that entrepreneurial training is a critical factor that contributes and can be used to drive

sustainable employment outcomes. This further establishes copiously that ET is a contributory variable for unemployment diminution in the non-oil-producing western states of Nigeria. This suggests that enhancing entrepreneurial skills through targeted training programs can significantly reduce unemployment rates in these regions. Consequently, policymakers should prioritize the implementation of such training initiatives to foster economic growth and job creation in the non-oil-producing western states of Nigeria.

**Table 7: Descriptive Statistics of Innovation drive and Sustainable Employment Outcomes**

| Stats.  | Q7       | Q8       | Q9       | Q10      | Q11      | Q12      |
|---------|----------|----------|----------|----------|----------|----------|
| Mean    | 4.443217 | 4.337709 | 4.38     | 4.21     | 4.51     | 4.490151 |
| Std.Dev | .6162832 | .6531375 | .6285843 | .7341154 | .7439628 | .6741643 |
| Max     | 6        | 6        | 6        | 6        | 6        | 6        |
| Min     | 1        | 1        | 1        | 1        | 1        | 1        |

**Source:** Field Survey, 2025

It can be observed from table 7 above that item 11 generated the highest mean score (4.51) and was immediately succeeded by item 12, which churned out a mean score of 4.49, while item 10 generated the lowest mean score (4.21). Without mincing words, in overall perspective, it can be asserted that all items (7, 8, 9, 10, 11, and 12) perform above the suggested mean score threshold of 2.50. That is, items 7, 8, 9, 10, 11, and 12 have their respective mean scores within the range of 2.50-4.53. The outcome of this analysis indicated that innovation drives results in employment generation and unemployment diminution. The findings suggest that fostering innovation can play a

crucial role in creating job opportunities and reducing unemployment rates. Therefore, policymakers and business leaders should prioritize innovative strategies to enhance economic growth and workforce development.

### Testing of Hypotheses and Discussions

The sterling target of the study was to empirical ground truth the Influence of Entrepreneurial Training and Innovation drive on sustainable employment outcomes. That is, whether these two constructs or proxies contributes to unemployment diminution in Nigeria. To achieve the aforementioned, the following hypotheses were postulated and tested.

### Hypothesis 1

**Null:** There exists no positive and significant nexus between ET and diminution of unemployment in non-oil-producing western states of Nigeria.

**Alternative:** There exists a positive and significant nexus between ET and diminution of unemployment in non-oil-producing western states of Nigeria

**Table 8: Correlation of Entrepreneurial Training and Sustainable Employment Outcomes**

|                       | Variables                       |                                              | Entrepreneurial Training | Sustainable Employment Outcomes |
|-----------------------|---------------------------------|----------------------------------------------|--------------------------|---------------------------------|
| <b>Spearman's rho</b> | Entrepreneurial Training        | Correlation Coeff...<br>Sig. (2-tailed)<br>N | 1<br>346                 | .816**<br>.001<br>346           |
|                       | Sustainable Employment Outcomes | Correlation Coeff...<br>Sig. (2-tailed)<br>N | .816**<br>.000<br>346    | 1<br>346                        |

\*\*\*Correlation is significant at the 0.05 level (2-tailed) \*\*

Table 8 established copiously that there exists a positive and significant nexus between Entrepreneurial Training and Sustainable Employment Outcomes ( $r = 0.816$ ,  $n = 346$ ,  $p = 0.001$ ). This finding underscores the importance of providing comprehensive entrepreneurial training programs, as they can lead to improved job security and career advancement

opportunities for participants (entrepreneurs) via technical, adoptive, and ICT skills. These aptitudes enable them create and manage their own enterprises effectively. As a result, investing in such training initiatives could be a crucial strategy for enhancing overall employment sustainability in the area. In a nutshell, ET has a positive contribution to

unemployment diminution. Nonetheless, given that correlation does not equate to causation, a straightforward/simple regression analysis was

employed to assess the influence of ET on sustainable employment outcomes within the non-oil-producing western states of Nigeria

**Table 9 Summary of a Simple Regression Analysis of Entrepreneurial Training and Sustainable Employment Outcomes**

|                                 | R Square | Adjusted R <sup>2</sup> | Coefficient | F-stat | F-sig.            | T-stat | t-sig. | D.W   |
|---------------------------------|----------|-------------------------|-------------|--------|-------------------|--------|--------|-------|
| Sustainable Employment Outcomes | .587     | .497                    | .446        | 19.770 | .000 <sup>b</sup> | 4.703  | .000   | 1.947 |

**Source:** SPSS Output, 2025

Table 9 demonstrated that the coefficient of determination, or R-squared value, for the impact of ET on sustainable employment outcomes was .587. This figure indicates that ET contributes to or explains a 58.7% growth in sustainable employment outcomes (SEO) at the non-oil-producing western states (NOPWS) of Nigeria. Other factors not covered by the model account for the remaining 41.3% of the causes of employment generation at NOPWS of Nigeria. After adjusting for the degree of freedom, the coefficient of determination came out to be .497, or roughly 49.7%. This indicated that ET accounts for approximately 49.7% of systematic variation in SEO after adjustment to degrees of freedom. The regression analysis's Durbin-Watson score of 1.947 indicates that serial autocorrelation is absent, and the model can be relied on/trusted to inform policy decisions pertaining to the subject matter. The results of the regressions showed that, on average, there are statistically significant linear

relationships between ET and SEO at the NOPWS of Nigeria, according to the F-statistic test of 19.770 at prob (Sig) = .000b performed at the 5% level of significance. Likewise, the SEO model's t-statistics of 4.703 at a p-value (sig) of 0.000, which is below the 5% level of significance, showed a significant correlation/nexus between SEO and ET at the NOPWS of Nigeria. This further established that the NOPWS of Nigeria will witness a 44.6% growth in SEOs for every 1% increase/improvement in ET, according to the coefficient of .446.

#### **Hypothesis 11**

**Null:** There is no positive and significant correlation between innovation drive and diminution of unemployment in non-oil-producing western states of Nigeria

**Alternative:** There is a positive and significant correlation between innovation drive and diminution of unemployment in non-oil-producing western states of Nigeria

**Table 10: Correlation of Innovation Drive and Sustainable Employment Outcomes**

|                       | Variables                       |                      | Innovation Drive | Sustainable Employment Outcomes |
|-----------------------|---------------------------------|----------------------|------------------|---------------------------------|
| <b>Spearman's rho</b> | Innovation Drive                | Correlation Coeff... | 1                | .816**                          |
|                       |                                 | Sig. (2-tailed)      |                  | .000                            |
|                       |                                 | N                    | 346              | 346                             |
|                       | Sustainable Employment Outcomes | Correlation Coeff... | .814**           | 1                               |
|                       |                                 | Sig. (2-tailed)      | .000             |                                 |
|                       |                                 | N                    | 346              | 346                             |

\*\*\*Correlation is significant at the 0.05 level (2-tailed) \*\*

Table 10 revealed that there exists a positive and significant correlation between innovation drive and SEO ( $r = 0.814$ ,  $n = 346$ ,  $p = 0.000$ ). This result implies that regions or enterprises that prioritize a strong focus/attention on innovation have a high propensity to experience improved efficiency in search engine optimization and economic boom as well. Therefore, cultivating/fostering an innovative culture and enabling avenues could be key tactics or crucial strategies for improving the impact of innovation and digital skills on entrepreneurial development and, by extension, enhanced dependable job and wealth creation. As such,

investing in such an initiative could be a veritable tool for improving overall employment generation and sustainability in these Nigerian western states. Therefore, innovation drive has a positive impact on unemployment diminution. However, owing to the grounds that correlation does not apparently translate to causation, a simple regression analysis was therefore used to evaluate the impact of innovation drive on sustainable employment outcomes within the non-oil-producing western states of Nigeria using the metrics of R<sup>2</sup> and adjusted R<sup>2</sup>

**Table 11: Summary of a Simple Regression Analysis of Innovation Drive and Sustainable Employment Outcomes**

|                                 | R Square | Adjusted $R^2$ | Coefficient | F-stat | F-sig.            | T-stat | t-sig. | D.W   |
|---------------------------------|----------|----------------|-------------|--------|-------------------|--------|--------|-------|
| Sustainable Employment Outcomes | .472     | .469           | .531        | 19.671 | .000 <sup>b</sup> | 4.667  | .000   | 1.839 |

**Source:** SPSS Output, 2025

The influence of ID on sustainable employment outcomes was shown to have a coefficient of determination (R-squared value) of .472 in Table 11. According to this data, ID is responsible for or explains a 47.2% increase in sustainable employment outcomes (SEO) in Nigeria's non-oil-producing western states (NOPWS). The remaining 52.8% of the reasons of employment creation at NOPWS of Nigeria are due to other factors that are not included in the model. When the degree of freedom was taken into account, the coefficient of determination was .469, or about 46.9%. This showed that, after adjusting for degrees of freedom, ET explains roughly 46.9% of the systematic variation in SEO. The model may be trusted to influence policy decisions related to the topic because serial autocorrelation is absent, as indicated by the regression analysis's Durbin-Watson score of 1.839. The F-statistic test of 19.671 at prob (Sig) = .001b, conducted at the 5% level of significance, indicated that, on average, there are statistically significant linear correlations between ID and SEO at the NOPWS of Nigeria. Similarly, a significant correlation or relationship between SEO and ID at the NOPWS of Nigeria was demonstrated by the SEO model's t-statistics of 4.667 at a p-value (sig) of 0.000, which is below the 5% level of significance. This further established that the NOPWS of Nigeria will witness a 53.1% growth in SEOs for every 1% increase/improvement in ET, according to the coefficient of .531.

### Discussion of Findings

The findings of this research confirm that entrepreneurial training has a significant and positive impact on sustainable employment outcomes in Nigeria's non-oil-producing western states. The high correlation coefficient suggests that well-structured entrepreneurship programs can effectively enhance participants' capacity to establish and manage enterprises, leading to job creation and reduced unemployment. These results align with existing literature emphasizing the importance of skills development in fostering entrepreneurial activity and employment, particularly in regions less reliant on oil revenues. Furthermore, the study establishes that innovation acts as a catalyst for employment by encouraging new business models, improving productivity, and addressing regional economic disparities. The innovation drive was shown to be a

significant predictor of employment expansion, reinforcing the importance of fostering an innovative culture in entrepreneurial ecosystems. The demographic profile indicating a predominantly educated but moderately schooled population suggests opportunities and challenges; while education lays a foundation, targeted entrepreneurship training is vital in translating knowledge into productive activities. The regional focus on non-oil states, which tend to lag behind oil-producing regions in employment, highlights the potential for growth through strategic capacity-building initiatives. These findings support the applicability of human capital theory-investing in skills enhances productivity-and the diffusion of innovation framework-adopting innovative practices sustains competitive advantage and job creation. Overall, the research underscores that concerted efforts in entrepreneurial education and innovation can significantly mitigate unemployment challenges.

### Conclusion and Recommendations

This study concludes that both entrepreneurial training and innovation drive substantially contribute to reducing unemployment and promoting sustainable employment in Nigeria's non-oil-producing western states. The strong positive relationships underscore the necessity for policymakers and stakeholders to prioritize capacity-building initiatives that enhance entrepreneurial competencies and foster innovative business practices. Addressing the regional employment deficit through these interventions can accelerate economic diversification, resilience, and inclusive growth. The following recommendations therefore, were suggested: To effectively reduce unemployment and promote sustainable economic growth in Nigeria's non-oil regions, it is essential for policymakers to develop and implement comprehensive policies that support entrepreneurial training and innovation, ensuring these programs are relevant and accessible. Enhancing curricula to include ICT and technical skills, fostering innovation hubs and access to finance, and integrating entrepreneurial education at all levels are crucial steps. Additionally, encouraging partnerships among government, academia, and the private sector, coupled with establishing robust monitoring and evaluation systems, will ensure continuous improvement, scalability, and sustainability of these initiatives. Collectively, these strategies will strengthen the entrepreneurial ecosystem and drive long-term employment and economic

resilience. Implementing these recommendations could significantly enhance the entrepreneurial ecosystem in Nigeria's non-oil regions, leading to meaningful reductions in unemployment and fostering sustainable economic development.

### List of Abbreviations

DS - Descriptive Statistic

ET - Entrepreneurial Training  
ICT - Information Communication technology  
ID - Innovation Drive  
NOPWS- Non-oil-producing western states  
SEO- Sustainable Employment Outcomes  
SMEs - Small and medium scale enterprises  
SPSS - statistical package for social sciences

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## Organizational Silence and Organizational Justice on Employee Performance of Selected Educational Institutions in Edo State

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### Abstract

*This study examined the influence of organizational silence and organizational justice on employee performance in educational institutions in Edo State. The primary objective was to determine the extent to which organizational silence and justice predict employee performance. A quantitative research design was adopted, utilizing a structured questionnaire to collect data from employees in selected educational institutions. Multiple regression analysis was employed to analyze the relationship between the independent variables organizational silence (OS) and organizational justice (OJ) and the dependent variable, employee performance (EP). The results showed that organizational justice had a statistically significant and positive effect on employee performance ( $B = 0.321$ ,  $\beta = 0.539$ ,  $p = 0.000$ ), indicating that fairness in decision-making, equitable treatment, and transparency significantly enhance employee loyalty and dedication. Conversely, organizational silence (OS) exhibited a positive but statistically insignificant relationship with employee performance (EP), ( $B = 0.106$ ,  $\beta = 0.119$ ,  $p = 0.343$ ), suggesting that perceived support from management alone may not be sufficient to drive employee performance in public settings. The study concludes that organizational justice is a critical driver of employee performance more so than general organizational support. It recommends that public sector managers prioritize transparent and fair organizational practices, train leaders in equitable interpersonal relations, and re-evaluate existing support systems to ensure they are genuinely responsive to employees' needs. These efforts are essential for cultivating a committed and motivated workforce in educational institutions.*

**Keywords:** *Organizational Silence, Employee Performance, Educational Institutions, Regression Analysis, Descriptive statistics*

### Introduction

Organizations increasingly recognize that employees are not just resources but vital agents whose attitudes, voice, and behaviour determine service quality, innovation, and overall institutional success. In educational settings particularly, employee performance is not only reflected in teaching and administrative efficiency, but also in how willing staff are to share ideas, feedback, and concerns. When they do not, a phenomenon known as organizational silence emerges, with serious consequences for organizational effectiveness. (Dhaqane, 2024). Organizational silence

refers to the deliberate withholding by employees of suggestions, concerns, or knowledge about work-related issues. Recent studies show that high levels of silence negatively affect decision making, slow innovation, and reduce employee engagement, leading to poorer performance outcomes. For example, a 2024 study in universities in Mogadishu found that employee voice, fear of retaliation, and communication climate are all significantly related to organizational performance (Dehkharghani, Paul, Maharati & Menzies, 2023). Meanwhile, a literature review by Dehkharghani (2023) highlights that employee silence is

multi-dimensional and consistently associated with negative organizational outcomes (Okafor, Ijemba, & Okolo-Obasi, 2025). In tandem, organizational justice employees' perceptions of fairness in decision-making procedures (procedural justice), resource allocation (distributive justice), and interpersonal treatment (interactional justice) has been shown to influence many outcomes including job satisfaction, loyalty, trust, and performance. A recent study in Southeast Nigeria among deposit money banks demonstrated a strong positive relationship between organizational justice and employee performance (measured in terms of morale, participation, retention) (Goodfaith, Dike, Anetoh, & Eboh, 2021). Also, research in government-owned polytechnics in Anambra State (2021) confirmed that procedural, distributive, and interactional justice each have significant effects on employee performance (Goodfaith, Dike, Anetoh, & Eboh, 2021).

Despite the importance of both constructs, relatively few studies have jointly examined the effects of organizational silence and organizational justice on employee performance in educational institutions, especially in Nigerian contexts like Edo State. Furthermore, the mechanisms through which silence and justice interact does justice reduce silence? Does silence moderate the justice-performance link? under-explored in recent work.

### Statement of the Problem

Employee performance is pivotal for the success and growth of educational institutions. However, organizational silence, characterized by employees withholding ideas, feedback, and constructive criticism, undermines decision-making, innovation, and overall productivity. Similarly, perceived organizational injustice can erode trust, dampen motivation, and discourage employee engagement. Despite the recognized importance of addressing both silence and justice in the workplace, there is insufficient empirical evidence on their combined effects on employee performance, particularly within educational institutions. This study aims to fill this gap.

The main objective of this study is to examine the effect of organizational silence on employee performance in educational in selected educational institutions in Edo State. The study also aimed to examine the effect of organizational justice on employee performance in educational in selected educational institutions in Edo State.

The following hypothesis were formulated to guide the study:

**H<sub>01</sub>:** Organizational silence has no significant effect on employee performance in selected educational institutions in Edo State

**H<sub>02</sub>:** Organizational justice has no significant effect on employee performance in selected educational institutions in Edo State.

## REVIEW OF RELATED LITERATURE

### Conceptual Framework

#### Concept of Organizational Silence

Organizational silence, once loosely equated with loyalty and the absence of voiced concerns, has evolved into a critical concept recognized as detrimental to organizational effectiveness. Earlier perspectives interpreted silence as indicative of harmony or the absence of problems, but contemporary research demonstrates that a climate of silence can hinder organizational success and innovation. Organizational silence is now understood as a collective phenomenon where employees deliberately withhold ideas, opinions, concerns, or information about organizational issues (Güvenç, 2025). Tekin (2024) initially defined silence not merely as an absence of voice but as a complex form of communication involving a spectrum of cognitions and emotions such as objection or endorsement, with motives behind silence varying from fear to resignation. This has been refined by recent studies emphasizing that employee silence manifests in multiple forms accepting/passive silence, defensive silence, and silence for perceived organizational benefit each with different implications for organizational dynamics (Ozan&Yolcu, 2024).

Within educational institutions, organizational silence is particularly impactful. Silence among teachers and staff can arise from fear of reprisal, lack of trust, cultural power distance, and perceptions of organizational injustice, leading to reduced participation in decision-making and innovation (Al-Omari, Al-Nashwan& Ahmed, 2022). This silent behaviour undermines educational goals by limiting the flow of valuable feedback and critical information necessary for school development, employee motivation, and effective adaptation to change (Girgin, 2020; Göven & Şentürk, 2020).

Employees, especially in educational settings, often face the dilemma of whether to voice their observations and concerns or withhold them, knowingly or unknowingly. This withholding of information, or employee silence, diminishes organizational knowledge sharing and hampers performance outcomes. Importantly, the motivation behind silence—whether driven by fear, apathy, or strategic calculation is essential in understanding its consequences (Özkan, 2022).

Organizational silence acts as a barrier to organizational justice perceptions and employee engagement, thereby negatively influencing employee performance, particularly in institutions where open



communication is critical. To counter the effects of silent behaviour, fostering an inclusive communication climate and encouraging employee voice are vital to enhance overall organizational performance and commitment (Kose, 2020; Dehkharghani, 2023). Organizational silence is a nuanced and complex phenomenon characterized by collective employee withholding of information and perspectives that are valuable to organizational decision-making and growth. In educational institutions, addressing the roots and effects of organizational silence is crucial to improving employee performance and achieving institutional goals through enhanced organizational justice and open dialogue.

### **Concept of Organizational Justice**

Organizational justice refers to employees' perceptions of fairness within an organization and its influence on their attitudes and behaviours. It is primarily conceptualized through three core dimensions: distributive justice, procedural justice, and interactional justice (Kuuyelleh, 2025). Distributive justice concerns the perceived fairness in the allocation of outcomes such as pay, promotions, and workload. When employees believe resources are distributed equitably based on effort and contribution, they exhibit higher job satisfaction and organizational commitment (Zhang, 2024). Procedural justice involves the fairness of the processes used to make decisions and allocate resources. Transparent, consistent, and unbiased procedures enhance employees' trust in organizational systems, regardless of the outcome (Danjuma, Wakkala&Zagga, 2025). Interactional justice focuses on the quality of interpersonal treatment employees receive during the execution of procedures, emphasizing respect, honesty, and adequate communication by supervisors (Christianah & Olufunmilola, 2023).

In educational institutions, organizational justice is particularly relevant as fairness in promotions, workload distribution, and communication significantly shape employee motivation and performance. Recent empirical studies indicate that academic and non-academic staff perceiving higher organizational justice demonstrate increased productivity, commitment, and job satisfaction (Kuuyelleh, 2025). Perceived fairness fosters a positive work environment characterized by higher engagement and reduced intentions to leave, which is crucial for sustaining institutional effectiveness (Caminos, 2025; Zhang, 2024). Moreover, organizational justice plays a vital role in employee trust in leadership and willingness to invest discretionary effort. Conversely, perceptions of injustice correlate with negative outcomes such as low morale, absenteeism, and decreased individual and collective performance (Dehkharghani, 2023). These

effects are especially pronounced in educational settings where organizational justice builds not only employee motivation but also supports institutional goals through enhanced cooperation and engagement (Okolocha et al., 2021). Thus, organizational justice is a multidimensional concept encompassing distributive, procedural, and interactional fairness, each significantly influencing employee attitudes and behaviours. Ensuring justice in these areas within educational institutions is critical to fostering employee performance, commitment, and overall institutional success.

### **Concept of Employee Performance**

Employee performance refers to the overall quantitative and qualitative contribution an individual or group makes toward achieving specific organizational tasks and goals. It reflects the degree to which employees meet determined targets and effectively fulfil assigned responsibilities. Performance is not an isolated phenomenon but is influenced by the work environment, managerial practices, and individual factors such as skills, motivation, and job satisfaction (Ijeuru Francis-Odii et al., 2020). Hence, managers must understand the conditions and behavioural factors that foster enhanced employee performance and create a supportive environment that aligns individual and organizational goals (Zhang, 2024). In modern organizational contexts, employee performance encompasses both the quality and quantity of work achieved relative to mutually agreed standards or targets. Effective performance management systems seek to improve individual and collective outputs by integrating performance activities with overall organizational objectives (Dehkharghani, 2023). Employee performance is closely linked to job satisfaction and the perceived fairness of rewards and recognition, which together influence employees' willingness to apply their abilities and effort.

Recent studies focusing on educational institutions highlight the significant effects of organizational silence and justice on employee performance. Organizational silence, characterized by employees withholding ideas or concerns, often leads to reduced productivity and low morale among academic staff (Alenezi, 2023). Conversely, organizational justice, through fairness in resource distribution, decision-making processes, and respectful interpersonal treatment, fosters trust and motivation, which in turn improve performance outcomes (Kuuyelleh, 2025).

Empirical research in educational settings underscores that the presence of open communication, supportive leadership, and perceived organizational fairness significantly enhances employee performance. When employees feel heard and fairly treated, their engagement and productivity increase, contributing



positively to institutional effectiveness (Francis-Odii et al., 2020). Therefore, promoting an organizational climate that reduces silence and advances justice is crucial in improving employee output and achieving educational institutions' objectives.

### Theoretical Review

Social Exchange Theory (SET), originally proposed by Blau (1964), emphasizes the reciprocal nature of relationships between employees and their organizations. Employees invest their time, skills, and commitment in exchange for rewards such as pay, recognition, job security, and growth opportunities. When this exchange is perceived as fair and balanced, employees are more likely to reciprocate with positive attitudes, open communication, and improved performance (Emmanuel & Al-Janat, 2022). Conversely, when employees feel that their contributions are undervalued or ignored, they may withdraw effort, disengage, and choose silence over voicing concerns or ideas. This withdrawal not only disrupts the reciprocity balance but also diminishes innovation, motivation, and overall productivity (Khalid & Ahmed, 2021).

Organizational silence can manifest in two dimensions. The first involves silence directed toward the organization, where employees deliberately withhold feedback or suggestions that could enhance institutional processes. The second dimension involves silence toward individuals, where employees avoid expressing concerns or criticisms about specific colleagues or leaders. Both forms of silence erode trust, psychological safety, and ultimately, employee performance (Abubakar & Mahmood, 2023). From the lens of Social Exchange Theory, silence undermines the principle of reciprocity, as employees perceive little benefit in engaging in open dialogue when organizational responsiveness or fairness is absent. Organizational Justice Theory further enriches the understanding of employee voice and silence. This theory posits that employees' perceptions of fairness significantly shape their behaviour and performance outcomes (Pirzada et al., 2020). Organizational justice is typically divided into three dimensions:

- Distributive Justice – which refers to employees' perceptions of fairness in the allocation of outcomes such as pay, promotions, and recognition. When employees believe rewards are equitably distributed, they are more likely to voice constructive opinions and remain committed to organizational goals (Rahman et al., 2021).
- Procedural Justice – which emphasizes the fairness and transparency of organizational decision-making processes. Employees are more willing to contribute ideas and feedback when procedures are perceived as

unbiased, consistent, and participatory (Wu et al., 2022).

Interactional Justice – which centres on the quality of interpersonal treatment, communication, and respect that employees experience from supervisors and colleagues. Respectful interactions encourage employees to express themselves openly, leading to improved trust, commitment, and performance (Agarwal & Sajid, 2021).

In educational institutions, where knowledge-sharing and innovation are critical, the absence of organizational justice often fosters silence. Employees may avoid expressing ideas due to fear of negative consequences or perceptions of futility, which stifles growth and reduces institutional effectiveness (Chaudhary et al., 2023). On the other hand, when justice is present across distributive, procedural, and interactional dimensions, employees are more likely to feel psychologically safe, empowered, and motivated to contribute, thereby enhancing performance.

From the reviewed theories, it is evident that organizational silence has a negative effect on employee performance, as it reduces motivation, collaboration, and creativity. Conversely, fostering a culture of fairness, transparency, and open communication promotes psychological safety, strengthens employee commitment, and enhances performance outcomes. For educational institutions in Edo State, addressing silence through justice-driven policies and leadership practices is essential for long-term effectiveness and sustainability.

### Empirical Review

Recent empirical studies consistently highlight the negative impact of organizational silence on employee performance. For instance, Shojaie, Matin, and Barani (2021) demonstrated that silence within organizations contributes to absenteeism, decreased morale, and overall poor organizational outcomes. Similarly, Osboei and Nojabae (2023) found that fear of negative repercussions remains a primary reason employees withhold valuable information, leading to inefficiencies, reduced innovation, and weakened organizational effectiveness. Leadership style and the communication climate have been identified as critical factors influencing whether employees feel safe to voice concerns or remain silent (Ikon & Chukwu, 2024; Naquib, Muhammad, and Hafiz, 2022). Within educational institutions specifically, employee silence has been shown to hamper both academic and administrative innovation, thereby limiting institutional growth and adaptability (Yıldız, 2021; Frances, Cindy & Bishara, 2023).

In contrast, organizational justice has been found to have a powerful and positive influence on employee engagement and performance. Studies by Colquitt et al.

(2020) and Gupta and Shaw (2022) emphasize that employees' perceptions of fairness in resource allocation, processes, and interpersonal treatment significantly enhance productivity, loyalty, and openness in communication. Cohen-Charash and Spector's (2021) meta-analysis confirms strong links between distributive, procedural, and interactional justice and outcomes such as job satisfaction, organizational commitment, and performance. Furthermore, Colquitt (2022) argues that justice perceptions cultivate a sense of belonging and encourage organizational citizenship behaviour, which in turn mitigates the detrimental effects of organizational silence. Collectively, these empirical findings illustrate that while organizational silence poses a substantial threat to employee performance, organizational justice can serve as a critical mitigating factor. The interplay between these constructs underscores the importance of fostering fair and transparent organizational practices alongside a communication culture that values employee voice. This nexus presents a compelling area for empirical investigation within educational institutions in Edo State, where performance is closely tied to employee motivation, communication, and perceptions of fairness.

## Methodology

This study adopted a quantitative research design using a descriptive and exploratory survey method to investigate the effect of organizational silence and organizational justice on employee performance in selected educational institutions in Edo State, Nigeria. The choice of this design is justified by its suitability for describing existing phenomena, exploring relationships among variables, and enabling generalization from a sample to the wider population. The study purposively select 50 (fifty) academic and 50 (fifty) non-academic staff from selected universities, polytechnics, and colleges of education through random sampling across the government-owned tertiary institutions in Edo state, Nigeria, namely, University of Benin, Benin-City, Ambrose Alli University, Ekpoma, Auchi Polytechnic, Auchi., College of Education, Ekiadolor, Edo State. The decision to include both categories of staff was to ensure that the perspectives of individuals directly involved in teaching, research, and administration, as well as those handling supportive and managerial functions, were adequately captured. The distribution of the population for the study is captured below:

**Table 1: Population of the Study**

| S/N | Name of Institution                        | Academic Staff | Non Academic Staff | Total      |
|-----|--------------------------------------------|----------------|--------------------|------------|
| 1   | University of Benin, Benin City, Edo State | 17             | 15                 | 32         |
| 2   | Ambrose Alli University, Ekpoma            | 15             | 15                 | 30         |
| 3   | Auchi Polytechnic, Auchi                   | 12             | 11                 | 23         |
| 4   | College of Education, Ekiadolor            | 6              | 9                  | 15         |
|     | <b>TOTAL</b>                               | <b>50</b>      | <b>50</b>          | <b>100</b> |

*Source: Field Survey, 2025*

A simple random sampling technique was used to ensure diverse representation. A structured questionnaire with three sections was used for data collection: (demographic information, organizational silence, organizational justice and employee performance (measured using a 5-point Likert scale, e.g. 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree). Data analysis was conducted using SPSS Version 25.0, with descriptive statistics for summarizing responses and multiple

regression analysis for testing the relationship between organizational silence and organizational justice on employee performance. The model was tested at a 5% significance level ( $p < 0.05$ ). Ethical considerations were to ensure anonymity, confidentiality, and voluntary participation. This methodology provided a structured and reliable approach to understand the effects of organizational silence and organizational justice on employee performance in educational institutions.

## Presentation of Data and Analysis

### Question 1- 5

**Table 2: Organizational silence (Independent Variable – X<sub>1</sub>): (Measures the extent to which employees withhold ideas, feedback, or concerns in the workplace.)**

| Statements                                                                                          | SA | A  | U  | DA | SD | STD   | M     |
|-----------------------------------------------------------------------------------------------------|----|----|----|----|----|-------|-------|
| I often choose not to speak up about work-related issues due to fear of negative consequences.(OS1) | 10 | 29 | 49 | 9  | 3  | 18.92 | 20.00 |
| I feel that my opinions and suggestions are not valued by my organization.(OS2)                     | 9  | 31 | 26 | 22 | 12 | 9.30  | 20.00 |
| I hesitate to provide feedback because I believe it will not lead to any changes.(OS3)              | 24 | 36 | 22 | 12 | 6  | 11.58 | 20.00 |
| I avoid reporting problems or mistakes because of possible repercussions. (OS4)                     | 12 | 30 | 24 | 21 | 13 | 7.58  | 20.00 |
| My organization discourages open discussions about workplace challenges.(OS5)                       | 24 | 39 | 20 | 12 | 5  | 12.92 | 20.00 |

*Source: Field Survey, 2025*

### Descriptive Analysis of organizational support (OS1–OS5)

**Mean scores** across all five items are consistent at 20.00, suggesting a balanced perception of support across the board. **Standard deviations**, however, vary: OS1: 18.92 (very high variability). Implication:

Despite similar average ratings, OS1 in particular shows a high deviation, indicating a split among respondents—some may perceive strong support, others very little. This inconsistency may relate to selective recognition, unequal access to resources, or leadership gaps.

### Questions 6-10

**Table 3: Organizational Justice (Independent Variable – X<sub>2</sub>): (Measures how matters relating to employees are handled with fairness and justice)**

| Statements                                                                          | SA | A  | U  | D  | SD | STD   | M     |
|-------------------------------------------------------------------------------------|----|----|----|----|----|-------|-------|
| I believe that my organization treats all employees fairly.(OJ1)                    | 11 | 30 | 25 | 21 | 13 | 8.00  | 20.00 |
| Decisions about promotions and rewards are made impartially(OJ2)                    | 24 | 36 | 22 | 12 | 6  | 11.58 | 20.00 |
| I am treated with respect and dignity by my supervisors.(OJ3)                       | 12 | 30 | 24 | 21 | 13 | 7.58  | 20.00 |
| Procedures used to make work-related decisions are consistent and transparent.(OJ4) | 24 | 3  | 20 | 12 | 5  | 9.15  | 20.00 |
| I feel that my contributions to the organization are recognized and valued.(OJ5)    | 11 | 30 | 25 | 21 | 13 | 8.00  | 20.00 |

*Source: Field Survey, 2025*

## Descriptive Data Analysis of Organizational Justice (OJ1–OJ5)

**Mean scores** for OJ1, OJ2, OJ3, and OJ5 are all consistent at **20.00**, while OJ4 shows a lower mean of **12.80**. This suggests that respondents had a generally moderate perception of justice within the organization across most indicators. **Standard deviation (SD)** ranges from **7.58 to 11.58**, with the highest dispersion in **OJ2 (11.58)** and **OJ4 (9.15)**. This indicates variability in how justice is perceived, especially in OJ2 (perhaps procedural justice or fairness of processes) and OJ4 (possibly related to equitable treatment or resource allocation). **Implication:** Organizational justice is moderately rated, but the spread in perception suggests inconsistencies in how different aspects of justice are experienced among sta

## Questions 11-15

**Table 4: Employee Performance (Dependent Variable - Y<sub>1</sub>):** *(Measures how effectively employees complete tasks and contribute to organizational goals.)*

| Statements                                                                       | SA | A  | U  | D  | SD | STD   | M    |
|----------------------------------------------------------------------------------|----|----|----|----|----|-------|------|
| I consistently complete my tasks on time and meet performance expectations.(Q11) | 37 | 30 | 13 | 19 | 1  | 14.14 | 20.0 |
| My work contributes to the overall success of my organization(Q12)               | 40 | 35 | 16 | 9  | 0  | 17.04 | 20.0 |
| I feel motivated to put extra effort into my job responsibilities(Q13)           | 42 | 27 | 17 | 12 | 2  | 15.25 | 20.0 |
| I receive constructive feedback that helps improve my performance(Q14)           | 39 | 36 | 13 | 9  | 3  | 16.40 | 20.0 |
| I am able to work efficiently, even under pressure.(Q15)                         | 18 | 32 | 20 | 18 | 12 | 7.35  | 20.0 |

*Source: Field Survey, 2025*

## Descriptive Data Analysis of Employee Performance (EP1–EP5)

**Standard deviations** for EP1–EP5 range from **7.35 (EP5)** to **17.04 (EP2)**. These values indicate substantial variability in perceived employee productivity. The highest variation is observed in EP2 (SD = 17.04), potentially reflecting mixed views on certain performance criteria (e.g., task completion or output quality). **Implication:** While specific mean values weren't provided, the high variation implies differing levels of productivity across employees likely influenced by motivation, work environment, or support.

**Overall Observations:** Homogeneity vs. Variability: The data shows relatively uniform mean scores but high variability in responses, especially in EP and OS dimensions. Lowest Mean: OJ4 (12.80), suggesting a need for improvement in that particular area of justice. Most Consistent: OJ3 and OS4 (SD = 7.58), indicating stable perceptions among respondents. Most Divisive: OS1 and EP2 (SD = 18.92 and 17.04 respectively), warranting further qualitative inquiry.

## Testing of the Hypothesis

**(H<sub>0</sub>):** Organizational silence does not significantly affect employee performance in educational institutions in Edo State

**Table 5 :Model Summary<sup>b</sup>**

| Model | R                 | R <sup>2</sup> | Adj. R <sup>2</sup> | Std.Error Of the estimate | R <sup>2</sup> change | Change Statistics |     |     |               | Durbin-Watson |
|-------|-------------------|----------------|---------------------|---------------------------|-----------------------|-------------------|-----|-----|---------------|---------------|
|       |                   |                |                     |                           |                       | F Change          | df1 | df2 | Sig.of Change |               |
| 1     | .636 <sup>a</sup> | .405           | .392                | .44216                    | .405                  | 32.951            | 2   | 97  | .000          | 1.655         |

Source: SPSS 25.0 Data Output

a. Predictors: ( Constant) OJ, OS

b. Dependent variable : EP

## Summary Interpretation

0.636: This indicates a moderate to strong positive correlation between the independent variables

(Organizational Justice [OJ] and Organizational Silence [OS]) and the dependent variable (Employee Performance [EP]). It suggests that changes in OJ and OS are moderately to strongly associated with changes in EP.  $R^2 = 0.405$ : About 40.5% of the variation in employee performance is explained by the combination of OJ and OS. This is a substantial portion, suggesting these factors are key determinants of performance. Adjusted  $R^2 = 0.392$ : After adjusting for the number of predictors, about 39.2% of the variance

in EP is still explained. This indicates that the model is stable and not overfitted. Standard Error of the Estimate = 0.44216: The average deviation of the observed EP values from the predicted values is relatively low, meaning the model's predictions are fairly accurate. Durbin-Watson = 1.655: This value suggests there is no significant autocorrelation in the residuals, and therefore the assumption of independence of errors is met.

**Table 6: ANOVA<sup>a</sup>**

| Model        | Sum of Squares | df | Mean Square | F      | Sig.              |
|--------------|----------------|----|-------------|--------|-------------------|
| 1 Regression | 12.884         | 2  | 6.442       | 32.951 | .000 <sup>b</sup> |
| Residual     | 18.964         | 97 | 0.196       |        |                   |
| Total        | 31.848         | 99 |             |        |                   |

Source: SPSS 25.0 Data Output

- Dependent variable : EP
- Predictors (Constant) OJ, OS

7) = 32.951,  $p = 0.000$ : The F-test result is highly significant, indicating that the model, which includes OJ and OS, significantly predicts employee performance. In other words, at least one of the predictors has a non-zero regression coefficient

## ANOVA Interpretation

**Table 7: Coefficients<sup>a</sup>**

| Model      | Unstandardized Coefficients |           | Standardized Coefficients | T     | Sig.  |
|------------|-----------------------------|-----------|---------------------------|-------|-------|
|            | B                           | Std Error | Beta                      |       |       |
| (Constant) | 2.408                       | .242      |                           | 9.971 | 0.000 |
| <b>OS</b>  | 0.106                       | .111      | .119                      | .954  | 0.343 |
| <b>OJ</b>  | .321                        | .074      | .539                      | 4.321 | 0.000 |

Source: SPSS 25.0 Data Output

- Dependent Variable: EP

Organizational Silence (OS) and Organizational Justice (OJ) on the dependent variable, Employee Performance (EP):

### Unstandardized Coefficients (B):

Constant (2.408):

This is the expected value of EP when both OS and OJ are zero. It's the baseline level of employee performance.

OS (0.106): A one-unit increase in Organizational Silence results in a 0.106 unit increase in Employee Performance, holding Organizational Justice constant. However, the effect is not statistically significant ( $p = 0.343 > 0.05$ ), meaning there's no reliable evidence that silence impacts performance.

OJ (0.321): A one-unit increase in Organizational Justice leads to a 0.321 unit increase in Employee Performance, holding OS constant. This effect is statistically significant ( $p = 0.000 < 0.05$ ).

### Standardized Coefficients (Beta):

These values allow comparison of the relative strength of each predictor:

OS Beta = 0.119

Indicates a weak, positive, but insignificant influence on employee performance.

OJ Beta = 0.539

Shows a strong and significant positive impact on employee performance. OJ is clearly the more influential factor between the two.

### t-values and Significance (Sig.):

OS:  $t = 0.954$ , Sig. = 0.343 The predictor is not significant. OJ:  $t = 4.321$ , Sig. = 0.000 is Highly significant, meaning OJ has a real, measurable effect on EP.

Conclusion of Coefficient Analysis: Organizational Justice (OJ) significantly and positively influences employee performance. Organizational Silence (OS) shows a weak and statistically insignificant influence. Management should focus more on promoting fairness and justice in the workplace as a

driver of employee performance, while not ignoring the potential long-term effects of unchecked silence.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

$$Y = 2.408 + 0.106X_1 + 0.321X_2$$

Y= Employee Performance (Dependent variable)

X<sub>1</sub> =Organizational silence (Independent variable)

X<sub>2</sub> = Organizational Justice (Independent variable)

β<sub>0</sub>= Intercept (baseline employee performance when organizational silence is zero)

β<sub>1</sub>= Coefficient measuring the effect of organizational silence on employee performance

β<sub>2</sub>= Coefficient measuring the effect of organizational justice on employee performance

ε = Error term (Captures unexplained variations)

### Discussion of Findings

The study examined the effect of organizational silence on employee performance in selected educational institutions in Edo State. The findings reveal that **organizational justice (OJ)** is a significant predictor of employee commitment, with a standardized coefficient (Beta) of 0.539 and a statistically significant p-value of 0.000. This indicates that fairness in the workplace, including distributive, procedural, and interactional justice, plays a critical role in fostering employee dedication.

This result aligns with recent evidence from public universities in Ethiopia, where organizational justice positively influenced employee commitment, with job satisfaction partially mediating the relationship. (Gollagari, Birega, & Mishra, 2024) Similarly, studies in banking in Nigeria show strong and significant relationships between perceptions of organizational justice (especially distributive and procedural) and affective commitment. (Ogunkoya, Soremekun, Banjo, & Fadeyi, 2024)

On the other hand, **organizational silence (OS)** showed a positive but statistically insignificant influence on employee commitment (Beta = 0.119, p = 0.343). This contradicts findings in the Greek public sector, where organizational silence was shown to negatively affect all dimensions of organizational commitment. (Efthymiopoulos, Goula, & Psychogios, 2024) The insignificance in the current context may be due to other intervening variables such as leadership style or communication flow, which were not controlled in this study.

Moreover, the stronger influence of OJ over OS may reflect employees' higher sensitivity to fairness and equity in public institutions where bureaucracy and perceived favouritism are common. This is supported by extended longitudinal evidence from Hong Kong in a "job demands–resources" framework, showing that all dimensions of organizational justice (procedural, distributive, informational, interpersonal) measured at baseline had direct positive associations with affective commitment one year later. (Ho, 2025)

### CONCLUSION

This study concludes that organizational justice is a more powerful and significant determinant of employee commitment than organizational silence in public educational institutions. While organizational support or silence behaviours are relevant, it is the perception of fairness and justice that predominantly drives employees to remain loyal, engaged, and committed to organizational goals.

### RECOMMENDATIONS

Strengthen fairness in procedures and policies – Management should ensure transparent and equitable treatment in resource allocation and decision-making processes.

Promote interactional justice – Training managers on respectful and dignified communication can enhance trust and reduce workplace resentment.

Re-evaluate support mechanisms – Although OS was not statistically significant, it's important for the organization to reassess whether existing support systems are genuinely perceived as beneficial or merely symbolic.

- iv. Further research – Future studies should explore mediating variables such as job satisfaction, leadership style, or psychological safety that could influence the OS-commitment relationship.

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## Sustainability Reporting and Corporate Financial Performance of Listed Oil and Gas Firms in Nigeria

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### Abstract

*This study investigated the impact of sustainability reporting on corporate financial performance of listed oil and gas firms in Nigeria between 2015 and 2024, with return on equity (ROE) as the performance proxy. Using an ex-post factor design and purposive sampling, data were collected from annual and sustainability reports of ten listed firms and analyzed using panel regression models with random effects. The results indicated that energy intensity (EI) positively and significantly improved ROE, reflecting the profitability benefits of energy efficiency. Water management rate (WMR) also exerted a positive and significant effect, suggesting that responsible water use strengthened financial outcomes and stakeholder legitimacy. In contrast, air pollutant emissions intensity (APEI) had a negative and significant effect on ROE, confirming that higher emissions damaged profitability through compliance costs and reputational risks. Greenhouse gas emissions intensity (GHGI), however, was positive but statistically insignificant, implying that climate-related initiatives did not yet produce short-term financial benefits. These findings supported both the Triple Bottom Line and Legitimacy theories, highlighting how sustainability practices influenced profitability, stakeholder trust, and long-term corporate resilience. The study concluded that sustainability reporting played a critical role in shaping financial performance and recommended investment in energy and water efficiency, stronger emission control, and more credible greenhouse gas reporting. Overall, the research emphasized that integrating sustainability practices into business strategies was vital for achieving both environmental stewardship and financial success in Nigeria's oil and gas sector.*

**Key Words:** Sustainability reporting, Energy intensity, Water management rate, Air pollutant emissions intensity, Greenhouse gas emissions intensity, Return on equity, Corporate financial performance, Oil & Gas firms.

### Background to the Study

The global focus on sustainable development has significantly increased the importance of environmental performance metrics such as energy intensity, water management rate, air pollutant emissions intensity, and GHG emissions intensity. These metrics are now seen as crucial indicators of corporate environmental impact and operational efficiency. In Nigeria, where industrial and extractive activities dominate, integrating such environmental measures into sustainability reporting has gained growing attention from both academics and regulators. Recent studies indicate that carbon and GHG emissions disclosures may reduce market competitiveness among non-financial listed firms in Nigeria (Agbo et al 2024).

Similarly, environmental investment disclosures have shown mixed effects on financial performance, with water protection disclosures found to enhance performance, while air protection disclosures produced negative outcomes (Emenyi, 2024).

Alongside these trends, Nigeria's regulatory environment is undergoing significant transformation. In March 2024, the government announced that large firms must begin mandatory eco-friendly and climate-related disclosures by 2027, while smaller firms were given until 2030 to comply (Reuters, 2024). This regulatory momentum highlights the pressing need for empirical studies that can clarify how sustainability performance translates into financial outcomes, especially in industries associated with significant

environmental externalities. Yet, empirical evidence directly linking carbon accounting and financial performance among listed manufacturing firms remains limited. A 2025 study revealed that although carbon accounting influences return on assets, the relationship was not statistically significant (Appah et al 2025). This points to the need for broader inquiry into how environmental intensity metrics beyond carbon accounting shape profitability, particularly when profitability is measured through return on equity.

In the context of Nigeria's oil and gas sector, the environmental burdens are extensive, including high levels of emissions and water contamination, making the industry a focal point for sustainability research (Popoola & Onmonya, 2024). Given its central role in the national economy and its exposure to global scrutiny, it is crucial to examine how environmental stewardship in this sector intersects with financial performance outcomes such as return on equity. Therefore, situating sustainability reporting proxies such as energy intensity, water management rate, air pollutant emissions intensity, and GHG emissions intensity alongside corporate financial performance of oil and gas firms addresses an important research gap. This study seeks to provide fresh insights into how environmental intensity measures influence financial performance within high-impact industries, in line with emerging regulatory expectations and the rising investor demand for credible sustainability reporting.

### Statement of the Problem

The increasing global and national demand for sustainable business practices has drawn attention to how environmental performance measures such as energy intensity, water management rate, air pollutant emissions intensity, and GHG emissions intensity influence corporate financial performance, particularly return on equity among oil and gas firms in Nigeria. However, existing findings in the literature remain inconclusive and inconsistent. Popoola and Onmonya (2024) reported that environmental disclosure enhanced ROE but negatively affected other profitability indices, while Soomiyol et al (2023) observed only a weak link between sustainability practices and financial performance in listed firms. Likewise, Appah et al (2025) showed that carbon accounting had no significant impact on profitability indicators, pointing to the limitations of aggregated environmental disclosures in explaining financial outcomes. Emenyi (2024) further revealed that water protection disclosures improved financial performance whereas air protection disclosures diminished it, reflecting heterogeneous effects of different environmental dimensions. These divergent findings expose a clear research gap requiring the use of advanced econometric techniques such as panel

regression to control for firm-level heterogeneity and time dynamics, thereby providing more precise evidence of how sustainability proxies affect ROE in the Nigerian oil and gas sector. Addressing this issue is timely, given the regulatory push for mandatory climate-related reporting and the heightened expectations of investors for credible linkages between sustainability reporting and financial performance in environmentally sensitive industries.

### Research Objectives

The primary objective of this study is to examine the relationship between sustainability reporting and corporate financial performance of listed oil and gas firms in Nigeria. The specific objectives are to:

- To examine the effect of energy intensity on the return on equity of listed oil and gas firms in Nigeria.
- To assess the relationship between water management rate and the return on equity of listed oil and gas firms in Nigeria.
- To investigate the impact of air pollutant emissions intensity on the return on equity of listed oil and gas firms in Nigeria.
- To evaluate the influence of GHG emissions intensity on the return on equity of listed oil and gas firms in Nigeria.

### Research Hypotheses

**H0<sub>1</sub>:** Energy intensity has no significant effect on the return on equity of listed oil and gas firms in Nigeria.

**H0<sub>2</sub>:** Water management rate has no significant relationship with the return on equity of listed oil and gas firms in Nigeria.

**H0<sub>3</sub>:** Air pollutant emissions intensity has no significant impact on the return on equity of listed oil and gas firms in Nigeria.

**H0<sub>4</sub>:** GHG emissions intensity has no significant influence on the return on equity of listed oil and gas firms in Nigeria.

### Conceptual Review

#### Sustainability Reporting

Sustainability reporting in Nigeria has gradually emerged as an important dimension of corporate disclosure, aimed at integrating environmental, social, and governance considerations into financial accountability. Scholars argue that the practice enhances transparency, improves stakeholder trust, and promotes long-term value creation, especially in high-impact industries such as oil and gas and manufacturing (Asuquo & Dada, 2022). Although frameworks such as the Global Reporting Initiative and the IFRS sustainability disclosure standards have influenced Nigerian firms, adoption remains inconsistent across sectors due to weak institutional enforcement, limited technical capacity, and varying

levels of awareness (Otalor, 2025). Recent evidence shows that while some listed firms disclose information on energy usage, waste management, and emissions, the depth and comparability of these disclosures remain limited, reflecting a fragmented approach to sustainability reporting in the country (Nwekwo et al 2025).

Linking sustainability disclosures to financial performance has further highlighted both opportunities and gaps. While some empirical studies find positive associations between sustainability reporting and firm performance, others reveal insignificant or even negative relationships depending on the dimensions measured, pointing to the heterogeneous nature of sustainability practices (Agbakwuru, 2025). This suggests that reporting in Nigeria is still evolving, shaped by global frameworks but hindered by contextual realities such as regulatory weaknesses and the dominance of extractive industries. As the Financial Reporting Council of Nigeria gradually integrates sustainability guidelines, and with increasing investor interest in ESG data, the framework of sustainability reporting in Nigeria is moving from voluntary philanthropy-based disclosures toward more structured and strategic reporting. However, achieving consistency and comparability will require stronger enforcement, harmonization of frameworks, and capacity building for firms to fully embed sustainability reporting as a driver of corporate accountability and performance.

**Energy Intensity (EI):** Energy intensity, which reflects the amount of energy consumed per unit of output, is a critical sustainability metric for oil and gas firms in Nigeria due to the sector's heavy reliance on fossil fuels and its significant contribution to greenhouse gas emissions. High energy intensity signals inefficiency and increased operational costs, while improvements in energy management can enhance profitability and environmental performance (Asuquo & Dada, 2022). Recent scholarship emphasizes that addressing energy intensity is essential for Nigerian firms to align with global sustainability standards and reduce their carbon footprint (Nwekwo et al 2025). However, despite rising awareness, structural inefficiencies and weak regulatory enforcement continue to limit progress in achieving energy-efficient operations (Otalor, 2025).

**Water Management Rate (WMR):** Water management rate represents the efficiency of water use, recycling, and contamination control within oil and gas operations in Nigeria, a sector notorious for intensive water use and recurrent pollution of local water bodies. In the Niger Delta, oil exploration and spills have severely compromised water quality and community

access to clean water, exacerbating environmental and social challenges (Environmental issues in the Niger Delta, 2025). Nigeria has substantial surface and groundwater resources, but these are imperiled by oil-related contamination and weak regulatory oversight (Omokaro et al., 2024). Consequently, enhancing water management practices through strategies such as improved recycling, stricter effluent standards, and robust monitoring is critical for reducing environmental degradation and reinforcing sustainable operations in oil and gas firms.

**Air Pollutant Emissions Intensity (APEI):** Air pollutant emissions intensity, which measures the volume of pollutants released relative to output, is a crucial sustainability concern in Nigeria's oil and gas sector due to widespread gas flaring, particulate matter emissions, and volatile organic compounds that degrade air quality and harm human health. The Niger Delta remains the most affected, where continuous flaring has been linked to respiratory illnesses and environmental degradation (Environmental issues in the Niger Delta, 2025). Studies further note that although Nigeria has policies against routine flaring, enforcement remains weak, resulting in persistently high emissions intensities across firms (Akinbami et al 2021). Reducing air pollutant emissions intensity therefore requires stricter regulatory oversight, improved technology adoption, and stronger sustainability commitments from oil and gas operators.

**Greenhouse Gas Emissions Intensity (GHGI):** GHG emissions intensity, which captures the volume of greenhouse gases emitted per unit of production, is a central sustainability concern in Nigeria's oil and gas sector due to persistent gas flaring and methane leaks that significantly elevate the nation's carbon footprint. Offshore operations in Nigeria were recently reported to average 41 kg CO<sub>2</sub>e per barrel of oil equivalent, reflecting high emissions compared to global benchmarks (S&P Global, 2024). Scholars emphasize that reducing GHG intensity requires stronger enforcement of anti-flaring policies, investments in low-carbon technologies, and alignment with international climate disclosure standards (Nwekwo et al 2025).

#### **Corporate Financial Performance**

Corporate financial performance in Nigeria is widely regarded as a multidimensional construct that reflects the efficiency, profitability, and overall competitiveness of firms within the country's dynamic and often volatile economic environment. It is influenced by both internal capabilities, such as resource utilization and management efficiency, and external pressures, including regulatory demands,

market fluctuations, and sustainability expectations. Scholars have emphasized that corporate financial performance goes beyond short-term profitability to encompass long-term value creation and stakeholder satisfaction, especially as firms face rising demands for accountability and transparency (Asuquo & Dada, 2022). In Nigeria's oil and gas sector, financial performance is particularly sensitive to global energy transitions, domestic policy reforms, and environmental obligations, making robust performance measurement frameworks essential for aligning profitability with sustainability objectives (Otalor, 2025). The integration of sustainability metrics into corporate reporting has thus become increasingly important for evaluating financial performance in ways that meet both investor expectations and regulatory standards (Nwekwo et al 2025).

Within this broader framework, return on equity (ROE) serves as a key proxy for corporate financial performance, providing a direct measure of how efficiently firms generate profit from shareholders' investments. ROE is particularly relevant in evaluating oil and gas firms in Nigeria because it reflects not only profitability but also management's ability to balance operational risks with capital allocation. Researchers have observed that while some sustainability practices positively influence ROE, others show insignificant or even negative relationships, highlighting the complexity of linking environmental initiatives to shareholder returns (Agbakwuru, 2025). This suggests that the use of ROE as a proxy allows for deeper exploration of whether sustainability reporting practices such as energy intensity, water management, air pollutant emissions, and GHG intensity truly enhance financial outcomes. Consequently, examining ROE within the sustainability context provides a valuable lens for understanding how Nigerian oil and gas firms can reconcile financial success with environmental accountability.

## **Theoretical Review**

### **Triple Bottom Line (TBL) Theory**

The Triple Bottom Line theory, introduced by Elkington in 1994, broadens the traditional financial performance focus by emphasizing three dimensions: profit, people, and planet. It posits that firms create long-term value not only by generating economic returns but also by addressing social equity and environmental sustainability. In Nigeria's oil and gas industry, the TBL framework underscores the importance of managing energy consumption, water resources, and emissions alongside financial performance indicators such as return on equity. This approach highlights that sustainable business practices can reduce environmental harm, foster community goodwill, and enhance financial resilience. The TBL

theory is therefore highly relevant for evaluating how sustainability reporting proxies integrate with corporate financial performance in environmentally sensitive sectors.

### **Legitimacy Theory**

Legitimacy theory was first articulated by Dowling and Pfeffer in 1975, emphasizing that organizations continually seek to ensure their operations are perceived as legitimate within the broader societal framework. The theory posits that firms disclose sustainability information, such as energy intensity, water management, and emissions reduction, to align with societal expectations and secure their social license to operate. In the Nigerian oil and gas sector, where environmental challenges are prominent, legitimacy theory explains why firms adopt sustainability reporting practices to mitigate reputational risks, comply with regulatory requirements, and maintain stakeholder trust. Thus, legitimacy theory provides a lens for understanding the motivations behind sustainability disclosures and how they relate to firms' financial outcomes, including return on equity.

### **Empirical Review**

Onwubiko et al. (2025) examined ESG disclosures and ROE in Nigerian oil and gas firms using regression. Results showed social disclosures negatively affect ROE, governance disclosures significantly improve ROE, and environmental disclosures were positive but insignificant. They concluded sustainability reporting influences performance differently and recommended strengthening governance while maintaining socially responsible practices.

Sudi (2025) assessed environmental and economic reporting in downstream oil and gas firms using GRI indices and regression. Findings showed environmental reporting had an insignificant positive effect on NPM, while economic reporting significantly improved profitability. The study concluded economic disclosures better drive performance and recommended compliance with environmental laws and stronger economic reporting.

Eneh (2024) analyzed sustainability disclosures of eight listed oil and gas firms (2014–2023) using GRI content analysis. Findings revealed disclosures exist, but environmental reporting lags behind economic and social aspects. The study concluded deeper environmental reporting could improve reputation and performance and recommended more balanced, credible disclosure practices.

Agbo (2024) investigated GHG and energy disclosures using panel regression. Results showed GHG disclosure negatively impacts competitiveness, while energy disclosure had a positive but insignificant effect. The study concluded transparency in emissions

reporting is essential for competitiveness and recommended improved GHG management and strengthened sustainability disclosures.

IIARD (2023) examined sustainability reporting and performance of Nigerian oil and gas firms using content analysis and regression. Findings showed environmental and social disclosures significantly improve ROE and ROA. The study concluded disclosure influences financial outcomes and recommended standardized frameworks and stronger regulatory enforcement.

Nahlazbery (2023) studied sustainability reporting in ten oil and gas firms (2013–2022) using OLS regression. Results showed environmental, social, and economic disclosures positively affect ROE and ROA. The study concluded reporting promotes value creation and recommended adoption of global frameworks and strict regulatory enforcement.

Iliemena (2023) investigated disclosure effects on profitability of 23 Nigerian manufacturing firms (2012–2021) using regression. Results showed social disclosure improves GPM, while environmental disclosure had no effect on ROCE. The study concluded social reporting enhances profitability and recommended improving environmental reporting quality.

Onoh (2022) examined environmental reporting and firm value of listed Nigerian oil and gas firms using regression. Findings showed environmental disclosure significantly enhances firm value. The study concluded reporting builds investor confidence and recommended stronger environmental disclosures to improve transparency and long-term sustainability.

## Research Methodology

### Research Design

This study adopts an ex-post facto research design, which is appropriate since the researcher cannot manipulate the financial and sustainability reporting data of firms but can only analyze past records. The design enables the evaluation of cause-and-effect relationships between sustainability reporting proxies and corporate financial performance using historical data from audited financial statements and sustainability reports of oil and gas firms listed in Nigeria from 2015 to 2024.

### Population of the Study

The population comprises all oil and gas firms listed on the Nigerian Exchange (NGX) as of 2024. These firms operate in upstream, midstream, and downstream segments, contributing significantly to Nigeria's economy while also being heavily scrutinized for environmental impacts. Their inclusion provides a comprehensive platform for examining the nexus

between sustainability reporting and corporate financial performance.

### Sample and Sampling Techniques

A purposive sampling technique was adopted to select 10 listed oil and gas firms with consistent availability of annual reports and sustainability disclosures between 2015 and 2024. The sampled firms are Seplat Energy Plc, Oando Plc, TotalEnergies Marketing Nigeria Plc, Conoil Plc, Eterna Plc, MRS Oil Nigeria Plc, Ardova Plc, 11 Plc (Mobil Oil Nigeria), Japaul Gold & Ventures Plc, and Aradel Holdings Plc. This ensures reliability and relevance of data.

### Method of Data Collection

Secondary data were collected from the audited financial statements and sustainability reports of the sampled firms covering the period 2015–2024. The ten-year timeframe provides sufficient data points for panel regression analysis while capturing evolving reporting practices. Data were extracted systematically, focusing on financial variables and sustainability indicators consistent with Global Reporting Initiative (GRI) standards and corporate governance disclosures.

### Method of Data Analysis

The study employed panel least squares regression using E-Views 9.0, with both fixed and random effects models estimated to account for firm-level heterogeneity. Hausman tests guided model selection. Several diagnostic tests were performed, including cross-sectional dependence tests. Panel unit root tests ensured stationarity, while Pedroni cointegration test verified long-run relationships. Findings were interpreted with a 5% significance level to ensure robustness and reliability.

### Model Specifications

The model specifies corporate financial performance proxied by return on equity (ROE) as the dependent variable, with sustainability reporting proxies as independent variables: energy intensity (EI), water management rate (WMR), air pollutant emissions intensity (APEI), and GHG emissions intensity (GHGI). The general panel regression model is:

$$ROE_{it} = \alpha + \beta_1 EI_{it} + \beta_2 WMR_{it} + \beta_3 APEI_{it} + \beta_4 GHGI_{it} + \mu_i + \epsilon_{it}$$

where  $i$  denotes firm and  $t$  denotes year.

### Results and Discussion

The relationship between sustainability reporting and corporate financial performance in Nigerian oil and gas firms is critical for understanding how environmental practices influence profitability. This study examined the effects of EI, WMR, APEI, and GHGI on ROE from 2015 to 2024. Several econometric techniques

were applied to analyze the data, enabling clear insights into firm-level dynamics. The tests facilitated a systematic understanding of data properties, assessment of long- and short-run relationships among variables, and identification of the most suitable regression models for panel analysis. Each procedure was essential for ensuring robustness and reliability, thereby strengthening the credibility of the findings. Through these methods, the study provided a sound empirical basis for evaluating how sustainability practices affect financial outcomes, ensuring accurate

and trustworthy conclusions for both academic and policy relevance.

### Descriptive Statistics

Descriptive statistics summarize key features of EI, WMR, APEI, GHGI, and ROE. They highlight central tendencies, dispersion, and variability, enabling preliminary insights into how sustainability indicators behave and how they may relate to corporate financial performance within Nigeria's oil and gas sector. This was presented in the Table below:

**Table 1: Descriptive Statistics**

|              | ROE       | EI       | WMR      | APEI     | GHGI      |
|--------------|-----------|----------|----------|----------|-----------|
| Mean         | 7.942500  | 35.76250 | 48.70400 | 2.190710 | 396.0370  |
| Median       | 9.635000  | 35.80000 | 48.50000 | 2.139500 | 407.0000  |
| Maximum      | 26.28000  | 59.17000 | 68.70000 | 3.644000 | 530.9000  |
| Minimum      | -14.11000 | 16.55000 | 30.10000 | 1.007000 | 209.6000  |
| Std. Dev.    | 9.031221  | 10.10084 | 8.570503 | 0.483991 | 80.75283  |
| Skewness     | -0.360662 | 0.240154 | 0.448243 | 0.339653 | -0.703520 |
| Kurtosis     | 2.472537  | 2.203040 | 2.813340 | 3.249852 | 2.830662  |
| Jarque-Bera  | 3.327194  | 3.607670 | 3.493864 | 2.182844 | 8.368487  |
| Probability  | 0.189456  | 0.164666 | 0.174308 | 0.335739 | 0.015234  |
| Sum          | 794.2500  | 3576.250 | 4870.400 | 219.0710 | 39603.70  |
| Sum Sq. Dev. | 8074.733  | 10100.67 | 7271.898 | 23.19050 | 645581.0  |
| Observations | 100       | 100      | 100      | 100      | 100       |

**Source: E-Views 9.0, 2025.**

The descriptive results show that ROE averaged 7.94 with wide variability (SD = 9.03), ranging from negative values to a maximum above 26, indicating periods of both losses and profitability. EI averaged 35.76, with moderate dispersion, suggesting differences in operational efficiency across firms. WMR recorded a mean of 48.70 with relatively tight clustering, reflecting moderate consistency in water use practices. APEI averaged 2.19, showing stability with low dispersion, though skewness indicates slight asymmetry in emission intensity. GHGI had the highest mean (396.04) and wider spread (SD = 80.75),

reflecting substantial variations in greenhouse gas profiles among the firms.

### Correlation Analysis

Correlation analysis assesses the degree and direction of association among EI, WMR, APEI, GHGI, and ROE. This identifies potential multicollinearity issues and provides early evidence of whether sustainability indicators are positively or negatively linked with financial performance. The correlation analysis was presented in Table 2 below.

**Table 2: Correlation Analysis**

|      | ROE      | EI       | WMR      | APEI     | GHGI     |
|------|----------|----------|----------|----------|----------|
| ROE  | 1.000000 |          |          |          |          |
| EI   | 0.597901 | 1.000000 |          |          |          |
| WMR  | 0.475103 | 0.751276 | 1.000000 |          |          |
| APEI | 0.593194 | 0.587078 | 0.447327 | 1.000000 |          |
| GHGI | 0.628114 | 0.658395 | 0.760408 | 0.471108 | 1.000000 |

**Source: E-Views 9.0, 2025.**

The correlation results indicate that ROE is positively related to EI (0.60), WMR (0.48), APEI (0.59), and GHGI (0.63), suggesting that higher sustainability metrics align with improved financial performance. EI shows strong positive association with WMR (0.75) and GHGI (0.66), reflecting energy use closely linked to water and emissions management. WMR also

correlates strongly with GHGI (0.76), emphasizing the interconnectedness of water and greenhouse gas controls. APEI maintains moderate correlations with EI (0.59) and ROE (0.59), but weaker with WMR (0.45). Overall, the variables exhibit strong interdependence, supporting the relevance of sustainability indicators in explaining financial outcomes.

### Cross-Sectional Dependence Test

This test determines whether shocks affecting one oil and gas firm spill over to others. Detecting cross-estimates of sustainability indicators' effects on financial performance. This was presented below

sectional dependence is critical in panel data, as ignoring it could bias e

**Table 3: Cross-Sectional Dependence Test**

Residual Cross-Section Dependence Test

Null hypothesis: No cross-section dependence (correlation) in residuals

Equation: Untitled

Periods included: 10

Cross-sections included: 10

Total panel observations: 100

Cross-section effects were removed during estimation

| Test                     | Statistic | d.f. | Prob.  |
|--------------------------|-----------|------|--------|
| Breusch-Pagan LM         | 61.32772  | 45   | 0.0530 |
| Pesaran scaled LM        | 0.667000  |      | 0.5048 |
| Bias-corrected scaled LM | 0.111444  |      | 0.9113 |
| Pesaran CD               | 1.876705  |      | 0.1006 |

**Source: E-Views 9.0, 2025.**

The results of the residual cross-section dependence test reveal that the Breusch-Pagan LM statistic (61.33,  $p = 0.053$ ) is close to significance, suggesting a mild indication of cross-sectional correlation. However, the Pesaran scaled LM (0.67,  $p = 0.50$ ) and bias-corrected LM (0.11,  $p = 0.91$ ) confirm no evidence of dependence across firms. The Pesaran CD statistic (1.88,  $p = 0.10$ ) is also insignificant, reinforcing the null hypothesis. Overall, the findings imply that the residuals from ROE, EI, WMR, APEI, and GHGI

models are largely independent across firms, validating the reliability of panel regression estimates without severe cross-sectional bias.

### Panel Unit Root Test

Panel unit root test checks the stationarity of EI, WMR, APEI, GHGI, and ROE series. Ensuring stationarity prevents spurious regression results and validates the reliability of analyzing long-term sustainability-performance relationships among Nigerian oil and gas firms.

**Table 4: ADF Panel Unit Root Test**

| Variables | Method   | ADF Statistics | Probability | @ Level    | Check for Stationary |
|-----------|----------|----------------|-------------|------------|----------------------|
| ROE       | ADF Test | 24.3922        | 0.2260      | 1(0)       | Non-Stationary       |
| EI        | ADF Test | 11.1068        | 0.9434      | 1(0)       | Non-Stationary       |
| WMR       | ADF Test | 12.2509        | 0.9072      | 1(0)       | Non-Stationary       |
| APEI      | ADF Test | 27.5425        | 0.1207      | 1(0)       | Non-Stationary       |
| GHGI      | ADF Test | 23.5995        | 0.2603      | 1(0)       | Non-Stationary       |
| Variables | Method   | Statistics     | Probability | @1st Diff. | Check for Stationary |
| ROE       | ADF Test | 45.0673        | 0.0011      | 1(1)       | Stationary           |
| EI        | ADF Test | 46.4939        | 0.0007      | 1(1)       | Stationary           |
| WMR       | ADF Test | 51.0162        | 0.0002      | 1(1)       | Stationary           |
| APEI      | ADF Test | 55.9292        | 0.0000      | 1(1)       | Stationary           |
| GHGI      | ADF Test | 77.6826        | 0.0000      | 1(1)       | Stationary           |

**Source: E-Views 9.0, 2025.**

The unit root test results indicate that at level, ROE, EI, WMR, APEI, and GHGI are all non-stationary as their probabilities exceed the 5% threshold, suggesting the

presence of unit roots. However, after first differencing, the ADF statistics become significant with probabilities well below 0.05, confirming that all variables attain stationarity at order one, I(1). This implies that the time



series for financial performance and sustainability indicators share common stochastic trends and require differencing to achieve stability. Hence, subsequent panel regression and cointegration analysis are valid, ensuring reliable long-run and short-run interpretations of the sustainability–performance relationship.

**Table 5: Pedroni Residual Cointegration Test**

Pedroni Residual Cointegration Test

Series: ROE EI WMR APEI GHGI

Date: 09/06/25 Time: 15:22

Sample: 2015 2024

Included observations: 100

Cross-sections included: 10

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

User-specified lag length: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

|                     | Statistic | Prob.  | Weighted<br>Statistic | Prob.  |
|---------------------|-----------|--------|-----------------------|--------|
| Panel v-Statistic   | 1.290857  | 0.9016 | 1.806783              | 0.9646 |
| Panel rho-Statistic | 2.895832  | 0.0118 | 3.946755              | 0.0007 |
| Panel PP-Statistic  | 4.304206  | 0.0000 | 4.541922              | 0.0000 |
| Panel ADF-Statistic | 2.784586  | 0.0167 | 2.791524              | 0.0143 |

Alternative hypothesis: individual AR coefs. (between-dimension)

|                     | Statistic | Prob.  |
|---------------------|-----------|--------|
| Group rho-Statistic | 3.481012  | 0.9998 |
| Group PP-Statistic  | 10.07038  | 0.0000 |
| Group ADF-Statistic | 3.046728  | 0.0086 |

**Source: E-Views 9.0, 2025.**

The Pedroni residual cointegration test results reveal evidence of a long-run relationship among ROE, EI, WMR, APEI, and GHGI. Within-dimension statistics show that the panel rho, PP, and ADF are significant with probabilities below 0.05, indicating cointegration despite the panel v-statistic being insignificant. Similarly, between-dimension results reveal that while the group rho is insignificant, both the group PP and ADF statistics are highly significant. These outcomes confirm that sustainability reporting proxies and corporate financial performance move together in the

### Pedroni Panel Cointegration Test

The Pedroni test examines whether EI, WMR, APEI, GHGI, and ROE share a long-run equilibrium relationship. Establishing cointegration confirms that sustainability practices and financial outcomes move together over time in Nigeria’s oil and gas sector. This was presented in the table below.

long run, suggesting stable equilibrium relationships. Thus, shocks in sustainability practices eventually align with firm performance across Nigeria’s oil and gas sector.

### Redundant Fixed Effects vs Hausman Test

This step distinguishes whether firm-specific effects are best captured by fixed or random effects. The redundant test and Hausman procedure ensure the chosen regression model properly accounts for heterogeneity in sustainability–performance dynamics.

**Table 6: Redundant Fixed Effects Tests Vs Correlated Hausman Test**

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

| Effects Test             | Statistic | d.f.   | Prob.  |
|--------------------------|-----------|--------|--------|
| Cross-section F          | 12.856044 | (9,86) | 0.0000 |
| Cross-section Chi-square | 85.245593 | 9      | 0.0000 |

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

| Test Summary         | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 3.457383          | 4            | 0.4844 |

**Source: E-Views 9.0, 2025.**

The redundant fixed effects test indicates that the cross-section F statistic (12.86,  $p = 0.0000$ ) and Chi-square statistic (85.25,  $p = 0.0000$ ) are highly significant, confirming the presence of fixed effects across firms. This implies that firm-specific characteristics strongly influence the relationship between ROE, EI, WMR, APEI, and GHGI. However, the Hausman test result ( $\chi^2 = 3.46$ ,  $p = 0.4844$ ) shows that random effects are more appropriate, as the null hypothesis of no systematic difference between fixed and random estimates cannot be rejected. Thus, the random effect regression model

provides consistent and efficient estimates for this study.

**Random Effect Regression**

Random effect regression evaluates sustainability–performance linkages while assuming firm-specific effects are random. It provides efficient estimates when appropriate, enabling generalization of how EI, WMR, APEI, and GHGI affect ROE across Nigeria’s oil and gas firms. The random effect model was presented in Table 7 below.

**Table 7: Random Effect Model**

Dependent Variable: ROE

Method: Panel EGLS (Cross-section random effects)

Date: 09/06/25 Time: 15:21

Sample: 2015 2024

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Swamy and Arora estimator of component variances

| Variable              | Coefficient | Std. Error | t-Statistic | Prob.  |
|-----------------------|-------------|------------|-------------|--------|
| EI                    | 0.045774    | 0.014830   | 3.086409    | 0.0085 |
| WMR                   | 0.024946    | 0.006776   | 3.681263    | 0.0007 |
| APEI                  | -0.630152   | 0.225265   | -2.797381   | 0.0153 |
| GHGI                  | 0.016377    | 0.020643   | 0.793352    | 0.4295 |
| C                     | 0.065339    | 0.075304   | 4.863922    | 0.0000 |
| Effects Specification |             |            |             |        |
|                       |             |            | S.D.        | Rho    |
| Cross-section random  |             |            | 6.807139    | 0.6210 |
| Idiosyncratic random  |             |            | 5.317573    | 0.3790 |

Weighted Statistics

|                    |          |                    |          |
|--------------------|----------|--------------------|----------|
| R-squared          | 0.049400 | Mean dependent var | 1.904775 |
| Adjusted R-squared | 0.009375 | S.D. dependent var | 5.327396 |
| S.E. of regression | 5.302365 | Sum squared resid  | 2670.932 |
| F-statistic        | 1.234223 | Durbin-Watson stat | 2.271821 |
| Prob(F-statistic)  | 0.301638 |                    |          |

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| Unweighted Statistics |          |                    |          |
|-----------------------|----------|--------------------|----------|
| R-squared             | 0.205276 | Mean dependent var | 7.942500 |
| Sum squared resid     | 6417.182 | Durbin-Watson stat | 0.945568 |

**Source: E-Views 9.0, 2025.**

Table 7 presents the regression results showing the impact of sustainability reporting on the financial performance of listed oil and gas firms in Nigeria from 2015 to 2024. Using ROE as the dependent variable, a panel regression framework with random effects was applied to examine the effects of EI, WMR, APEI, and GHGI. Each variable's contribution to financial performance was evaluated at the 5% significance level to establish statistical relevance, offering insights into how sustainability indicators influence long-run profitability and value creation within Nigeria's oil and gas sector.

The random effects model shows that EI has a positive and highly significant effect on ROE, with a coefficient of 0.0458. This suggests that greater energy efficiency enhances profitability among Nigerian oil and gas firms by reducing costs and improving operational performance. This aligns with the profit dimension of the Triple Bottom Line (TBL) theory, which emphasizes eco-efficiency as a driver of financial sustainability, and with Legitimacy Theory, since efficient energy use enhances societal approval. Empirically, the finding supports Nahlazbery (2023) and IIARD (2023), who reported positive effects of environmental reporting on performance, and complements Agbo (2024), who highlighted the competitiveness benefits of energy disclosures. Thus, efficient energy management strengthens both financial and reputational outcomes.

WMR has a positive and significant coefficient (0.0249,  $p = 0.0007$ ), implying that effective water management contributes positively to ROE. This outcome supports the people and planet dimensions of TBL theory, since responsible water use fosters community trust and mitigates environmental risks, thereby improving financial performance. Legitimacy Theory also explains this finding, as firms enhance their legitimacy by addressing a resource critical to host communities. Empirical evidence from IIARD (2023) and Nahlazbery (2023) similarly reported that sustainability practices improve financial outcomes, while Eneh (2024) emphasized the need for stronger environmental

disclosures. Hence, efficient water practices emerge as both a financial and social performance driver.

The result shows that APEI has a negative and significant effect on ROE, with a coefficient of  $-0.6302$ . This indicates that higher pollutant emissions erode profitability, reflecting additional costs from regulatory penalties, reputational risks, and remediation expenses. The finding is consistent with the planet dimension of TBL, which stresses that unsustainable practices harm long-term profitability, and with Legitimacy Theory, as excessive emissions undermine firms' social license to operate. Empirically, this aligns with Agbo (2024), who reported that emissions disclosure negatively impacts competitiveness, and complements Onwubiko et al. (2025), who found mixed effects of environmental disclosures. This suggests that reducing emissions is both an environmental necessity and a financial imperative.

GHGI has a positive but insignificant coefficient (0.0164,  $p = 0.4295$ ), suggesting no measurable effect on ROE in the short run. This finding may reflect time lags in monetizing climate-related initiatives, consistent with TBL theory's long-term orientation and Legitimacy Theory's view that disclosure without substantive action may not yield financial benefits. While IIARD (2023) and Nahlazbery (2023) found environmental reporting improves profitability, Agbo (2024) highlighted the complexity of GHG disclosure, sometimes yielding negative or insignificant impacts. This study suggests that, unless emission reductions are credibly implemented and integrated into operational efficiency, GHGI improvements may not yet translate into higher financial returns.

### Conclusion

The results conclude that sustainability reporting significantly influences financial performance in Nigeria's oil and gas sector. Energy and water efficiency drive profitability and corporate legitimacy, while air pollutant emissions harm returns. However, greenhouse gas intensity remains financially insignificant in the short run, reflecting the complexity of monetizing climate actions. These findings reinforce

the importance of embedding sustainability practices into operational strategies for long-term corporate resilience and value creation.

### Recommendations

Based on the findings, the following recommendations were made:

- i. Firms should invest in energy efficiency technologies to lower costs and improve profitability.
- ii. Stronger water management frameworks should be adopted to enhance community trust and resource stewardship.

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## Perception of Business Education Students on Content Coverage of Center for Entrepreneurial Studies in Delta State University, Abraka

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### Abstract

*The study assessed business education students' perception on content coverage of center for entrepreneurial studies in Delta State University, Abraka. The role of the study is to determine if there is any significant relationship between students' mean score on theoretical entrepreneurial knowledge and practical entrepreneurship knowledge. Three research question were raised to guide the study as well as two hypotheses were formulated for the study. The study adopted a descriptive survey design. The population comprises of 417 students of business education during the 2024/2025 academic session of Delta State University, Abraka. The sample comprised of randomly selected 90 students. A structure questionnaire containing 24 questions made to collect data. Data collected was analyzed using mean gain, while hypotheses was tested using t-test at 0.05 level of significance. The study revealed that content coverage of center for entrepreneurial studies is both theory and practical oriented, though the findings gave upper hand to the practical aspect. The researcher recommended among other that government should adequately support graduate with capital since practical knowledge of their area of study can get them started, students should not relent in venturing into self-business after graduation and should not wait for white cola job.*

**Keywords:** Business Education, Content Coverage, Entrepreneurial Studies

### Introduction

The competitive nature of securing jobs in 21<sup>st</sup> century has transformed intuitions in developing skilled centers for students to acquired relevance skills, knowledge and competencies required to be gainfully employed or be self-reliance. Nigeria is accountable for half of the population and more than two third of the output of West Africa. She is blessed with millions upon millions of acres of cultivatable land, possesses about 38.5 billion barrel of state oil reserves, very great portion of gas reserves, varieties of unexploited mineral, adding to a very large asset of human capital because of its estimated statistics of over one hundred and fifty million. This could be traced from inadequate entrepreneurial knowledge exhibited by both present and pass leaders. Our education most seeks to impact adequate knowledge of entrepreneurship education on our young generation (Nosakhare, 2013).

Entrepreneurial development is characterized by innovation, risk taking and essential factor of a nation's ability to succeed in dynamic and more competitive global market force. It is the capacity and willingness to undertake conception, organization and management

of a productive venture with all co-occurrence risks while making effort to make profit as a reward. An entrepreneurial process involves all functions, task, and specialized actions associated with perceiving opportunities and developing something new and assuming the risks and rewards (Hisrich and Peters, 2002).

Shane (2003) described entrepreneurship as a process that involves seven different stages which are: existence of opportunity, discovery of opportunity, decision to exploit opportunity, resource acquisition, entrepreneurial strategy, organizing process, performance. Entrepreneurial development is about regard through healthy and see as reference point against which other things will be evaluated in business. This is based on activities and change, entrepreneurial skill is also defined as the willingness and ability of a person, or a firm or an organization to see environmental change as an opportunity and use factors of production to produce new goods and services which can occur in a new or an already existing business. Entrepreneurship is the practice of taking ideas and

inventing an organization for developing the ideas (Shane, 2003).

Studies had showed that early knowledge have a way of producing better performance and breakthrough, Berglung and Wennberg (2006) conducted a study on creativity among entrepreneurship students. The study uses a personality test and open-ended interviews to explore creativity between two groups of entrepreneurship masters' students: one at a business school and one at an engineering school. These findings indicate that both groups had high creative potential, but that engineering students channeled this into practical and incremental efforts whereas the business students were more speculative and had a clearer market focus. Biais & Perotti, (2008), studies how early-stage new ideas are turned into successful businesses. They argued that promising ideas can be unprofitable if they fail on one dimension, such as technical feasibility, correspondence to market demand, legality, or patentability. Adequate entrepreneurship knowledge is, therefore, necessary for Nigeria to fight and avoid economic recession.

Ediagboya (2024) stressed that entrepreneurship knowledge or education is an expected learning outcome that will equip the students with the skills to be self-reliant and task the government and other education stakeholders should make sure that educational programme at all levels of education is made relevant to provide the youths and graduates needed entrepreneurial skills. Entrepreneurship education in the narrower sense follows a direct approach, developing students' competencies and entrepreneurial intentions towards starting a business as a career option. According to Paul (2005), the objective of entrepreneurship knowledge or education include to: offer functional education to youth to make self-employed and self-reliant, provide youth graduates with adequate training to them creative and innovative in identifying novel business opportunities and establish a career in small and medium scale businesses, reduce high rate of poverty and rural-urban migration, create employment and serve as a catalyst for economic growth and development among others which averting economic recession is one. According to Central Bank of Nigeria (2021) economic recession is a business cycle contraction, and it refers to a general slowdown I economic activity for two consecutive quarters. GDP is the market value of all legitimately recognized final goods and services produced in the country in a given period of time, usually one year.

Specifically, recession have negative consequences. CBN (2021) cited the following as the effects of economic recession. When household income is cut as a result of economic slowdown, they reduce their demand for goods and services. The experience of the recent GFC showed that many businesses such as Bank

of America, Lehman brothers in America to some local banks in Nigeria were affected. Recession affects both small and large business.

As revenues decline on the statutory reports of businesses, lower dividends are declared. This will depress the price of stocks in the market. The incidence that happened when share prices crashed across the world during the GFC may not be blamed entirely on this factor; however, this is partly responsible for the event. So many businesses lost their viabilities because of the risks they were carrying at the moment. When dividends fall or vanish, it creates other problems such the sacking of the board of directors and senior management of the company. The advertising/marketing unit may be affected, creating unemployment problem for the economy. When the manufacturer's stock falls and the dividends decline or stop, institutional investors, holding the stock may sell and reinvest the proceeds into better performing stocks. This will further depress the company's stock price and affect the entire equities market and the cycle continues of the economic.

Economic recession also has effect on the ability of customers to pay their debt to the creditors, leading to growing non-performing loans (NPL). In the heat of the GFC, so many subprime debts went bad, thereby impairing a result so many banks went bankrupt. Also, when debtors are not able to repay their debts, companies? Ability to repay their creditors is hampered as a result of falling revenues. This leads to default in paying interest and the principal. The resulting consequence is debt downgrade and rescheduling. In the process, investors will lose confidence in the company and the company may not be able to raise money from the capital market again. When the source of funding ceases, the business will fold up resulting in employee lay-off, and increasing unemployment in the economy may lead into recession.

Recession affects the revenue of firms, and by extension, profitability. In an effort to cut costs and improve its bottom line, the company could compromise product quality and, in the process, lose its market share. A baker may offer the same loaf of bread at the same price but reduce major ingredients such as milk, butter, etc. Recession could force airlines to lower their maintenance standards reduce to break even. They may cut flight to routes that are not profitable and frequently cancel flights when there are insufficient passengers for a particular flight. This could cause some inconvenience to passengers, leading to economic loss.

There are lots of literatures on what entrepreneurship is all about. Ediagboya (2024) regards entrepreneurship as the conception and operation of one's own business. Ediagboya (2024) also regards it as conception, construction and allocation of resource of value from

virtually low to individual, organization, groups and society. He concluded by stating that it entails setting up and organizing small business ventures by mobilizing people and resources to meet people's desires. The changeable world and the fact that entrepreneurship is studies in different disciplines make its definition unclear. Edigboya (2024) wrote that entrepreneurship is discovering new business possibilities in the market which can be individual or people who start business based on an entirely new products or services; also, establishment of more handicraft or services-oriented business with more imitative products and services. Edigboya et al (2024) described entrepreneurship as a process that involves seven different stages which are: existence of opportunity, discovery of opportunity, decision to exploit opportunity, resource acquisition, entrepreneurial strategy, organizing process, performance.

The history of economic recession is as old as the history of humanity itself, dating back to the 3<sup>rd</sup> Century. This was the period of a Military Anarchy also known as imperial crisis (AD235-284), during which the Roman Empire came close to collapse life depression, civil crisis, invasion and diseases. The crisis culminated in the assassination for Emperor Alexander Severus by his own troops, resulting in the competition his successor. Consequently, the Empire split into three competing states by AD254-260 (CBN,2021). Economic recession is a period of general economic decline and is typically accompanied by a drop in the stock market, an increase in unemployment, and a decline in the housing market. Generally, recession is less severe than a depression. The blame for a recession generally falls on the federal leadership, often either the president himself, the head of the Federal Reserve, or the entire administration.

### Statement of the Problem

The place of entrepreneurship knowledge cannot be overemphasized due to the place knowledge occupied in success and breakthrough of any prospective or existing system. The extent to which entrepreneurship is taught in school is the major problem, students lack adequate knowledge of entrepreneurship, even when they tend to know about entrepreneurship, it is theory based, not practical as observed by the researcher. However, it was observed also that center of entrepreneurial studies does not align the practical and theoretical knowledge to the understanding of business education students. This becomes an issue that bordered the researcher to assess the 'perception of business education students on content coverage of center of entrepreneurial studies' in Delta State university, Abraka.'

### Purpose of Study

The main purpose of study is to assess perception of business education students on content coverage of center of entrepreneurial studies in Delta State university, Abraka. Specifically, the study intends to:

Find out students' perception on the content coverage of center of entrepreneurial studies in business education programme.

Ascertain students' perception on role of center of entrepreneurial studies as a pathway out of present and future economic recession.

### Research Questions

The following research questions were raised for the study.

What is the perception of students on the content coverage of center for entrepreneurial studies in business education programme?

What is the role played by center for entrepreneurial studies in the present and future economic recession?

### Research Hypotheses

The following null hypotheses were formulated to guide the study at 0.05 level of significance.

There is no significant gender difference in the mean response of student on their perception of the content coverage of center for entrepreneurial studies in business education programme.

There is no significant gender difference in the mean response of student on whether center for entrepreneurial studies can be a way out of present and future economic recession.

### Methodology

The study adopted a descriptive survey research design. The population comprises of 417 100-300 level students of business education 2022/2023 academic session of Delta State University, Abraka. The sample comprised of randomly selected 90 students. This set of students were used because they have been taught entrepreneurship and had gotten acclimatized with the school system compared to other level of business education student. A structure questionnaire containing 24 items used for data collection. Data collected was analyzed using mean, while the hypotheses tested using t-test at 0.05 level of significance. The decision rule will be based on 4-point liker scale. A mean above 2.5-4 will be accepted while mean ranging from 1-2.4 will be rejected.

### Results and Discussions

To present and analyze the research questions, mean was employed. Mean scores of business education students were presented and analyzed. The results are shown in Table 1 and 2.



### Research Question One

What is the perception of students on the content coverage of center of entrepreneurial studies in business education programme?

**Table 1:** Mean Scores business education students' responses on perception of students on the content coverage of center of entrepreneurial studies in business education programme

| S/N               | Questionnaire Item                                                             | Mean        | Decision        |
|-------------------|--------------------------------------------------------------------------------|-------------|-----------------|
| 1                 | I recall theoretical entrepreneurship knowledge                                | 3.31        | Accepted        |
| 2                 | I theoretically recite my entrepreneurship know-how                            | 2.88        | Accepted        |
| 3                 | I practically apply my entrepreneurship know-how                               | 3.00        | Accepted        |
| 4                 | I practically demonstrate entrepreneurship skill                               | 3.14        | Accepted        |
| 5                 | Content coverage of entrepreneurship education is theoretically covered        | 2.94        | Accepted        |
| 6                 | Content coverage of entrepreneurship education is practically oriented covered | 3.02        | Accepted        |
| 7                 | Teacher adequately covers the practical aspect of entrepreneurship             | 3.04        | Accepted        |
| 8                 | Teacher adequately covers the theory aspect of entrepreneurship                | 3.13        | Accepted        |
| <b>Grand Mean</b> |                                                                                | <b>3.06</b> | <b>Accepted</b> |

Table 1 revealed student's perception on content coverage is positive. Grand mean of 3.06 strongly indicated that center of entrepreneurial studies content adequately covers the expected learning outcome to make a student entrepreneur or to survive without searching for white collar job. It also implies that the content coverage covers both theoretical and practical aspect of business education programme

### Research Question Two

What is the role center of entrepreneurial studies plays in the present and future economic recession?

**Table 2:** Mean Gain Scores of business education students on the role of center of entrepreneurial studies as a pathway out of present and future economic recession

| S/N               | Questionnaire Item                                                                        | Mean        | Decision        |
|-------------------|-------------------------------------------------------------------------------------------|-------------|-----------------|
| 1                 | It builds manpower base towards attaining national development operations                 | 3.50        | Accepted        |
| 2                 | It provides skills and information required to enter into work                            | 3.53        | Accepted        |
| 3                 | It empowers youth to work for themselves or create jobs for others                        | 3.61        | Accepted        |
| 4                 | It builds human capital prepared for current and future labour demand                     | 3.34        | Accepted        |
| 5                 | It building manpower base for natural development and enhance our attaining of set vision |             | Accepted        |
| <b>Grand Mean</b> |                                                                                           | <b>3.44</b> | <b>Accepted</b> |

Table 2 revealed student's perception on center of entrepreneurial studies as a pathway out of present and future economic recession. Grand mean of 3.44 strongly indicated that center of entrepreneurial studies plays a vital role in bring Nigeria out of her present and future economy recession. It also implied that the respondent's perception is strong on the need for center of entrepreneurial studies to equipped students with job skills.

### Test of Hypotheses

#### Hypotheses One

There is no significant gender difference in the mean response of student on their perception of the content coverage of center of entrepreneurial studies in business education programme.

**Table 3:** t-test on gender difference of students mean response on their perception of content coverage of center of entrepreneurial studies in business education programme.

| Variables                                  | Gender | N  | Mean  | SD   | Df | t-cal | t-crit | Sig  | Decision |
|--------------------------------------------|--------|----|-------|------|----|-------|--------|------|----------|
| Perception of students on content coverage | Male   | 27 | 31.96 | 0.51 |    |       |        |      |          |
|                                            |        |    |       |      | 88 | 10.00 | 1.96   | 0.00 | Rejected |
|                                            | Female | 63 | 21.44 | 5.23 |    |       |        |      |          |

Table 3 showed that calculated t-value of 10.00 was greater than critical value of 1.96 at 0.05 level of significance. Since the calculated t-value of 10.00 greater than critical value of 1.96, null hypothesis was

rejected. This implied significant difference between reception of male and female on content coverage of center of entrepreneurial studies in business education programme.

## Hypotheses Two

There is no significant gender difference in mean response of student on whether center of

entrepreneurial studies can be a way out of present and future economic recession.

**Table 4:** t-test on gender difference of students mean response on whether center of entrepreneurial studies can be a way out of present and future economic recession.

| Variables                                 | Gender | N  | Mean  | SD   | Df | t-cal | t-crit | Sig  | Decision |
|-------------------------------------------|--------|----|-------|------|----|-------|--------|------|----------|
| Role of center of entrepreneurial studies | Male   | 27 | 20.00 | 4.06 | 88 | 8.42  | 1.96   | 0.00 | Rejected |
|                                           | Female | 63 | 16.05 | 2.43 |    |       |        |      |          |

Table 4 showed that the calculated t-value of 8.42 was greater than critical value of 1.96 at 0.05 level of significance. Since the calculated t-value of 8.42 is greater than critical value of 1.96, null hypothesis was rejected. This implied significant difference between mean response of male and female respondents, in favour of the female.

## Findings of the Study

The following were raised from the findings of the study:

1. The content coverage of center of entrepreneurial studies is both theoretically and practically oriented, though the findings gave upper hand to the practical aspect.
2. Center of Entrepreneurial Studies can be a way out of present and future economic recession as shown in the gender comparison on their reaction to research question 3.

## Discussion of the Findings

The data collected, presented and analyzed shows that there exists significant difference in students' theoretical center of entrepreneurial studies and practical entrepreneurship knowledge of business students, which is in favour of practical entrepreneurship knowledge, there exist significant relationship between what students can produce with center of entrepreneurial studies and the content coverage of entrepreneurship education whether theory or practical and there also significant gender difference between the students mean response on whether Center of Entrepreneurial Studies can be a way out of present and future economic recession. This is in agreement to Edigboya (2024) who involves seven different stages which are: existence of opportunity, discovery of opportunity, decision to exploit opportunity, resource acquisition, entrepreneurial strategy, organizing process, performance. This supported the findings that Center of

Entrepreneurial Studies content coverage is all encompassing.

It may be concluded that students are inculcated with center of entrepreneurial studies which in turn could be a way out of economic recession. The student will diversify after graduated and be self-reliance instance of waiting for white collar job. Both research question one show adequate grasp of practical entrepreneurship knowledge than the theoretical which is agreement with research question two that also indicated a higher mean on what students can produce with their entrepreneurship knowledge. The results are in consonance with the findings of Arogundade (2011) who stressed that entrepreneurship knowledge or education is an expected learning outcome that will equip the students with the skills to be self-reliance and task the government and other education stakeholders maintain educational programme at all levels of education are made relevant to provide the youths and graduates needed entrepreneurial skills. Absence of the knowledge is negative CBN (2021) emphasized family incomes to cut down, showing result of economic downness, reducing demand for goods and services. Low demand from family, establishment reduce production of certain goods and services to cut cost and profit will decline. Hence, consequence of production fall, workers laid off, reduction in buying of new equipment, less funding for research and development, lower new product rollouts and general business activities collapse.

## Conclusion

The study therefore concludes that since according to the findings of this study, knowledge is measured by what the recipient can produce. Attention if given to developing the individual practical acquisition of knowledge will go a long way in alleviating poverty and creating job for our graduates. If our graduates are adequately established and can compete with their counterpart in other country it will go a long way in bringing us out of the recession, since economic recession

can also be measure by the number or rise in unemployment, self-employment eventually becomes its antidote.

### Recommendations

The following recommendation were made:

1. Government should adequately support graduates with capital since the practical knowledge of their area of study can get them started.

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Students should not relent in venturing into self-business after graduation and should not wait for white cola job.

Aside entrepreneurship courses, every course lecturer should endeavor to bring out the practical sense from the courses they teach rather than making it theory all through.

Government should invest hugely into sponsoring of vocational courses; adequate provision of facilities and manpower training should not be handled with levity.

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## *Performance Management And Sustainable Growth of Deposit Money Banks in Delta State, Nigeria*

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### **Abstract**

*This study investigated the impact of performance management on the sustainable growth of deposit money banks in Delta State, Nigeria, using Strategic Goal Cascade (SGC), Target-Setting Fairness and Clarity (TSFC), Appraisal Process Quality (APQ), and Feedback Culture and Coaching (FCC) as proxies of performance management. A descriptive survey research design was adopted, and data were collected through structured questionnaires administered to employees of ten selected banks located in Asaba, Warri, and Ughelli. A total of 385 questionnaires were distributed, with 349 valid responses retrieved, representing a response rate of 90.65 percent. Reliability was confirmed through Cronbach's alpha values above 0.70 for all variables, and content validity was established through expert review. Data were analyzed using descriptive statistics and multiple regressions in SPSS version 23. The findings revealed that all four dimensions of performance management had significant positive impacts on sustainable growth. Specifically, SGC ( $B = .117, p < .05$ ), TSFC ( $B = .143, p < .05$ ), APQ ( $B = .114, p < .05$ ), and FCC ( $B = .972, p < .05$ ) were all significant predictors, with TSFC showing the strongest effect. These results confirm that transparent target-setting, structured goal alignment, quality appraisal processes, and constructive feedback mechanisms are vital drivers of long-term sustainability in banking institutions. The study concludes that sustainable banking performance depends heavily on internal performance management systems, reinforcing Goal-Setting Theory. It recommends that banks strengthen goal cascade models, adopt participatory and transparent target-setting practices, improve appraisal fairness and timeliness, and embed coaching and mentoring mechanisms into performance management cycles. The study provides theoretical, practical, and policy implications for enhancing the sustainability of the Nigerian banking sector.*

**Keywords:** *Strategic Goal Cascade, Target-Setting Fairness. Clarity, Appraisal Process Quality, Feedback Culture and Coaching*

### **Background to the Study**

In the global banking industry, performance management systems (PMS) have increasingly been recognized as key drivers of sustainable growth. Strategic goal cascade (SGC), which ensures the alignment of corporate objectives with branch and individual targets, has been shown to enhance organizational coherence and efficiency in resource allocation. Target-setting fairness and clarity (TSFC) is widely associated with employee motivation, trust, and engagement, all of which contribute to long-term institutional resilience. Furthermore, appraisal process quality (APQ) and feedback culture & coaching (FCC) are critical to driving employee development,

productivity, and adaptability in dynamic financial markets (Sethi, 2025). However, much of the global discourse has been dominated by quantitative financial measures of growth, with relatively limited integration of these qualitative PMS dimensions into sustainability frameworks (Zainuddin & Osman, 2023).

Across Africa, banks continue to face volatile economic conditions, regulatory reforms, and competition from fintechs, which heighten the importance of robust PMS. Studies have revealed that strategic alignment and fair performance appraisal processes improve employee commitment, thereby strengthening banks' capacity to adapt to turbulence (Mungai & Wambugu, 2023). Feedback culture and

coaching have also been identified as essential mediators of employee productivity and service delivery in African banks (Adebayo & Lawal, 2024). Evidence from Kenya, South Africa, and Ghana demonstrates that fairness and transparency in target-setting, alongside effective feedback mechanisms, foster employee trust and reinforce customer service, ultimately supporting sustainable growth (Chigora et al., 2023). These findings highlight that PMS dimensions such as SGC, TSFC, APQ, and FCC are not peripheral but essential in shaping banking resilience on the continent.

In Nigeria, the banking sector occupies a critical position in driving economic development, but it is confronted with numerous challenges, including inflationary pressures, exchange rate fluctuations, regulatory tightening, and increasing digital disruption. Sustainable growth for deposit money banks is not merely about profitability but also about resilience, innovation, ethical compliance, and customer retention. While studies have examined sustainability reporting and corporate governance practices in Nigerian banks, relatively fewer have explored the role of qualitative PMS dimensions in achieving sustainable growth (Tomomewo et al., 2022). Research by Achara, Ezichi-Obasi, and Ufomba (2024) found that appraisal systems incorporating clear criteria, performance measurement, and constructive feedback positively influence employee performance in Nigerian banks, though the direct link to sustainable growth remains underexplored. Similarly, Nguemo and Ekokotu (2025) emphasized that technology investment enhances sustainable growth in Nigerian deposit money banks, but cautioned that internal management practices, particularly PMS, serve as mediating factors.

Recent findings in Nigeria further indicate that aligning individual objectives with corporate strategy through SGC improves organizational performance, while fairness in target-setting strengthens employee engagement and retention (Okonkwo & Nwankwo, 2023). Moreover, APQ and FCC have been shown to play critical roles in enhancing staff competence, reducing turnover, and supporting ethical risk-taking, all of which are crucial for sustainability in the financial services sector (Olowofela & Akinola, 2025). However, despite these insights, there is limited empirical evidence connecting these four PMS proxies; SGC, TSFC, APQ, and FCC directly with sustainable growth in deposit money banks, especially within Delta State. Given the unique socio-economic landscape of Delta State, characterized by oil-driven economic volatility, urban-rural banking diversity, and rising customer expectations, examining these qualitative PMS measures offers both scholarly and practical value. Such an inquiry will not only bridge existing research gaps but also provide actionable insights for

strengthening the resilience and growth trajectory of Nigerian banks.

### **Statement of the Problem**

Globally, performance management systems have been recognized as mechanisms that align employee efforts with organizational objectives, yet much of the evidence has focused on financial outcomes rather than sustainable growth dimensions. In Africa, while strategic alignment, appraisal quality, and feedback practices are acknowledged as enablers of employee productivity, studies remain fragmented and seldom integrate these qualitative proxies into sustainability models. Within Nigeria, the banking sector continues to face economic volatility, regulatory pressure, and technological disruption, all of which necessitate robust management practices. However, most existing studies have concentrated on financial performance and sustainability reporting, leaving limited attention to how qualitative measures such as strategic goal cascade, fairness in target-setting, appraisal process quality, and feedback culture directly influence sustainable growth in deposit money banks. Particularly in Delta State, where deposit money banks operate within socio-economic contexts of urban-rural diversity and high customer expectations, empirical evidence is scarce. This gap creates uncertainty on whether these performance management proxies significantly predict sustainable growth outcomes. Hence, the need arises for a study grounded in quantitative methods such as Ordinary Least Squares (OLS) regression, to establish causal inferences and provide evidence-based insights on how these dimensions of performance management impact the sustainability trajectory of banks in the region.

### **Objectives of the Study**

The main objective of this study was to examine the impact of performance management on the sustainable growth of deposit money banks in Delta State, Nigeria. The specific objectives were to:

- i. determine the extent to which strategic goal cascade influenced the sustainable growth of deposit money banks in Delta State.
- ii. assess how target-setting fairness and clarity affected the sustainable growth of deposit money banks in Delta State.
- iii. evaluate the influence of appraisal process quality on the sustainable growth of deposit money banks in Delta State.
- iv. ascertain how feedback culture and coaching shaped the sustainable growth of deposit money banks in Delta State.

## Research Questions

- i. To what extent did strategic goal cascade influence the sustainable growth of deposit money banks in Delta State?
- ii. How did target-setting fairness and clarity affect the sustainable growth of deposit money banks in Delta State?
- iii. To what extent did appraisal process quality impact the sustainable growth of deposit money banks in Delta State?
- iv. How did feedback culture and coaching contribute to the sustainable growth of deposit money banks in Delta State?

## Research Hypotheses

**H0<sub>1</sub>:** Strategic goal cascade had no significant impact on the sustainable growth of deposit money banks in Delta State.

**H0<sub>2</sub>:** Target-setting fairness and clarity had no significant effect on the sustainable growth of deposit money banks in Delta State.

**H0<sub>3</sub>:** Appraisal process quality had no significant influence on the sustainable growth of deposit money banks in Delta State.

**H0<sub>4</sub>:** Feedback culture and coaching had no significant impact on the sustainable growth of deposit money banks in Delta State.

## Literature Review

### Conceptual Review

#### Performance management

Performance management had been widely regarded as a critical tool for ensuring organizational efficiency and long-term sustainability in financial institutions. In the context of deposit money banks, performance management served as a structured approach for aligning individual performance with strategic goals, thereby enhancing organizational outcomes. Scholars had emphasized that effective performance management encompassed target-setting, monitoring, evaluation, and feedback mechanisms that motivated employees while promoting accountability (Adebayo & Lawal, 2024; Zainuddin & Osman, 2023). Within Nigerian banks, the role of performance management was even more pressing due to the dynamic macroeconomic conditions and regulatory requirements that demanded adaptive and results-oriented practices. A growing body of literature had suggested that strategic alignment and goal cascading were fundamental to performance management, particularly in banking institutions. When organizational objectives were translated into departmental and individual goals, employees reportedly demonstrated higher levels of clarity and commitment to achieving set targets (Okonkwo & Nwankwo, 2023; Mungai & Wambugu, 2023). In the Nigerian banking sector, where competition was intense, such alignment was argued to

reduce internal inefficiencies and promote consistency in service delivery, thereby reinforcing overall bank stability.

Equally important, fairness and clarity in target-setting had been recognized as determinants of employee satisfaction and trust in the performance management process. Studies noted that employees perceived target-setting processes as credible when they were transparent, realistic, and participatory, which in turn enhanced motivation and reduced workplace conflicts (Sethi, 2025; Chigora et al., 2023). In Nigerian banks, where performance pressure was often high, clarity in expectations reduced resistance and turnover intentions while promoting accountability and commitment. Appraisal process quality was also central to performance management in financial institutions. Research had shown that timely, evidence-based, and objective appraisals promoted fairness, reduced bias, and improved employee engagement (Achara et al., 2024; Olowofela & Akinola, 2025). In Nigeria, where appraisal systems were sometimes criticized for subjectivity, improved quality in appraisal processes had been linked to increased employee trust in management and more effective career development planning. Consequently, appraisal quality was argued to be positively associated with organizational resilience and customer satisfaction. Feedback culture and coaching were highlighted in recent scholarship as mechanisms that reinforced continuous learning and adaptability in banks. Constructive feedback not only closed performance gaps but also encouraged innovation and accountability (Adebayo & Lawal, 2024; Zainuddin & Osman, 2023). Coaching, as an extension of feedback, had been associated with employee development and retention, both of which were critical in Nigeria where banks were increasingly reliant on human capital for competitive advantage. These practices reportedly fostered positive workplace climates, which supported employee productivity and, by extension, sustainable banking growth.

Thus, performance management was further influenced by digital transformation and regulatory oversight. Studies revealed that banks had been compelled to integrate digital tools into appraisal, monitoring, and reporting processes, which enhanced transparency and efficiency (Nguemo & Ekokotu, 2025; Tomomewo et al., 2022). Moreover, regulatory guidelines from the Central Bank of Nigeria had required stricter accountability frameworks, which made performance management an indispensable governance mechanism for deposit money banks. Together, these developments underscored the significance of qualitative aspects of performance management; strategic goal cascade, fairness in target-setting, appraisal quality, and feedback culture as integral to the sustainability of Nigerian banks.

## **Sustainable Growth**

Sustainable growth had been described as the ability of financial institutions to maintain consistent performance while ensuring resilience, innovation, and social responsibility. In global discourse, sustainable growth in banking went beyond profitability to include ethical conduct, environmental awareness, and customer-centered strategies, positioning it as a balance between financial stability and stakeholder interests (Ahmed & Suleiman, 2023; Mensah & Amponsah, 2022). In Africa, sustainable growth was linked to financial inclusion, corporate governance reforms, and risk management. Studies showed that banks pursuing inclusive practices and technological innovation achieved stronger operational resilience and community trust, reinforcing long-term competitiveness (Akinyemi & Ajayi, 2024; Chukwu et al., 2023). These findings underscored the need to integrate social and governance dimensions into banking strategies. Within Nigeria, sustainable growth became more pressing amid inflation, currency volatility, and regulatory changes. Evidence suggested that deposit money banks achieved profitability but struggled with sustaining growth under these pressures. Stable earnings, customer retention, and responsible governance were critical in maintaining resilience (Okeke & Ibeh, 2023; Ojo & Yusuf, 2025). Furthermore, leadership transparency and ethical practices enhanced long-term growth, positioning governance and human capital as central to sustainability (Oladipo et al., 2022; Eze & Ananwude, 2023).

## **Theoretical Review**

### **Goal-Setting Theory**

The present study was anchored on Goal-Setting Theory, which emphasized that specific, clear, and challenging goals motivated higher performance compared to vague or easy objectives. The theory posited that individuals exerted greater effort when they understood the relevance of their tasks to broader organizational goals, and when the targets set were perceived as fair, transparent, and attainable. In the context of deposit money banks, strategic goal cascade reflected the operationalization of this theory, as corporate goals were broken down into departmental and individual objectives, ensuring alignment and coherence across the institution. Similarly, target-setting fairness and clarity directly aligned with the theory's assertion that clarity and perceived equity enhanced employee commitment and reduced resistance to performance targets (Locke & Latham, 2020; Akinyemi & Ajayi, 2024).

Furthermore, appraisal process quality and feedback culture were supported by the theory's assumption that performance improved when individuals received

continuous evaluation and constructive feedback on progress toward set goals. Feedback not only reinforced accountability but also acted as a motivational driver for sustained performance, while coaching ensured capability development (Chigora et al., 2023; Okeke & Ibeh, 2023). When extended to organizational outcomes, Goal-Setting Theory suggested that effective performance management practices ultimately translated into higher productivity, customer satisfaction, and long-term sustainable growth. This linkage justified the use of Goal-Setting Theory as a foundation for examining how performance management systems influenced sustainability in Nigerian deposit money banks.

### **Empirical Review**

Olowofela (2025) investigated sustainable banking and bank stability in Nigeria between 2012 and 2022. The objective was to examine whether governance, social, and environmental practices influenced stability. Using Dynamic Ordinary Least Squares analysis, findings revealed that governance dimensions significantly contributed to stability, while environmental and social dimensions showed mixed effects. The study concluded that sustainability depended heavily on internal management practices and recommended aligning performance management systems with sustainable banking frameworks.

Ehimem and Ogundare (2024) explored performance management systems and organizational performance of deposit money banks in Delta State. The study sought to identify which dimensions of performance management most influenced organizational outcomes. Questionnaires were distributed to bank staff across three major cities, and data were analyzed with multiple regression. Results showed that strategic goal cascade and appraisal process quality were significant predictors of sustainable performance, while feedback enhanced outcomes indirectly. The study concluded that integrated PMS approaches were more effective than isolated measures and recommended formalized goal cascade models and feedback dashboards.

Effiong (2024) assessed the effect of managerial coaching on employee performance in commercial banks in Calabar. The objective was to determine how feedback and support practices influenced innovative and in-role performance. Data collected through a structured questionnaire were tested using regression and mediation analysis. Findings indicated that managerial coaching significantly enhanced both role performance and innovation, with role clarity mediating the relationship. The study concluded that feedback and coaching mechanisms promoted growth and recommended embedding coaching in appraisal systems.

Okafor and Eze (2024) examined performance management and organizational sustainability in public sector organizations in South-East Nigeria. Although outside the banking sector, the objective was to test if PMS influenced sustainability outcomes. Using questionnaires and regression analysis, the study found that goal clarity, timely appraisals, and feedback culture significantly influenced sustainability. It concluded that PMS proxies were critical across sectors and recommended applying similar practices in banking.

Adegbite and Akinola (2024) evaluated the soundness of Nigerian deposit money banks using OLS and IMF Bankometer approaches between 2013 and 2022. The objective was to assess determinants of financial soundness as proxies for sustainability. Findings revealed that management efficiency and risk-related indicators were crucial predictors of soundness. The study concluded that performance management processes underpinned soundness and recommended embedding risk-awareness into goal-setting and appraisal systems.

Okolo, Ikpo, and Ifediora (2024) studied customer feedback management and its effect on customer satisfaction in deposit money banks in South-East Nigeria. The study used a survey and regression analysis to test the relationship. Findings indicated that customer feedback management strongly and positively predicted customer satisfaction. The study concluded that feedback mechanisms enhanced customer trust and recommended integrating complaint resolution speed into staff KPIs.

Akanbi, Ojo, and Lawal (2024) examined employee relations, ethical orientation, and job performance in commercial banks in Lagos. The objective was to determine how fairness and ethical practices shaped employee outcomes. Using a survey design and OLS regression, the study revealed that transparent target-setting and fair appraisals significantly improved employee performance and reduced turnover intentions. It concluded that fairness and ethical orientation were essential to PMS and recommended stronger communication practices.

Adeyemi and Bello (2024) carried out a comparative assessment of Nigerian banks between 2005 and 2015 with the objective of benchmarking drivers of performance. A panel design was adopted, and performance ratios were analyzed alongside management quality measures. Results highlighted that internal management and appraisal systems differentiated sustainable performers. The study concluded that consistent monitoring and appraisal were vital for long-term performance and recommended continuous capacity building for bank managers.

Abu (2023) analyzed the relationship between financial stability, sustainability, and commercial banking performance in Nigeria. The study used secondary macro-banking data with econometric analysis to test how internal practices related to stability. Findings showed that governance and disciplined internal management were critical to sustainable performance. It concluded that performance management practices, particularly fair appraisals and clear goals, were essential to sustaining long-term growth and recommended integrating risk-based KPIs into performance evaluations.

Onu (2022) examined how performance management practices influenced corporate success among banks in Owerri. The objective was to evaluate the impact of structured goal-setting, appraisal, and feedback mechanisms on organizational outcomes. A survey research design was employed, with data collected through questionnaires and analyzed using regression models. Findings revealed that transparent target-setting and consistent appraisals had significant effects on bank performance, while feedback reinforced employee commitment. The study concluded that banks needed to institutionalize participatory target-setting and recommended manager training in coaching techniques to sustain growth.

Odunayo (2022) investigated performance evaluation and employee productivity in deposit money banks in Lagos State. The study aimed to assess the influence of appraisal quality and target clarity on staff output. Using a survey of bank employees and regression analysis, it was established that appraisal process quality—measured by fairness and timeliness—positively influenced productivity, while inadequate feedback reduced efficiency. The study concluded that effective appraisals were central to employee performance and recommended incorporating feedback mechanisms into appraisal cycles.

Attah-Botchwey (2022) studied sustainability reporting and performance of African listed banks, focusing on the role of governance and disclosure. Panel data from multiple banks over a ten-year period were analyzed using regression methods. Findings indicated that sustainability disclosures had limited impact unless supported by internal goal-setting and appraisal practices. The study concluded that disclosures alone were insufficient and recommended aligning internal PMS practices with sustainability strategies.

## **Research Methodology**

### **Research Design**

The study adopted a descriptive survey research design. This design was considered appropriate because it enabled the researcher to obtain the opinions, perceptions, and attitudes of bank employees on the relationship between performance management



systems and sustainable growth. A survey approach also facilitated the collection of primary data directly from respondents in their natural work environment, which improved the relevance and validity of responses. The design was quantitative in nature, as it emphasized the measurement of variables such as Strategic Goal Cascade (SGC), Target-Setting Fairness and Clarity (TSFC), Appraisal Process Quality (APQ), Feedback Culture and Coaching (FCC), and Sustainable Growth (SG). This approach permitted the use of inferential statistics and Ordinary Least Squares (OLS) regression to examine relationships between explanatory and outcome variables.

### Population of the Study

The population of the study comprised all employees working in selected deposit money banks operating in Delta State, Nigeria. Since the study focused on Asaba, Warri, and Ughelli, ten deposit money banks with regional and branch offices in these cities were selected based on their market share and accessibility. The population included managers, supervisors, and operational staff, as they were all involved in the implementation and experience of performance management practices. The breakdown of the study population by bank and location is presented below Table 1 below:

**Table 1: Study Population**

| S/N          | Bank Name               | Branch Address (Main City) | Estimated Staff Population |
|--------------|-------------------------|----------------------------|----------------------------|
| 1            | Zenith Bank Plc         | Zenith Bank Rd., Warri     | 120                        |
| 2            | Guaranty Trust Bank Plc | Okumagba Ave., Warri       | 105                        |
| 3            | First Bank of Nigeria   | Nnebisi Rd., Asaba         | 140                        |
| 4            | United Bank for Africa  | Udu Rd., Warri             | 110                        |
| 5            | Access Bank Plc         | Summit Rd., Asaba          | 100                        |
| 6            | Fidelity Bank Plc       | Effurun-Sapele Rd., Warri  | 85                         |
| 7            | Union Bank Plc          | Okumagba Ave., Warri       | 90                         |
| 8            | Polaris Bank Plc        | Nnebisi Rd., Asaba         | 95                         |
| 9            | Sterling Bank Plc       | Ughelli Main Market Rd.    | 75                         |
| 10           | Ecobank Nigeria Plc     | Ezenei Ave., Asaba         | 80                         |
| <b>Total</b> |                         | <b>1,000</b>               |                            |

**Source: Banks' HR Departments, 2024.**

### Sample Size Determination

The sample size was determined using Yamane's (1967) formula for finite population:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size

N = population size (1,000)

e = margin of error (0.05)

$$n = \frac{1000}{1 + 1000(0.052)} = \frac{1000}{1 + 25} = \frac{1000}{26} = 384.6 \approx 385$$

85

on of the sample size is presented in Table 2 below:

**Table 2: Proportion of the Sample Size**

| Bank Name               | Population | Proportionate Sample (n = 385) |
|-------------------------|------------|--------------------------------|
| Zenith Bank Plc         | 120        | 46                             |
| Guaranty Trust Bank Plc | 105        | 40                             |
| First Bank of Nigeria   | 140        | 54                             |
| United Bank for Africa  | 110        | 42                             |
| Access Bank Plc         | 100        | 39                             |
| Fidelity Bank Plc       | 85         | 33                             |
| Union Bank Plc          | 90         | 35                             |
| Polaris Bank Plc        | 95         | 37                             |
| Sterling Bank Plc       | 75         | 29                             |

Thus, the sample size for the study was 385 employees.

### Sampling Techniques

The study employed a proportionate stratified random sampling technique. The population was first stratified according to banks, and the sample size was distributed proportionately to reflect the number of employees in each bank. Within each stratum, respondents were randomly selected to ensure representativeness. The proportion

| Bank Name           | Population | Proportionate Sample (n = 385) |
|---------------------|------------|--------------------------------|
| Ecobank Nigeria Plc | 80         | 30                             |
| <b>Total Sample</b> |            | <b>385 respondents</b>         |

Source: Researchers Computations, 2025.

### Method of Data Collection

Primary data were collected through the administration of structured questionnaires. The instrument was distributed physically by trained research assistants who visited bank branches. To increase the response rate, questionnaires were delivered during less busy periods such as early mornings and late afternoons. Follow-up reminders were also conducted. Respondents were assured of confidentiality and anonymity, which encouraged honest responses.

### Research Instruments

The research instrument was a self-administered structured questionnaire designed on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The questionnaire was divided into five sections. The first section covered demographic information of respondents while the second section contained items measuring Strategic Goal Cascade (SGC), such as the clarity of cascading goals from top management to employees, Target-Setting Fairness and Clarity (TSFC), focusing on transparency, fairness, and attainability of targets, Appraisal Process Quality (APQ), including aspects such as timeliness, objectivity,

and documentation of appraisals, Feedback Culture and Coaching (FCC), with items addressing frequency, constructiveness, and coaching orientation of feedback and Sustainable Growth, with indicators such as customer retention, innovation, compliance, and stability.

### Validity of Research Instruments

Content validity was censured by subjecting the questionnaire to expert review by three academics in business management and two HR professionals from deposit money banks. Their feedback was incorporated to improve the clarity and relevance of the items. Construct validity was established by aligning the items with theoretical constructs from Goal-Setting Theory and Balanced Scorecard perspectives.

### Reliability of Research Instruments

Reliability of the instrument was tested using Cronbach's Alpha, with a pilot test conducted on 40 respondents from non-sampled bank branches in Delta State. Results showed all variables had alpha coefficients above the acceptable threshold of 0.70, indicating strong internal consistency.

**Table 3: Reliability Instruments**

| Variable                          | Number of Items | Cronbach's Alpha |
|-----------------------------------|-----------------|------------------|
| Strategic Goal Cascade (SGC)      | 6               | 0.82             |
| Target-Setting Fairness (TSFC)    | 6               | 0.79             |
| Appraisal Process Quality (APQ)   | 7               | 0.84             |
| Feedback Culture & Coaching (FCC) | 7               | 0.88             |
| Sustainable Growth (SG)           | 8               | 0.86             |

Source: Researchers Computations, 2025.

### Method of Data Analysis

Data collected were coded and entered into SPSS version 23 for analysis. Descriptive statistics such as means, standard deviations, and frequencies were used to summarize demographic variables and item responses. Inferential statistics were applied to test hypotheses. Specifically, Ordinary Least Squares (OLS) regression was employed to determine the impact of SGC, TSFC, APQ, and FCC on Sustainable Growth..

The regression model was specified as:

$$SG = \beta_0 + \beta_1 SGC + \beta_2 TSFC + \beta_3 APQ + \beta_4 FCC + \mu$$

Where:

SG = Sustainable Growth (dependent variable)

SGC = Strategic Goal Cascade

TSFC = Target-Setting Fairness and Clarity

APQ = Appraisal Process Quality

FCC = Feedback Culture and Coaching

$\beta_0$  = Constant

$\beta_1 - \beta_4$  = Coefficients of regression

$\mu$  = Error term

Hypotheses were tested at a 5% significance level.

Coefficient values, t-statistics, and p-values guided the interpretation of results.

### Results and Discussion

This section outlines the procedures adopted for data analysis. Descriptive statistics were utilized to condense the dataset and highlight underlying patterns, while a correlation matrix was developed to illustrate the associations among the study variables. To test the research hypotheses, multiple regression analysis was

conducted using SPSS version 23. A total of 385 structured questionnaires were distributed to employees of ten selected deposit money banks located in Asaba, Warri, and Ughelli, Delta State, Nigeria. Delta State was purposively chosen due to its prominence as a commercial hub in southern Nigeria, with Asaba, Warri, and Ughelli serving as focal points for banking operations. Out of the questionnaires distributed, 349

were duly completed and returned, representing an impressive response rate of 90.65 percent. This high level of participation offers a robust basis for statistical analysis and exceeds the benchmark proposed by Cooper and Schindler (2014), who consider a 50 percent response rate sufficient, 60 percent good, and 70 percent or higher excellent.

**Table 4: Descriptive Statistics**

|                    | N   | Minimum | Maximum | Mean  | Std. Deviation |
|--------------------|-----|---------|---------|-------|----------------|
| SGC                | 349 | 11      | 20      | 16.87 | 2.144          |
| TSFC               | 349 | 12      | 20      | 17.92 | 2.242          |
| APQ                | 349 | 11      | 20      | 16.33 | 1.656          |
| FCC                | 349 | 12      | 20      | 17.12 | 2.109          |
| SG                 | 349 | 12      | 20      | 17.24 | 2.114          |
| Valid N (listwise) | 349 |         |         |       |                |

**Source: SPSS Version 23 Output, 2025.**

The descriptive statistics reveal clear patterns in the responses of the 349 participants whose questionnaires were valid for analysis. The minimum and maximum values indicate that responses spanned broadly across the expected range. The mean values, which lie between 16.33 and 17.92, show that participants expressed strong positive perceptions across all the measured variables. Among these, TSFC recorded the highest mean of 17.92, suggesting that respondents placed the greatest emphasis on the fairness and clarity

of target-setting. SG followed closely with a mean of 17.24, while FCC scored 17.12, both reflecting favorable opinions regarding growth outcomes and feedback practices. SGC and APQ also reported high averages of 16.87 and 16.33 respectively, underscoring positive experiences with goal alignment and appraisal processes. The standard deviations ranged from 1.656 to 2.242, reflecting limited variability and indicating that responses were relatively consistent across participants. These results provide a dependable foundation for further statistical testing

**Table 5: Correlations**

|                     |      | SG    | SGC   | TSFC  | APQ   | FCC   |
|---------------------|------|-------|-------|-------|-------|-------|
| Pearson Correlation | SG   | 1.000 |       |       |       |       |
|                     | SGC  | .467  | 1.000 |       |       |       |
|                     | TSFC | .365  | .432  | 1.000 |       |       |
|                     | APQ  | .398  | .450  | .437  | 1.000 |       |
|                     | FCC  | .477  | .378  | .439  | .499  | 1.000 |

**Source: SPSS Version 23 Output, 2025.**

The correlation matrix provides insight into the relationships among the study variables. The results show that SG has positive and statistically meaningful associations with all other variables. Specifically, SG correlates most strongly with FCC at .477, suggesting that feedback and coaching practices have a close link with sustainable growth outcomes. This is followed by a correlation of .467 between SG and SGC, indicating that the alignment of goals with employees contributes positively to growth. The correlations between SG and

APQ (.398) and between SG and TSFC (.365) are also positive, showing that appraisal processes and target-setting practices both support growth, though to a slightly lesser degree. Looking at the inter-variable relationships, APQ demonstrates the strongest connection with FCC at .499, suggesting that effective appraisals are strongly related to feedback practices. Overall, the correlations confirm that all variables are positively related, reinforcing the interconnected nature of the performance management system

**Table 6:** **Mutiple Regression Analysis Result**  
**Coefficients<sup>a</sup>**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|--------------|-----------------------------|------------|---------------------------|-------|------|
|              | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant) | .915                        | .372       |                           | .243  | .028 |
| SGC          | .117                        | .027       | .187                      | 4.333 | .000 |
| TSFC         | .143                        | .025       | .146                      | 5.720 | .000 |
| APQ          | .114                        | .030       | .174                      | 3.800 | .002 |
| FCC          | .072                        | .025       | .169                      | 2.287 | .037 |

a. Dependent Variable: SG

**Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1     | .988 <sup>a</sup> | .976     | .964              | .533                       | 1.785         |

a. Predictors: (Constant), SGC, TSFC, APQ, FCC

b. Dependent Variable: SG

**ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | Df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 372.309        | 4   | 99.077      | 596.881 | .000 <sup>b</sup> |
|       | Residual   | 17.237         | 345 | .187        |         |                   |
|       | Total      | 389.546        | 349 |             |         |                   |

a. Dependent Variable: SG

b. Predictors: (Constant), SGC, TSFC, APQ, FCC

**Source: SPSS Version 23 Output, 2025.**

The multiple regression results provide strong evidence on the contribution of the independent variables to SG. The unstandardized coefficients show that SGC, TSFC, APQ, and FCC each exert a positive effect on SG.

The regression result shows that SGC ( $B = .117$ ,  $t = 4.333$ ,  $\text{sig.} = .000$ ) has a significant positive effect on SG, underscoring the critical role of goal alignment in sustaining banking growth. Goal-Setting Theory posits that clearly defined and well-communicated goals serve as a motivational mechanism, enhancing employee focus and organizational outcomes. This finding aligns with Ehimem and Ogundare (2024), who demonstrated that SGC was a significant predictor of sustainable performance in Delta State banks, and with Okafor and Eze (2024), who found that goal clarity drove sustainability in the public sector. Similarly, Abu (2023) emphasized that disciplined goal management underpins long-term banking stability. Taken together, both theory and evidence affirm that cascading goals from top management to operational staff provides clarity, strengthens accountability, and anchors performance, thereby advancing sustainable growth in deposit money banks.

TSFC ( $B = .143$ ,  $t = 5.720$ ,  $\text{sig.} = .000$ ) demonstrated the strongest statistical effect among the variables, highlighting the importance of fairness, transparency, and clarity in performance target systems. Goal-Setting Theory asserts that employees are more motivated and productive when targets are both specific and perceived as fair, as this enhances commitment and reduces

resistance. This result corroborates Akanbi, Ojo, and Lawal (2024), who found that transparent target-setting improved employee performance while lowering turnover intentions. It also supports Onu (2022), who showed that participatory and transparent target-setting significantly boosted bank performance. Adegbite and Akinola (2024) similarly emphasized that aligning targets with sound management practices fostered financial soundness. By reinforcing fairness and transparency in TSFC, banks can build trust, reduce employee dissatisfaction, and drive long-term sustainability.

APQ ( $B = .114$ ,  $t = 3.800$ ,  $\text{sig.} = .002$ ) also showed a significant positive effect on SG, confirming that timely, objective, and well-structured appraisal processes contribute meaningfully to growth. Goal-Setting Theory links appraisals to feedback loops, where progress monitoring helps refine performance and align efforts with organizational goals. This finding resonates with Odunayo (2022), who established that appraisal quality enhanced employee productivity in Lagos banks, and with Ehimem and Ogundare (2024), who found APQ to be a strong predictor of sustainable banking performance. Adeyemi and Bello (2024) also highlighted appraisal as a distinguishing feature of consistently sustainable banks. Similarly, Okafor and Eze (2024) reported that timely appraisals enhanced organizational sustainability. These studies collectively affirm that effective appraisals are not only evaluative but also developmental, strengthening employee

contribution and embedding accountability that sustains growth.

FCC ( $B = .972$ ,  $t = 2.287$ ,  $\text{sig.} = .037$ ) was statistically significant, though its effect size was comparatively modest. Nonetheless, the result highlights the importance of constructive feedback and coaching in strengthening growth outcomes. Goal-Setting Theory maintains that goal pursuit is reinforced when employees receive continuous feedback, which clarifies progress and energizes effort. This aligns strongly with Effiong (2024), who found that managerial coaching significantly enhanced both role performance and innovation in Calabar banks, with role clarity serving as a mediator. Okolo, Ikpo, and Ifediora (2024) also demonstrated that feedback management directly enhanced customer satisfaction in banks. Onu (2022) confirmed that feedback reinforced commitment, while Odunayo (2022) warned that inadequate feedback undermined efficiency. The combined evidence affirms that FCC enhances motivation, improves customer trust, and fosters innovation, thereby serving as a vital, though sometimes under-leveraged, driver of sustainability in banking institutions.

The model summary reveals an R value of .988, an R Square of .976, and an Adjusted R Square of .964, which demonstrates that 97.6 percent of the variation in SG is explained by the four predictors combined. The Durbin-Watson statistic of 1.785 indicates no major concern with autocorrelation. The ANOVA result shows an F statistic of 596.881 with a significance level of .000, confirming that the overall regression model is statistically significant.

### Conclusion and Recommendations

The study examined the impact of performance management on the sustainable growth of deposit money banks in Delta State, Nigeria. Performance management was proxied with four key dimensions: SGC, TSFC, APQ, and FCC. The study concludes that

performance management significantly influences the sustainable growth of deposit money banks in Delta State. All four proxies SGC, TSFC, APQ, and FCC positively contributed to growth, though TSFC emerged as the most influential determinant. The findings validate Goal-Setting Theory, which emphasizes clarity, fairness, feedback, and structured appraisal systems as essential drivers of performance. Importantly, the evidence underscores that sustainable growth in banking is not merely a product of financial strategies but depends heavily on well-structured performance management practices that align organizational objectives with employee efforts. The study recommends that:

- i. Banks should strengthen formal goal cascade models that ensure organizational objectives are clearly communicated across all levels of staff. Regular review meetings, visual goal dashboards, and participatory planning sessions should be institutionalized.
- ii. Transparent communication of performance targets should be prioritized. Banks should engage employees in participatory target-setting processes and adopt ethical guidelines to prevent bias or favoritism. This will enhance fairness perceptions and deepen employee commitment.
- iii. Banks should improve appraisal systems by ensuring objectivity, timeliness, and adequate documentation. Training programs for managers on unbiased evaluation and constructive feedback should be introduced. Appraisals should be positioned as both evaluative and developmental.
- iv. Coaching and mentoring mechanisms should be embedded into performance cycles. Managers should be trained as coaches, and feedback systems should include real-time performance dashboards, regular review sessions, and opportunities for two-way dialogue. This would enhance employee engagement and innovation

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## Performance Management and Sustainable Organisational Growth in the Public Sector

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### Abstract

*The study explored performance management and sustainable organisational growth in the public sector. To examine the role of performance appraisal systems, training and development, reward and compensation systems, and employee participation/engagement on the sustainable growth of the public sector. The study employed a cross-sectional survey design to examine the relationship between performance management and sustainable growth in selected tertiary institutions in Delta State. Four universities (University of Delta Agbor, Delta State University Abraka, Dennis Osadebay University Asaba, and Delta State University of Science and Technology Ozoro) were purposively selected to capture institutional diversity in size, age, and geographical location. The target population comprised academic and non-academic staff. Data were collected through a five-point Likert scale structured questionnaire. From the 428 questionnaires that were distributed, 400 were valid. Data were coded and analysed using Statistical Package for Social Sciences (SPSS) 25.0. The data were analysed by descriptive statistics, correlation analysis, ANOVA (Analysis of Variance) and Multiple Regression analysis. The results show that sustainable growth in Nigeria's public sector (tertiary institutions) is strongly influenced by training and employee engagement. At the same time, appraisal systems and reward structures are weak contributors to sustainable growth. The recommendations were that management should redesign appraisal systems to be developmental and place strong emphasis on capacity building and participatory management.*

**Key Words:** *Performance, Management, Sustainable, Tertiary, Growth*

### Introduction

Sustainable growth in an organisation means the capacity of organisation to provide quality services, be relevant, gain efficiency, accountability, and public trust in the long run. This includes financial stability, institutional capacity, change adaptability, and effectiveness in service delivery (Aroghene et al., 2024). Sustainable development in the state is not only the performance in the short run, but also the sustainability and the reliability of the governmental institutions in the long run.

The Public Sector is related to institutions in the economy owned and run by the government, whether it is federal, state or local. They offer basic services like healthcare, infrastructure, defence, administration of the population, and education, perhaps. The public sector is not driven by the profit motive like the private sector, but rather social goals of equity, national security, economic stability and social welfare (Adeleke & Ogbonna, 2022). Public

universities/tertiary institutions are educational service providers in the public sector. There are a good number of tertiary institutions in Nigeria. The country has federal as well as state tertiary institutions. The quality of services provided and employee performance are important to the proper functioning of these institutions. Performance management is a process of monitoring, assessing and refining employee performance to meet the necessary objectives. These include: performance appraisal systems, training and development systems, reward and compensation systems and employee participation and engagement (Osibanjo et al., 2020). Against the background of constrained fiscal resources and increasing citizen demands, the pressure on public sector organisations to deliver better services, to reinstate the trust and confidence of the people and to show value-based money is mounting in Nigeria.

In turn, performance management has appeared as a key device that can help to shift bureaucratic routines towards results-oriented governance (Pahos &



Galanaki, 2019). The implementation of the Performance Management System (PMS) Policy by the Federal Government in 2022 was a significant milestone in tying individual, departmental, and ministerial goals into the Medium-Term National Development Plan and budget frameworks. This change highlights the change in activity monitoring to measurable results of the public administration in Nigeria (Office of the Head of the Civil Service of the Federation [OHCSF], 2022).

Despite the fact that Nigeria has officially embraced a PMS system within its government sectors, its performance has been scattered and mostly descriptive. Moreover, issues like poor credibility of appraisal, limited training opportunities, and poor reward systems have continued to affect the performance of the public sector (Adeyi et al., 2018). Reforms may remain rhetorical instead of transformative without an integrated empirical model that connects performance management practices with sustainability outcomes. This paper fills these gaps by focusing on the role of performance appraisal systems, training and development, reward and compensation systems and employee participation/ engagement in the joint contribution to sustainable organisational growth in a case study of the selected Tertiary Institutions in Delta State, Nigeria.

### **Objectives of the Study**

- i. To investigate how performance appraisal systems impact sustainable organisational development in tertiary institutions in Delta State, Nigeria.
- ii. To evaluate how training and development affect sustainable organisational growth in tertiary institutions within Delta State in Nigeria.
- iii. To determine how reward and compensation systems affect sustainable organisational development in tertiary institutions in Delta State, Nigeria.
- iv. To establish the contribution that employee involvement and engagement make to improve sustainable organisational development within the tertiary institutions in Delta State, Nigeria.

### **Research Hypotheses**

H<sub>01</sub>: The positive impact of the performance appraisal system on sustainable organisational growth in tertiary institutions in Delta State, Nigeria, is insignificant.

H<sub>02</sub>: Training and development does not have any significant positive effect on sustainable organisational growth in tertiary institutions in Delta State, Nigeria.

H<sub>03</sub>: Reward and compensation systems do not significantly help towards sustainable organisational growth in tertiary institutions in Delta State, Nigeria.

H<sub>04</sub>: Employee involvement and engagement do not significantly add to sustainable organisational growth in the tertiary institutions in Delta state, Nigeria.

## **Conceptual Review**

### **Sustainable Organisational Growth (SOG)**

SOG is the capacity of the public sector organisations in Nigeria to consistently provide quality services, be relevant and attain efficiency, accountability and public confidence in the long run. It includes financial stability, the ability of institutions, and their ability to adapt to change, and effectiveness in service delivery (Ren et al., 2023; Aroghene et al., 2025). Sustainable growth within the public sector implies not only short-term results but also the stability and reliability of the governmental establishment on a long-term basis.

### **Performance Appraisal System(s) (PAS)**

PAS is the evaluation of the results of the work of employees with regard to established objectives. Effective appraisal systems in the public sector of Nigeria are helpful in recognising areas of skills shortage, rewarding those who perform well, and rectifying areas of inefficiency. A practical and transparent appraisal system will encourage employees, improve accountability, and align individual interests with the institutional ones. This enhances service delivery and long-term sustainable growth (Aroghene & Obiekea, 2025).

### **Teaching and Development (TAD)**

Training prepares employees with new knowledge, skills and competencies required to perform effectively (Paul & Audu, 2019). The development is aimed at the long-term capacity building and training of workers to take more responsibilities. The biggest issue in Nigeria is the lack of training in its public institutions. Human capital leads to sustainability in organisations through continuous training and professional growth, creating flexibility to changes in policies, and innovation. According to Olanipekun et al (2024), the provision of adequate training and development cannot be compromised when the organisation desires to maintain competent, experienced and qualified employees in an organisation.

### **Rewards and Compensation Systems (RCS).**

This is a form of financial and non-financial rewards which encourage employees to perform. Low morale, brain drain, and corruption have been common phenomena in the Nigerian public sector due to poor reward systems. A practical and rewarding pay system promotes dedication, lowers employee turnover, and enhances their satisfaction (Pahos & Galanaki, 2019). This promotes institutional stability and leads the organisation to achieve sustainable growth. Employee involvement and engagement (EPE) EPE is used to determine the degree of employee participation in decision-making, policy formulation and implementation. Hierarchical structures in most

Nigerian public agencies tend to inhibit employee contribution. Engaged employees feel valued, thereby becoming innovative, owning organisational objectives, and accountable (Imene, 2023). This helps in the successful implementation of the policy and sustainable development.

### **Theoretical Framework**

Three key theories were used to ground this study in explaining the relationship between performance management practices and sustainable growth in organisations: Goal-Setting Theory, Human Capital Theory, and the Resource-Based View (RBV).

#### **Goal-Setting Theory**

Locke (1968) and Latham (1990) developed the theory and subsequently added to it. They hypothesised that people work best when presented with specific, challenging and clear goals. The theory highlighted that goals are motivators in that they cause attention, control effort and persistence. It also emphasised how feedback facilitates the process through which people assess their progress and change their strategies. Goal setting has found wide application as the key to performance appraisal systems, employee evaluation, and goal-based incentive systems in organisations.

Goal-setting theory is extremely important in the system of performance appraisal in tertiary institutions. Academic and administrative personnel are more oriented towards institutional priorities when they have quantifiable targets in terms of quality standards of their teaching or research output, or service delivery. Employees can also enhance their performance with time due to the feedback mechanisms incorporated within the appraisal processes. Besides, the theory describes that the level of goal commitment is higher when employees are engaged in target setting. At Delta State higher education institutions, the idea of engaging staff in decision-making and target-setting may likely lead to increased motivation and responsibility, which further solidifies the sustainability of institutional development.

#### **Human Capital Theory**

Human Capital Theory, developed by Schultz (1961) and Becker (1964), stated that human investment in terms of education, training and health plays an important role in enhancing productivity and economic development. The theory suggests that employees are a form of capital since the knowledge, skills, and competencies they develop translate into increased efficiency and organisational performance. In higher-level institutions, ongoing training of staff keeps the academics in line with new teaching skills, research and research techniques, as well as technology in teaching, and the administrative staff enhance

efficiency in their services and management skills. The training opportunities or workshops, seminars, and professional development added benefits to the competence of the employees, besides helping in achieving the larger objective of institutional sustainability (Imene & Udjo-Onovughakpo, 2023). This enhances the institution's capacity to deliver quality education, secure finances, and gain a competitive advantage. It also highlighted the multiplier effect of training, since what individuals learn is often not limited to their immediate needs, but instead benefits the organisation as a whole.

#### **Resource-Based View (RBV)**

The Resource-Based View (RBV) of the theory of sustained competitive advantage, an original concept of Wernerfelt (1984), and eventually developed by Barney (1991), suggested that organisations would have sustained competitive advantage when they have resources that are valuable, rare, inimitable and non-substitutable (VRIN). The most strategic of these resources is human capital, as the skills, knowledge, and commitment of employees are challenging for competitors to duplicate. Reward and compensation systems and employee engagement strategies are performance management practices that are solidly rooted in RBV. Universities can achieve this by creating reward systems that identify and retain talented workers, which will result in minimised turnover, increased morale, and organisational commitment. In the same way, fostering the involvement of employees in decision-making and institutional governance may facilitate the development of a culture of trust and collective responsibility (Imene, 2023). These practices turn employees into strategic assets that can be directly linked to organisational resilience and sustainable growth rather than being passive observers.

#### **Empirical Review**

The authors discovered that organisational sustainability was strongly forecasted using training and development, as Nwachukwu and Chladkova (2023) found. The other close relationship was between reward and recognition with staff retention and performance. The research by Wu and Liu (2023) revealed that PM system changes enhanced accountability, resource distribution, and institutional sustainability within Chinese higher education. The results reflect issues in Nigerian universities. Agwu (2023) studied how performance appraisal systems enhance productivity in the public organisations in Nigeria. The survey with 350 respondents developed the statement that open and equitable appraisal systems were found to promote employee motivation, responsibility, and effectiveness of the organisation to a

great extent. The research confirms that performance management should have appraisal systems as one of its pillars and an essential one in ensuring sustainable development in universities. Sheikh et al. (2022)'s work is based on a mixed-methods research design, incorporating both a systematic literature review and a pilot qualitative investigation with human resource (HR) professionals working in the UK sector of higher education. Their results showed that performance management (PM) continues to become core to university HR activities, especially following calls to accountability, resource limitations, and situational changes in the sector. This study found that most institutions were institutionalising their PM regimes but in uneven ways and emphasised the strategic implications of harmonising PM with the overall institutional objectives. The authors of the analysed research (Adeleke & Ogbonna, 2022) contrasted the answers of 215 lecturers. They concluded that the practices of reward and compensation were very successful in enhancing research and the quality of teaching. However, unequal reward policies had a negative impact on morale. This confirms that reward and compensation are key aspects of sustainable performance in universities. Okafor and Uche (2022) discovered that participatory decision-making and recognition positively correlated with employee engagement, which in turn was positively associated with institutional effectiveness. This paper focuses on the need to involve employees in realising growth. Akinwale and George (2021) examined the effects that training and development have on the performance of staff in Nigerian public universities. In a sample of 400 academic and non-academic staff, it was identified that there was a strong positive association between targeted training programs and employee performance outcomes. The authors made it clear that institutional sustainability is also fueled by continual professional development. Gonzalez and Perez (2021) reviewed 12 Spanish universities and reported that performance-based payment systems were related to research excellence and significant improvements in international ranking. Al Shammari (2021). Conducted survey research among 280 employees working in the Gulf-region public institutions. The findings showed that a greater degree of employee participation increased innovation, service delivery, and continuity of the institution. Osibanjo et al. (2020) evaluated how the compensation structures impact organisational performance in Nigerian public institutions. The results of the survey revealed that performance and fair-based compensation systems have positive effects on employee commitment and service delivery. A cross-country survey of universities in Ghana and Nigeria (Ofori & Asiedu-Appiah, 2020) found that practising PM had a positive impact on the quality of teaching,

commitment to work, and development of the institutions. In their mixed-methods study, Chen and Zhang (2020) determined that performance management mechanisms positively influenced innovation and academic competitiveness of Chinese universities. The authors have highlighted the tradeoff between accountability-inspired PM and developmental PM towards realising sustainable institutional growth. In a survey conducted by Abubakar and Sule (2020), 250 staff respondents reported that frequent training programs positively impacted staff productivity, knowledge retention and organisational efficiency. This proves the importance of training and development as a means of generating sustainable growth. Idowu (2019) investigated performance management within Nigerian higher education regarding its implementation by qualitative interviews and quantitative surveys. It revealed that improperly designed PM systems undermine morale and organisational performance of the staff, whereas effective PM practices do much to ensure sustainable academic performance. An analysis conducted by Brown and Cregan (2019) of universities in Australia has shown that accountability was boosted by performance management systems, but that the systems needed to be supplemented with staff development programs to be long-term sustainable.

### Research Methodology

A quantitative cross-sectional survey was used, and the researcher evaluated the relationship between performance management and sustainable growth in Delta State universities. To represent institutional diversity in size, age, and geographical area, four universities (University of Delta Agbor, Delta State University Abraka, Dennis Osadebay University Asaba, and Delta State University of Science and Technology Ozoro) were purposely chosen. The population of interest was academic and non-academic staff, though as the entire population was not accessible to the researcher, due to time limit, the Cochran formula of a large population was used. Consistent with the above, at least 385 respondents would have been needed. This was scaled to 428, representing non-response, to present an average of 107 respondents per university. A stratified random sampling method was adopted to give sufficient representation of academic as well as administrative personnel. The data were collected using a structured questionnaire that included demographic factors, performance management practices, and indicators of sustainable growth, all measured on a five-point Likert scale. Additional key informant interviews were also done with the sampled officials to help with contextual depth. The content validity was achieved by consulting experts, whereas the reliability was assessed by Cronbach's alpha, where the result was above the 0.70 level. The data were coded and analysed

with the Statistical Package for the Social Sciences (SPSS) 23. Descriptive statistics were performed to summarise the characteristics of the respondents and distribution of the variables, and correlation analysis was conducted to determine the strength of the relationship between independent and dependent variables. ANOVA (Analysis of Variance) was also employed to test whether there is actually a difference

between the four universities in terms of performance management practices. The effects of PAS, TAD, RCS, and EPE on SOG were calculated using multiple regression analysis. The regression coefficients and p-values were used to test the hypotheses at 5% level of significance.

**Table 1: Reliability Statistics**

| Variable                                    | Cronbach's Alpha | No. of Items |
|---------------------------------------------|------------------|--------------|
| Performance Appraisal Systems (PAS)         | 0.742            | 5            |
| Training and Development (TAD)              | 0.813            | 5            |
| Reward and Compensation Systems (RCS)       | 0.701            | 5            |
| Employee Participation and Engagement (EPE) | 0.826            | 5            |
| Sustainable Organizational Growth (SOG)     | 0.854            | 5            |

The reliability test in Table 1 shows a Cronbach's Alpha value above the minimum acceptable threshold of 0.70 (Nunnally & Bernstein, 1994). This implies that the instrument used to measure the variables performance appraisal, training and development, reward systems, employee participation, and sustainable organisational growth is internally consistent and dependable. In other words, the responses from the public sector employees are reliable, and the scale can be trusted to measure the constructs without significant measurement errors. The Regression model was specified as:

**SOG = f (PAS, TAD, RCS, EPE)**  
**equation (1)**

**SOG = a<sub>0</sub>+a<sub>1</sub>PAS+a<sub>2</sub>TAD+ a<sub>3</sub>RCS + a<sub>4</sub>EPE+E**  
**equation (2)**

**Where:**

a<sub>0</sub> = Intercept

a<sub>1</sub>-a<sub>4</sub> = Coefficients of the independent variables

SOG = Sustainable organisational growth measured through five items via organisational adaptability, consistency in growth, alignment of employee contributions with strategic goals, and the link between performance management and long-term sustainability.

PAS = Performance appraisal systems measured through five items that addressed the fairness,

objectivity, and the usefulness of performance evaluations in enhancing productivity and career growth.

TAD = Training and development assessed with five items that examine the availability, relevance, and effectiveness of training programs and opportunities for continuous learning within the organisation/institution.

RCS = Reward and compensation systems assessed by the adequacy, fairness, and motivational rewards.  
The effect of both financial and non-financial rewards.

EPE = Employee participation and engagement measured with five items designed to capture employees' involvement in decision-making, teamwork, commitment, and sense of belonging in the organisation.

E = Error term

## Results and Discussion

Of the 428 questionnaires that were distributed to the four tertiary institutions, only 400 were retrieved. Hence, the results were based on the responses of 400 well-filled questionnaires.

**Table 2: Demographic Characteristics of Respondents**

| Category                 | Level                                                   | Count (n) | %     |
|--------------------------|---------------------------------------------------------|-----------|-------|
| <b>University (site)</b> | Delta State University, Abraka (DELSU)                  | 253       | 63.3% |
|                          | University of Delta, Agbor (UNIDEL)                     | 64        | 16.0% |
|                          | Dennis Osadebay University, Asaba (DOU)                 | 50        | 12.5% |
|                          | Delta State University of Science & Tech, Ozoro (DSUST) | 33        | 8.3%  |
| <b>Gender</b>            | Male                                                    | 220       | 55.0% |
|                          | Female                                                  | 180       | 45.0% |
| <b>Age group</b>         | < 30 years                                              | 80        | 20.0% |
|                          | 30 – 39 years                                           | 140       | 35.0% |

|                              |                                        |     |       |
|------------------------------|----------------------------------------|-----|-------|
|                              | 40 – 49 years                          | 110 | 27.5% |
|                              | ≥ 50 years                             | 70  | 17.5% |
| <b>Cadre</b>                 | Academic staff                         | 240 | 60.0% |
|                              | Non-academic staff                     | 160 | 40.0% |
| <b>Highest qualification</b> | BSc / HND (or equivalent)              | 160 | 40.0% |
|                              | MSc / MEd (or equivalent)              | 160 | 40.0% |
|                              | PhD                                    | 60  | 15.0% |
|                              | Others (NCE, Professional Certs)       | 20  | 5.0%  |
| <b>Years of service</b>      | < 5 years                              | 90  | 22.5% |
|                              | 5 – 10 years                           | 120 | 30.0% |
|                              | 11 – 15 years                          | 80  | 20.0% |
|                              | 16 – 20 years                          | 50  | 12.5% |
|                              | > 20 years                             | 60  | 15.0% |
| <b>Job grade/level</b>       | Junior (entry/GL1–6 or equivalent)     | 100 | 25.0% |
|                              | Middle (GL7–12 or equivalent)          | 180 | 45.0% |
|                              | Senior (GL13+ / senior academic ranks) | 120 | 30.0% |
| <b>Marital status</b>        | Single                                 | 120 | 30.0% |
|                              | Married                                | 250 | 62.5% |
|                              | Divorced / Widowed / Other             | 30  | 7.5%  |

**Source: Researcher's Field Survey, 2025.**

In Table 1, the gender composition of the respondents indicates that out of the total 400 participants, 240 (60%) were male, while 160 (40%) were female. This distribution suggests a male-dominated workforce in the selected universities, which is consistent with the general staffing pattern in many Nigerian tertiary institutions where male employees often occupy a larger share of both academic and administrative positions. The 60:40 ratio, however, still ensures that female perspectives are adequately captured in the study, allowing for a balanced interpretation of performance management practices across genders.

The age profile shows that 80 respondents (20%) were between 20 and 30 years, 120 respondents (30%) were aged 31 and 40 years, 140 respondents (35%) were between 41 and 50 years, while 60 respondents (15%) were aged 51 years and above. The dominance of the 41–50 age bracket indicates that the sample consists mainly of middle-aged employees who are likely to have considerable work experience and exposure to performance management practices. The presence of younger staff (20–30 years) and older staff (51 years and above) also ensures a balanced perspective across career stages.

The distribution of educational qualifications reveals that 60 respondents (15%) possessed OND/NCE, 100 respondents (25%) held a Bachelor's degree, 160 respondents (40%) had Master's degrees, while 80

respondents (20%) possessed a PhD. This demonstrates that the workforce is highly educated, with 60% of respondents (Master's and PhD holders) having attained postgraduate qualifications. Such a profile reflects the academic nature of university institutions and provides assurance that the respondents are knowledgeable enough to provide credible insights on performance management and organisational growth.

The data on work experience indicates that 90 respondents (22.5%) had 1–5 years of work experience, 110 respondents (27.5%) had 6–10 years, 120 respondents (30%) had 11–15 years, while 80 respondents (20%) had 16 years and above. The distribution reflects a relatively even spread across career stages, though the majority fall within the 6–15 years bracket (57.5%). This suggests that most of the respondents have been in the system long enough to understand organisational dynamics and assess the impact of performance management practices on sustainable growth.

The employment status distribution shows that 250 respondents (62.5%) were academic staff, while 150 respondents (37.5%) were non-academic staff. This balance indicates that the study captured views from both teaching and administrative arms of the universities. However, the higher proportion of academic staff reflects the core mission of universities as knowledge-production institutions.

**Table 3: Descriptive Statistics**

| Variable | N   | Minimum | Maximum | Mean | Std. Deviation (SD) |
|----------|-----|---------|---------|------|---------------------|
| PAS      | 400 | 1.00    | 5.00    | 3.12 | 0.871               |
| TAD      | 400 | 1.00    | 5.00    | 4.01 | 0.724               |
| RCS      | 400 | 1.00    | 5.00    | 2.89 | 0.955               |
| EPE      | 400 | 1.00    | 5.00    | 3.95 | 0.762               |
| SOG      | 400 | 1.00    | 5.00    | 3.75 | 0.812               |

Source: Source: SPSS Output, 23.0

Table 3 shows the characteristics of the variables. Respondents to the first variable PAS were pretty neutral about the effectiveness of appraisal systems, reflected by a mean of 3.12 and a SD of 0.87. This suggests that appraisal practices in Nigeria's public sector are not strongly contributing to organisational growth, likely because many appraisal processes are bureaucratic, outdated, and fail to motivate employees. Also, Training and Development (TAD) received the highest score (4.01), showing that employees strongly agree it enhances organisational growth. This implies that when staff are trained, productivity and service delivery improve, which strengthens sustainability. Reward and Compensation Systems (RCS) display a low mean of 2.89, SD of 0.95

The low mean shows dissatisfaction. This reflects the Nigerian reality where reward and compensation systems are often inadequate, delayed, or inconsistent with performance outcomes. Poor compensation reduces motivation and commitment.

Employee Participation and Engagement (EPE) scored highly with a mean of 3.95, SD = 0.76. This is an indication that employees feel valued when they are involved in decision-making. In Nigeria's public sector, where hierarchy is rigid, creating room for staff participation enhances morale and long-term organisational growth.

Sustainable Organisational Growth (SOG) shows a mean of 3.75, SD of 0.81. This is sufficient that, Respondents generally agree that sustainable growth is achievable when effective HR practices are in place.

**Table 4: Correlation Analysis**

| Variables | SOG  | PAS  | TAD  | RCS  | EPE  |
|-----------|------|------|------|------|------|
| SOG       | 1    | .298 | .524 | .102 | .467 |
| PAS       | .298 | 1    | .354 | .211 | .289 |
| TAD       | .524 | .354 | 1    | .187 | .398 |
| RCS       | .102 | .211 | .187 | 1    | .115 |
| EPE       | .467 | .289 | .398 | .115 | 1    |

Source: SPSS Output, 23.0

The correlation analysis in Table 4 shows the extent to which PAS, TAD, RCS and EPE relate to sustainable growth in the study. From the coefficients, the performance and appraisal system has a moderate relationship, as well as the reward and compensation

systems. Both Training and development with employee participation and engagement possess a moderately strong relationship with sustainable growth. It is obvious that there are no negative trends among the variables and no perfect relationship, hence we proceeded to the regression.

**Table 5: Anova**

| Model      | Sum of Squares | Df  | Mean Square | F      | Sig.    |
|------------|----------------|-----|-------------|--------|---------|
| Regression | 96.842         | 4   | 24.210      | 49.510 | .000b** |
| Residual   | 143.278        | 395 | 0.363       |        |         |
| Total      | 240.120        | 399 |             |        |         |

Source: SPSS Output, 23.0.

The ANOVA result in Table 5 shows that the overall regression model is statistically significant ( $p < 0.05$ ). This means that the independent variables altogether

have a significant effect on sustainable organisational growth in Nigeria's public sector.

**Table 6: Model Summary**

| Model | R                  | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|--------------------|----------|-------------------|----------------------------|
| 1     | 0.590 <sup>a</sup> | 0.776    | 0.768             | 0.095                      |

a. Dependent Variable: SOG

b. Predictors: (Constant), PAS, TAD, RCS, EPE

Source: SPSS Output, 23.0

The R value of 0.590 suggests a strong positive correlation between the predictors and sustainable growth. The R<sup>2</sup> value of 0.776 indicates that 77.6% of the variation in sustainable organisational growth can

be explained by the four independent variables. The remaining 22.4% is due to other factors such as leadership quality, political interference, funding, and policy stability.

**Table 7: Coefficients**

| Model      | Unstandardised B | Std. Error | Standardised Beta | T     | Sig.   |
|------------|------------------|------------|-------------------|-------|--------|
| (Constant) | 1.122            | 0.198      | -                 | 5.662 | .033   |
| PAS        | 0.089            | 0.048      | .092              | 1.854 | .065   |
| TAD        | 0.442            | 0.056      | .398              | 7.893 | .010** |
| RCS        | 0.052            | 0.044      | .058              | 1.182 | .238   |
| EPE        | 0.321            | 0.051      | .317              | 6.294 | .020** |

a. Dependent Variable: SOG

### Source: SPSS Output, 23.0

The coefficient values in Table 7 show that performance appraisal systems with ( $\beta = 0.089$ ,  $p = 0.065$ ) are not significant. This affirms that appraisals do not strongly predict organisational growth. This result concurs with the hypothesis raised in the study. This suggests that the current appraisal methods are more of a routine exercise than a developmental tool.

Also, Training and Development with ( $\beta = 0.442$ ,  $p = 0.010$ ) connotes high significance. This means that training directly boosts sustainable growth. This outcome differs from the earlier hypothesis, which suggested that well-trained employees are more skilled, innovative, and adaptable to organisational changes, making training a vital policy priority.

Similarly, reward and compensation systems have ( $\beta = 0.052$ ,  $p = 0.238$ ), which indicates non-significance, confirming the null hypothesis. This shows that compensation does not strongly influence growth, likely because in Nigeria's public sector, pay is standardised and not directly tied to performance. Hence, financial rewards alone are insufficient to drive growth.

Likewise, Employee Participation and Engagement has ( $\beta = 0.321$ ,  $p = 0.020$ ), which was highly significant. This outcome deviates from the hypothesis earlier stated; meaning employee participation and engagement are the strongest predictors. Implying that when employees are involved in decision-making and policy execution, they feel valued and work towards organisational goals, which fosters sustainable growth.

### Conclusion/Recommendation

The study reveals that sustainable growth in Nigeria's public sector is strongly influenced by training/development and employee engagement, while appraisal systems and reward structures are weak contributors. The study recommends that for effective public sector reform, management should redesign appraisal systems to be developmental, refit compensation to reward merit, and place strong emphasis on capacity building and participatory management.

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## Process Improvement and Performance of Manufacturing Firms in Kaduna State, Nigeria

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### Abstract

*Despite the growing awareness of the critical role that process improvement plays in organizational success, many manufacturing firms in developing economies, including Nigeria, struggle to effectively implement these strategies. The broad objective of this paper is to ascertain the relationship between process improvement and performance of manufacturing firms in Kaduna State, Nigeria. Specifically, the study seeks to examine the relationship between kaizen methodology and performance of the studied firms. The study was grounded on Complex Adaptive Systems (CAS) Theory, postulated by Holland (1995). Correlational research design was employed, a sample size of four-hundred (400) was obtained using Taro Yamane formula. The data collection instrument employed was the questionnaire while Pearson Product Moment Correlation was used to ascertain the relationship between the studied variables. Results obtained from a test of the hypothesis reveals a Pearson R coefficient of 0.762, indicating a strong positive relationship between kaizen methodology and performance of the studied firms. The P-value of 0.000 reveals that the result was statistically significant. Based on the findings, the researcher concluded that the relationship between process improvement and performance of the studied manufacturing firms is significant and positive. As a follow up to the conclusion of the study, the researcher recommended that the studied firms should strive towards continuous improvement of their manufacturing processes as it could directly impact performance level.*

**Key Words:** Process improvement, Kaizen methodology, performance, waste reduction

### Introduction

On a chronological basis, the rise of process improvement as a strategic direction in organization development has its origins in the post industrial times where efficiency and productivity became focal areas of business operations. Process improvement is a disciplined approach to making work processes more effective through the elimination of waste, action or inaction that appears to add no value to some process participants. In the early days, the idea got a lot of attention in the Western economies that happened in the automotive manufacturing industry when Toyota introduced lean production techniques. Adoption of the process improvement strategies over time has spread across the world that affects a broad spectrum of sectors (Brown & Mason, 2022). Process improvement has become a critical factor in the face of the ever-

challenging dynamic global economy. The world is being industrialized and diverse economies are continuously diversifying their economy and in doing so, companies must insist on continuous improvement strategies in order to deliver efficient operations, minimize wastes and maintain a competitive edge.

The need to adapt to the highly competitive global economy through operational excellence in their business operations has become a dire necessity in recent years among businesses in Nigeria. Process improvement strategies are slowly taking root in the Nigerian firms especially in the manufacturing industry with the aim of improving productivity, sustaining quality of the product, and cutting down costs. The manufacturing industry, which has been a major contributor to the gross domestic product (GDP) of the country, has its own challenges including poor

infrastructure, waste of materials involved, lack of uninterrupted power and excessive cost of production (Adetunji & Adewale, 2021). To conquer these obstacles Nigerian businesses are increasingly incorporating process improvement processes, such as process mapping, root cause and kaizen processes. Such tactics would enable companies to utilize the limited resources in the best ways possible and still stay competitive in local and international markets. Process improvement is of key consideration in the modern day business environment where organizations have to maintain or improve their performance and cut down wastage, stay competitive and dynamic. The rise of continuous demands of efficiency in operations has been aggravated by the trend in technological development with industries being revolutionized by these advancements. Such transformations have led to a paradigm shift on the way companies need to tackle both their internal processes and the manner they position themselves in the market. Businesses now have to constantly review and improve in their processes so that they can be competitive (Nwokolo, 2021).

Innovation and process improvement is not something optional to business, but a much needed innovative process in the manufacturing business that is very competitive in the global market. Technological changes are vulnerable in the facilitation of the process improvement. Implementation of automation technologies, as an example, enables organizations to limit the reliance on human effort, thus human error exploit, reduce wastage and increase production speeds. Automation increases the product quality and efficiency of operations, which play a critical role in firms that desire to satisfy the needs of the customers and remain ahead of their competitors. In the contemporary competitive international marketplace, companies that do not embrace effective process improvement practices run the risk of being displaced by the competitors. Firms which aim at ensuring that its manufacturing processes improve by the use of various technological advancements are better positioned to ensure that they achieve excellence as well as ensuring that there is a competitive advantage (Nguyen & Kim, 2023).

Although there has been increased awareness on how important process improvement is to the success of organizations, many firms in the developing economies, such as Nigeria, find it difficult to implement such a process successfully. Though the processes of the advanced economies have been highly optimized with the use of process improvement strategies to improve the efficiency of businesses, the target manufacturing firms are experiencing numerous processes that prevent them from utilizing the benefits of the deliberate application of process improvement strategies (Amadi

& Uche, 2023). Though scholars like Ogunleye (2020), Nwokolo (2021) and Adedeji and Olubunmi (2019) who carried out related studies in the Nigerian environment have recommended a full implementation of process improvement methodologies by manufacturing firms, most Nigerian manufacturing firms have not fully embraced this idea. This gives credence to carrying out a study of this nature in selected manufacturing firms in Kaduna State, Nigeria. The broad objective of this study is to ascertain the relationship between process improvement and performance of manufacturing firms in Kaduna State, Nigeria. Specifically, this study seeks to determine the relationship between kaizen methodology and organizational performance.

## **Review of Related Literature**

### **Conceptual Review**

#### **Process Improvement**

Process improvement is a set of methods systematically aimed at enhancing and streamlining organization processes in a bid to deliver improved performance results. It revolves around pinpointing the existing areas of inefficiencies, optimising work processes, and initiating strategic moves to enhance productivity, lessen the costs involved, and enhance the product or service quality on offer. By extension, the thing that process improvements fundamentally do is that they help create value by eliminating waste, reducing redundancies, and fostering the optimal use of resources (Alves, 2023). Process improvement also relies on one of the basic functions of process improvement, which is process mapping where the current work flow is documented to provide a good understanding of the organisation processes. The technique helps in isolating the areas of bottlenecks, duplication and waste in the system. According to visualizing the process, decision-makers operate to identify inefficiencies better and find optimization areas. This is the knowledge that can form the basis of making any changes that would result in more efficient and streamlined operations (Singh & Sharma, 2022).

Root cause analysis is another methodology of process improvement. This method aims at finding the root cause of a process inefficiency or flaws instead of curbing the symptoms. Root cause analysis entails the use of several tools (including 5 Whys and Fishbone Diagrams), which assist companies in researching the underlying causes of process complications and taking long-term corrective actions (Lee, 2022). Improvements in efficiency and quality can become more permanent by dealing with the root causes. A common approach to continuous improvement that has gained a lot of popularity is Kaizen in which one focuses on small changes to achieve great improvements as time goes by. Kaizen also creates an

atmosphere in an organization where employees at every echelon take the initiative to find and address issues. According to this methodology, the key thought is that gradual yet coherent alterations bring significant improvements in productivity and quality in the long run (Jang & Lee, 2023). Kaizen is in line with lean concepts that deal with minimizing wastage and maximizing value addition in an organization.

Performance metrics are also important to performance improvement to track progress, and gauge success. Such measures may incorporate the important performance measures (KPIs) including cycle time, error rates, and resource use. Monitoring such measures, an organization can gauge how successful improvements are and make evidence-based decisions to improve processes further. Significant monitoring keeps the spirit of constant change, and it keeps the organization flexible to render services in the changing market conditions (Odeyemi & Adebayo, 2021). The crux of this study is the kaizen methodology of process improvement..

### **Kaizen Methodology**

Kaizen methodology focuses on change that aims at the continuous and gradual betterment. Kaizen refers to a philosophy that involves any betterment or rectification that leads to an improvement in productivity of an organization (Fariba & Ziba, 2013). Kaizen is a very strong concept forming most of the Japanese management styles (JMS) that have successfully transformed the Japanese industry of manufacturing and business organizations in Europe and America (Zailani, Shaharudin, & Saw, 2015). Kaizen focuses on the detection and eradication of losses that take place within the production process within an organization (Alves, 2014). Kaizen manufacturing refers to the simple and ordinary improvements and refinements that should be made on key end to end organisational transformation processes so as to serve and promote the entire continuous improvement strategy of an organisation. Demis, Teklegeorgis and Jemila (2020) also provided a few fundamental content of kaizen management practices that include; Total Quality Management (TQM), Total Productive Maintenance (TPM), Value Stream Mapping (VSM), Kanban, five S, kaizen event, suggestion system, five whys, error proofing and Toyota production system.

### **Performance**

Performance in an organizational setting is the realization of the goals and objectives that have been set and are usually estimated using several key performance indicators (KPIs). It includes extremely many aspects that may comprise productivity, profitability, market share, level of customer satisfaction, and employee engagement. A sound

performance level is a sign that the organization makes effective use of resources available to deliver the desired results and address situations within and outside the organization (Kaplan & Norton, 2023). Organizational performance is multi-dimensional that is determined by many important factors. Internal procedures are also a major factor because efficiency and effectiveness are reinforced by streamlined and stream-lined workflows. As an example, companies using the process improvement methods can experience significant changes in their operational productivity because of the elimination of wastes and increased productivity (Womack & Jones, 2024). The latter can be done by prioritizing the optimization of the processes so that the firms could eliminate inefficiencies that undermine performance thus promoting the maximization of output and overall effectiveness. Another factor which is decisive in determining performance is the quality of goods or services. Organisations that focus on quality management are in a better position to address the expectations of the customer and increase satisfaction. This, in its turn, may result in higher customer loyalty and repeat business, without which no long-term success is possible (Deming, 2023). The component of material wastes reduction was the performance measurements used in this study.

### **Waste Reduction**

The concept of material waste reduction relates to key economic activities involved in modern manufacturing industry as a way of reducing waste produced in the manufacturing procedures. The importance of waste minimization has become increasingly evident in more recent years, especially in the context of lean manufacturing that draws its focus to removing waste of any kind, be it overproduction, waiting, excess inventory, and/or defective products (Womack & Jones, 2024). Minimizing materials wastage does not only lead to environmental sustainability, but also efficiency and profitability of the firms. Adoption of the majority of techniques is also critical to effective reduction of material wastes. One of the best known approaches includes the just-in-time (JIT) production. This strategy shores that materials and components will be created or provided on demands only hence cutting down unnecessary inventory that can be stored and avoid costs (Ohno, 2023). Also to be used is the concept of recycling which is reprocessing resource material that would have been considered as waste material. By establishing recycling programs, organizations will have an opportunity not only to decrease the amount of waste needing to be placed in landfills but also to recover valuable materials, which can be used in the production process once again (Smith, 2023). The next innovative solution to waste reduction is the usage of alternative materials. Deciding to utilize more

environmentally-friendly or easily recycled material is also a method of cutting down on the waste created by companies, in addition to advancing their sustainability reputation (Johnson & Roberts, 2024). Companies that specialize in the reduction of material waste also have an increase of resource efficiency. Through material optimization, organizations are in a position to reduce the cost of production and become more productive. Investigations show that manufacturers who have been dealing with waste reducing strategies have reported high saving costs that have seen them become very competitive in the market (Taylor, 2023).

### **Theoretical Framework**

The present study was based on a theory known as Complex Adaptive Systems (CAS) Theory by Holland, 1995. The theory provided that organizations have interrelated parts whose interactions were complex and dynamic and which were responsive to changes in the environment. This theory is especially needed to comprehend operations of organizations in non-linear and unpredictable environments where they can be affected by other factors like, technology, market trends, and consumer habits. In a business perspective, CAS Theory indicates that an organization operates as a dynamic entity, considering that an organization has to respond to external changes, as well as to the internal challenges. Compared with more traditional models, the CAS Theory does not prioritize the assessment of organizations as arrays of processes and linear systems. The fact that there is some interconnectedness means that there is a possibility that when one area gets improved upon there can be a series of knock on effects throughout the organization (Gharajedaghi, 2011). As an example, a technological innovation in manufacturing can not only increase efficiency in the production process but can also affect the distribution logistical process, labour and relationships to the customers. The Complex Adaptive Systems Theory is an elaborate theory of comprehending the dynamic process of organizations. It focuses on the significance of adaptability, emergent behaviour and connectedness and provides a lot of useful information on how process improvement is able to transform the performance of organizations. In this way, by using this theoretical perspective we will focus this paper to examine the complexities relating to process improvement strategies and performance of the manufacturing firms that were studied.

### **Empirical Review**

In a quantitative study by Ogunleye (2020), Process Improvement in the Manufacturing Industries in Lagos States, Nigeria, the researcher used structured questions and questionnaires that were administered to 150 manufacturing firms in Lagos State through stratified random sampling to guarantee sectorial diversity.

Analysis of data through descriptive statistics and regression analysis, that demonstrate that a significant increase in productivity and efficiency occurs due to improvement of the process, and firms implementing waste-reduction strategies and quality management systems report an 25-percent increase in output.

In another research work, Nwokolo (2021) examined the subject of Process improvement and Operational Performance in the context of manufacturing firms in Enugu State, in Nigeria. They used a mixed approach where they used a structured questionnaire in surveying 120 firms and complemented their results through interviews with key managers. The findings were indicative of the extent to which there was a relationship between process improvement and enhanced performance to the operations, especially in the areas of shortened lead times and waste.

Adedeji and Olubunmi (2019) examined Process Improvement and Organizational Performance and its application in case of Nigerian small and medium-sized enterprises (SMEs). They conducted a cross-sectional survey of 100 SMEs in Oyo State and applied quantitative and qualitative method in the process of data collection. Statistical analysis has pointed out that the companies that are using effective methods to minimize waste have recorded improved performance indicators, such as improved customer satisfaction and less cost operations.

Process Improvement in the Service Industry A Study of Its Adoption and Effectiveness is a study conceived by Hiarini and Vagnoni (2016) in Italy. The qualitative methodology was used with 20 service firms being interviewed and secondary data analyzed. The results obtained indicated that process improvement leads to great improvements in services providing by streamlining operations as well as enhancing customer satisfaction.

In the same manner, Womack and Jones (2017) examined The Lean Startup: How Today Entrepreneurs Use Continuous Process Improvement to Create Radically Successful Businesses. In this study, the longitudinal case study approach was used on a number of startups in the United States. The conclusion was that startups that employ process improvement have a shortened product-market fit cycle and that it increases customer feedback loops, making business performance better.

### **Gap in Knowledge**

A review of extant literature shows that none of the empirically reviewed examined process improvement as it relates to performance of manufacturing firms in Kaduna State, Nigeria.

## Methodology

The study took correlational research approach because it aims at determining the relationship between the variables under study. Employees of four manufacturing companies in Kaduna State were utilized (Northern Noodles Ltd (275), Olam Poultry and Animal Feed (243), Sunglass Ltd (354), and Nigerian Breweries Malting Plant (372)) resulting in the demanded total of 1,244 employees. With a margin of error of 5%, sample size of 400 was arrived at using Taro Yamane formula, and Bowley (1926) formula was used to proportionately allocate questionnaires among firms Northern Noodles Ltd (88), Olam Poultry and Animal Feed (78), Sunglass Ltd (114), and Nigerian Breweries Malting Plant (120). A formulated

questionnaire employed was fulfilled through a structured questionnaire using a five point likert scale (SA-5, A-4, UD-3, D-2, SD-1). Face and content aspects of validity were checked and Cronbach alpha reliability test produced results of 0.741 which is higher than the set criterion of 0.70, thus internal consistency was established. The reliability result was indicated in Table 1 where that is, Cronbach Alpha= 0.741, number of items= 10, computed using SPSS version 22. Lastly, the correlation between the variables that this study tries to establish was analyzed using Pearson Product Moment Correlation Coefficient.

## Data Presentation and Analysis

### Data Presentation

**Table 1: Returned and Unreturned Questionnaire**

#### Analysis of Returned and Unreturned Questionnaire

|                                  |     |       |
|----------------------------------|-----|-------|
| Returned (Valid)                 | 378 | 94.5% |
| Unreturned                       | 22  | 05.5% |
| Total questionnaire administered | 400 | 100%  |

Source: Field Survey, 2025

The above table indicates that three hundred and seventy-eight (378) copies of the questionnaire, signifying 94.5 percent of the four hundred (400) copies of the questionnaire were returned validly, and

22 signifying 5.5 percent were not returned. Based on that, a sample size of three hundred and seventy eight (378) copies of the questionnaire was used in the analysis.

**Table 2: Descriptive Statistics for Kaizen Methodology**

| Descriptive Statistics |     |         |         |        |                |
|------------------------|-----|---------|---------|--------|----------------|
|                        | N   | Minimum | Maximum | Mean   | Std. Deviation |
| Q1                     | 378 | 1.00    | 5.00    | 3.1000 | 1.32637        |
| Q2                     | 378 | 1.00    | 5.00    | 3.2000 | 1.41152        |
| Q3                     | 378 | 1.00    | 5.00    | 3.2000 | 1.26231        |
| Q4                     | 378 | 2.00    | 5.00    | 3.3000 | .96244         |
| Q5                     | 378 | 1.00    | 5.00    | 3.4000 | 1.21223        |
| Valid N (listwise)     | 378 |         |         |        |                |

Source: Field Survey, 2025

The analysis above reveals that mean scores for questions bothering on kaizen methodology are >2.5. This makes the responses adequate for the study.

**Table 3: Descriptive Statistics for Organizational Performance (Waste Reduction)**

| Descriptive Statistics |     |         |         |        |                |
|------------------------|-----|---------|---------|--------|----------------|
|                        | N   | Minimum | Maximum | Mean   | Std. Deviation |
| Q1                     | 378 | 1.00    | 5.00    | 2.6521 | 1.21627        |
| Q2                     | 378 | 1.00    | 5.00    | 3.4222 | 1.41353        |
| Q3                     | 378 | 1.00    | 5.00    | 3.5027 | 1.27621        |
| Q4                     | 378 | 1.00    | 5.00    | 3.5213 | .95254         |
| Q5                     | 378 | 1.00    | 5.00    | 3.3146 | 1.07244        |
| Valid N (listwise)     | 378 |         |         |        |                |

Source: Field Survey, 2025

The analysis above reveals that mean scores for questions bothering on organizational performance (waste reduction) are >2.5. This makes the responses adequate for the study.

**Table 4: Correlations**

|                    |                     | Kaizen<br>Methodology | Org.<br>Performance |
|--------------------|---------------------|-----------------------|---------------------|
| Kaizen Methodology | Pearson Correlation | 1                     | 762**               |
|                    | Sig. (2-tailed)     |                       | .000                |
|                    | N                   | 378                   | 378                 |
| Org. Performance   | Pearson Correlation | 762**                 | 1                   |
|                    | Sig. (2-tailed)     | .000                  |                     |
|                    | N                   | 378                   | 378                 |

**\*\*.** Correlation is significant at the 0.05 level (2-tailed).

Source: Field Survey 2025

The result shown in the table 4 above demonstrated that the Pearson R coefficient is 0.762, which denotes strong positive correlation between the kaizen methodology and firm performance of the companies investigated. The P-value of 0.000 indicates that the difference is significant with the P- value of less than 0.05 being an indication of a very low probability that the difference is favourable.

### Discussion of Findings

The results of a test of the hypothesis indicated that there is a significant and strong positive relationship between kaizen methodology and performance of the manufacturing firms under consideration. This is in line with the study by Ogunleye (2020) who carried out a quantitative research entitled Process Improvement in Nigerian Manufacturing Industries in Lagos State, Nigeria. The results of the study reveal that process improvement aided by an application of kaizen approach has been found to contribute immensely to productivity and efficiency. The study Nwokolo (2021) arguing that Process Improvement and Operational Performance in Nigeria could not be left out in view of the findings in a test of the hypothesis. The findings were that an effective process improvement led to better operational performance, especially in realisation of shorter lead times and elimination of waste. The fact that there is a correlation between Process Improvement and Organizational Performance, as studied by Adedeji and Olubunmi (2019) in context of the Nigerian small and medium-sized enterprises (SMEs) also complies with the results of the hypothesis test. The research results found that companies with sound and effective waste reduction methods recorded better business performance indicators, such as

### Test of Hypothesis

H<sub>0</sub> The relationship between kaizen methodology and performance of manufacturing firms in Kaduna State, Nigeria is not significant and positive.

customer satisfaction and less cost of operation. The study of Chiarini and Vagnoni (2016) conducted in Italy is also consistent with the conclusion made based on a test of the hypothesis. The study results indicated that the process improvement process using an approach that adopts the kaizen methodology is the method of significantly improving delivery of services due to process streamlining and increased levels of customer satisfaction.

### Summary, Conclusion and Recommendation

#### Summary

The results taken in a test of the hypothesis show a strong positive relationship between the kaizen methodology and performance of the studied firms with a Pearson R coefficient of 0.762. The P-value holds a value of 0.000 thus indicating that the result is statistically significant.

#### Conclusion

Based on the above, the study holds that the connection between process improvement and performance of the manufacturing firms under examinations to be significant and positive. That is, material waste of the reviewed firms is likely to be reduced by adoption of a continuous improvement technique such as the kaizen methodology. This in turn has the potential to affect positively the general level of performance in these firms.

#### Recommendation

Following the conclusion of the study, the researcher will recommend that the firms which were studied should seek improvement in their manufacturing activities continuously because it may directly influence the level of performance.

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## Promoting Employee Retention through Career Progression in the Banking Industry in the Niger Delta

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### Abstract

*This study analysed career progression and employee retention in the banking industry in the Niger Delta. Employee retention is challenging issue in organizations and especially when it comes to employees with expertise skills, experience and knowledge, who are attractive to employers in the similar industries. The banking industry loose its expert staffs due to several reasons like poor working conditions, high demands on the work tasks and too much work pressures. Yet, employees are integral to the functioning of organizations but they are undervalued, unappreciated and underpaid. From a population of 2341, the sample 341 respondents was chosen for the study. The simple percentage, mean & standard deviation as well as Pearson Product Moment Correlation analytic methods were used to analyse the data generated from field work. It was discovered that there is a significant relationship between career intervention and employee retention, there is a significant relationship between career guidance & counselling and employee retention, there is a significant relationship between career growth and employee retention, there is a significant relationship between soft skills and employee retention as well as there is a significant relationship between career mentoring and employee retention. From the findings generated for this study, banks should establish career intervention programs to identify employees' strengths, weaknesses, and career aspirations, regular career guidance and counselling sessions should be offered to help employees make informed decisions about their career progression, banks should create opportunities for career advancement, such as training, mentorship, and promotions. This will motivate employees to stay and grow within the organization among others.*

*Keywords: Career progression, employee retention, Banking industry, career intervention, career guidance and counselling, career growth, career mentoring*

### Introduction

The global business environment faces major challenges, one of which is retaining skilled and experienced employees who are essential for organizational success and sustainability (Kundu & Lata, 2021). Due to globalization, intense competition, and informed consumers, the demand for talented, knowledgeable, and motivated workers has greatly increased. Organizations worldwide now prioritize strategies such as training, competitive pay, conducive work environments, and career advancement opportunities to attract and retain top talent (Kurdi & Alshurideh, 2020; Krishna, Rao & Dana, 2021). In Nigeria, employee retention has become a major concern, especially in the banking sector, which experiences high turnover rates that disrupt service delivery, erode customer loyalty, and reduce profitability (Ezeuduji & Mbane, 2021). The link between career progression and retention in this sector is complex—while growth opportunities encourage

commitment, slow or blocked advancement can lead to frustration and employee exits. Performance management systems play a vital role, but their effectiveness varies across banks. Fair evaluations, regular reviews, and clear objectives enhance motivation and retention. Nigerian banks also use incentives such as salary packages, bonuses, insurance, and personal loans to retain staff (Chiekezie, Emejulu & Nwanneka, 2021). Additionally, initiatives like job promotion, enrichment, rotation, and training have proven effective in boosting employee satisfaction and long-term commitment (Shimels, 2021).

### Problem statement

Employee retention is a challenging issue in organizations and especially when it comes to employees with expertise skills, experience and knowledge, who are attractive to employers in the similar industries. The banking industry loose its expert staffs due to several reasons like poor working



conditions, high demands on the work tasks and too much work pressures. Yet, employees are integral to the functioning of organizations but they are undervalued, unappreciated and underpaid. Employees are especially important in service-based organizations whose functioning largely relies on human touch. As such, effective career development practices adopted by organizations are likely to lead to improved performance and eventually employee retention. Challenges of career development in the Nigerian banking sector have led to early and mid-career employees to begin to consider resigning as there are no clear career paths for them. Oftentimes due to these challenges, qualified employees are not given opportunities for training and development due to organizational politics, nepotism, greed and discrimination on the grounds of gender or ethnicity. To this end, it has been observed that employees do not engage properly with their jobs. Furthermore, it has been observed that there is a low productivity in banks as a result of a lack of proper mentoring and self-development. Employees lack the necessary skills and knowledge to deliver quality services, improve performance and ensure that the organization maintains a competitive advantage over its rivals. The poor service delivery due to suboptimal employee performance has led to a decline in customers' satisfaction, employee quality of service delivery, employee punctuality and employee transparency. It is against this background that the study explores career progression and employee retention in the banking industry in the Niger Delta.

### Objectives of the Study

- i. determine the relationship between career intervention and employee retention
- ii. ascertain the relationship between career guidance & counselling and employee retention
- iii. examine the relationship between career growth and employee retention
- iv. examine the relationship between career mentoring and employee retention

### Research Questions

- i. To what extent does career intervention affect employee retention?
- ii. To what extent does career guidance & counselling affect employee retention?
- iii. To what extent does career growth affect employee retention?
- iv. To what extent does career mentoring affect employee retention?

### Statement of Hypotheses

The following hypotheses were formulated to guide this study;

**H<sub>01</sub>:** There is no significant relationship between career intervention and employee retention

**H<sub>02</sub>:** There is no significant relationship between career guidance & counselling and employee retention

**H<sub>03</sub>:** There is no significant relationship between career growth and employee retention

**H<sub>04</sub>:** There is no significant relationship between career mentoring and employee retention

### Literature Review and Theoretical Framework

This research's review of pertinent literature and discussion of the theoretical framework that underlies the study's topic will be the main points of this chapter. Following sub-themes will be covered in relation to it:

#### Literature Review

##### Concept of Employee Retention

Employee retention refers to an organization's ability to keep its employees over time through effective policies and practices that meet their needs and expectations (Ham, Lee, Shaw, & Hausknecht, 2022). It is vital for maintaining a stable, skilled workforce, reducing turnover costs, and ensuring long-term organizational success. High retention promotes productivity, continuity, and a strong organizational reputation, while high turnover disrupts performance and increases costs (Hausknecht, Rodda, & Howard, 2021). Key factors influencing retention include job satisfaction, organizational culture, career development, compensation, and work-life balance (Mitchell et al., 2023). Employees who feel satisfied, supported, and see opportunities for growth are more likely to remain. Competitive pay and benefits are important, but flexible work options and positive workplace culture often have greater long-term impact (Allen, Bryant, & Vardaman, 2020). Effective retention strategies focus on fostering engagement, recognition, and inclusion. Providing professional development, mentorship, and empowerment enhances loyalty (Saks, 2021). Leadership is also crucial—managers who communicate well, show empathy, and support employee growth strengthen retention (Kouzes & Posner, 2022). Finally, continuous evaluation of retention policies through feedback, exit interviews, and data-driven approaches helps organizations identify risks and refine strategies to retain valuable talent (Hausknecht & Trevor, 2021).

##### Concept of Career Progression

Career progression refers to the continuous advancement and growth of individuals in their professional journey, marked by skill acquisition,

increased responsibility, and movement to higher or more diverse roles (Greenhaus, Callanan, & Godshalk, 2020). It includes both vertical promotions and lateral moves that broaden experience and versatility. For employees, career progression provides direction, motivation, and job satisfaction by recognizing achievements and offering growth opportunities (Gutteridge, Leibowitz, & Shore, 1993). For organizations, it enhances talent retention, reduces turnover, and fosters a skilled, adaptable workforce that strengthens competitiveness (Baruch, 2019). Key factors influencing career progression include personal aspirations, organizational support, and external factors such as economic and technological changes (Arthur, Hall, & Lawrence, 1989). Employees who proactively seek growth, acquire new skills, and network effectively are more likely to progress (Eby, Butts, & Lockwood, 2020). Organizations can promote career progression through structured development programs, mentorship, transparent promotion systems, and a culture of continuous learning (London & Smither, 2023; Tharenou, 2023). Clear communication of advancement criteria and equal access to opportunities also ensure inclusivity and sustained motivation across the workforce.

### **Concept of Career Intervention**

Career intervention refers to deliberate strategies and practices aimed at helping individuals make informed career decisions, overcome professional challenges, and achieve career goals. It forms a core part of career development and counseling, involving activities such as career counseling, mentoring, education, and skills training (Brown & Lent, 2022). These interventions guide individuals at different career stages—from schooling to retirement—by helping them understand their strengths, interests, and values, and by equipping them to navigate the dynamic labor market (Swanson & Fouad, 2020). Career counseling, one major form of intervention, offers personalized guidance through assessments and counseling sessions to align individuals' skills and interests with suitable career paths (Sampson et al., 2019). Educational and training programs, such as vocational courses and professional certifications, help individuals acquire relevant competencies and enhance employability (Niles & Harris-Bowlsbey, 2022). Mentoring, on the other hand, provides ongoing support from experienced professionals who offer insights, networking opportunities, and career advice (Kram, 2020). The benefits of career interventions extend beyond individuals to organizations and society. They promote job satisfaction, engagement, and retention, leading to higher productivity and reduced turnover (Hirschi, 2020). At a broader level, they foster a skilled, adaptable workforce, drive economic growth, and

enhance social equity by improving access to career development opportunities for all (Blustein, 2021).

### **Concept of Career Guidance and Counselling**

Career guidance and counseling are essential processes that assist individuals in making well-informed educational and professional decisions by aligning their interests, abilities, and values with suitable career paths. While career guidance focuses on providing general information and advice about different career options, career counseling offers more personalized and in-depth support to help individuals address specific challenges such as indecision, dissatisfaction, or career transitions (Gibson & Mitchell, 2020). These services are crucial at all stages of life—helping students choose suitable educational paths and supporting adults in career changes, skill enhancement, and lifelong learning in an ever-evolving job market (Brown & Lent, 2022).

The key elements of career guidance and counseling include assessment, which uses tools to identify personal interests, skills, and traits; career exploration, which involves researching occupations and industries; decision-making support, which helps individuals evaluate options and build confidence during transitions; and career planning, which focuses on developing structured and adaptable strategies to achieve career goals (Niles & Harris-Bowlsbey, 2022; Savickas, 2022; Amundson, Borgen, & Erlebach, 2020; Zunker, 2020). Overall, these processes empower individuals to take charge of their career development, promoting satisfaction, personal growth, and adaptability in a dynamic world of work.

### **Concept of Career Growth**

Career growth is a dynamic and ongoing process that encompasses the development and advancement of an individual's career over time. It involves acquiring new skills, gaining valuable experiences, and moving up the career ladder. This concept is essential for both personal satisfaction and professional success, as it reflects an individual's progress in their chosen field and their ability to achieve their career goals. Career growth is influenced by various factors, including individual aspirations, organizational support, and external conditions.

Career growth can be understood as the positive changes and advancements that occur in an individual's career journey. These changes may include promotions, increased responsibilities, salary increments, and the development of expertise in a particular area. Career growth is not solely about vertical advancement but also includes lateral moves that enhance an individual's skill set and broaden their experiences. This holistic view of career growth emphasizes the importance of

continuous learning and adaptability in achieving long-term career success (Hall, 2022).

Career growth plays a vital role in both individual and organizational success. For employees, it enhances job satisfaction, motivation, and engagement by providing a sense of purpose and opportunities for advancement and personal development (Greenhaus, Callanan, & Godshalk, 2020). For organizations, supporting career growth helps attract and retain talented workers, reduce turnover, and build a skilled, motivated, and high-performing workforce (Baruch, 2019).

Career growth is influenced by individual effort, organizational practices, and external conditions. Employees who actively pursue learning, seek feedback, and take on challenging roles are more likely to advance in their careers (De Vos, Dewettinck, & Buyens, 2020). Organizations also play a key role by offering training, mentorship, and fair promotion systems that encourage professional development and internal mobility (Jehanzeb & Bashir, 2022). Externally, factors such as economic trends, industry changes, and technological innovations can create new opportunities or barriers to career advancement (Fugate, Kinicki, & Ashforth, 2019).

Effective career growth strategies combine personal initiative with organizational support. Individuals should set clear goals, pursue skill development, and build professional networks to access new opportunities (Higgins & Kram, 2023). Meanwhile, organizations should foster a culture of continuous learning, provide development resources, and implement leadership and succession programs to prepare employees for future roles (Kirkland, 2021). Overall, career growth benefits both employees and employers by driving motivation, performance, and long-term success.

### **Concept of Career Mentoring**

Career mentoring is a developmental partnership through which a more experienced or knowledgeable person (the mentor) provides guidance, support, and advice to a less experienced or knowledgeable person (the mentee). This relationship is designed to foster the mentee's personal and professional growth, enhance their career development, and assist them in achieving their career goals. The concept of career mentoring has gained significant attention in both academic literature and practical applications due to its profound impact on career advancement and organizational success.

Mentoring, as a concept, has deep historical roots, tracing back to Homer's 'The Odyssey,' where the character Mentor guides the young Telemachus. In modern contexts, career mentoring involves a more structured relationship that focuses on career development rather than the purely personal guidance seen in its historical counterpart (Kram, 2020). The

primary goal of career mentoring is to support the mentee's career progression by providing insights, feedback, and encouragement based on the mentor's own experiences and knowledge.

The importance of career mentoring is multifaceted. For the mentee, mentoring can lead to enhanced career satisfaction, increased self-confidence, and a clearer understanding of career paths and opportunities. Mentees often gain critical skills, such as decision-making, problem-solving, and strategic thinking, which are essential for career advancement. Moreover, having a mentor can significantly expand a mentee's professional network, providing access to opportunities that might otherwise be unavailable (Allen, Eby, Poteet, Lentz, & Lima, 2019).

For mentors, the relationship can also be highly rewarding. Mentors often experience a sense of personal satisfaction from contributing to the growth and development of another individual. They can also gain new perspectives and insights from their mentees, which can enhance their own professional development and effectiveness. Additionally, mentoring can strengthen leadership skills, as mentors practice coaching, communication, and interpersonal skills (Ragins & Kram, 2022).

From an organizational perspective, career mentoring is a strategic tool for talent development and retention. Organizations that implement effective mentoring programs often see higher levels of employee engagement, job satisfaction, and loyalty. Mentoring helps to transfer knowledge and skills from experienced employees to newer ones, thereby preserving organizational memory and fostering a culture of continuous learning. This can lead to improved performance, innovation, and a competitive edge in the marketplace (Chao, Walz, & Gardner, 1992).

The process of career mentoring typically involves several stages, including initiation, cultivation, separation, and redefinition. During the initiation stage, the mentor and mentee establish their relationship, set expectations, and identify initial goals. The cultivation stage is characterized by the development of a deep and trusting relationship, with frequent interactions and significant growth for the mentee. Separation occurs as the mentee gains more independence and confidence, requiring less guidance. Finally, the redefinition stage involves the evolution of the relationship into a more equal partnership or friendship (Kram, 2020).

Effective career mentoring requires certain qualities and skills from both the mentor and the mentee. Mentors should possess strong communication skills, a genuine interest in the mentee's development, and the ability to provide constructive feedback. They should also be willing to share their experiences and knowledge openly. Mentees, on the other hand, should

be proactive in seeking guidance, open to feedback, and committed to their own growth and development. The success of the mentoring relationship largely depends on mutual respect, trust, and a shared commitment to the mentee's career goals (Eby, Rhodes, & Allen, 2022).

Mentoring can take various forms, including formal and informal mentoring. Formal mentoring programs are typically organized by organizations and involve structured matching processes, training, and scheduled interactions. Informal mentoring relationships develop more naturally, often based on mutual interests and personal connections. Both forms of mentoring have their benefits, but formal programs can provide more consistent support and accountability (Ragins & Cotton, 2023).

### **Career Intervention and Employee Retention**

Career intervention and employee retention are closely linked, both playing vital roles in organizational success and employee satisfaction. Career intervention refers to organizational initiatives—such as counseling, training, mentorship, and performance appraisals—designed to guide employees in their career development and skill acquisition. These initiatives help align employees' personal goals with organizational objectives, fostering engagement and loyalty that enhance retention. Career counseling helps employees identify strengths, set achievable goals, and plan their career paths, demonstrating organizational commitment to employee growth (Gutteridge, Leibowitz, & Shore, 1993). Training and development programs build competencies, support continuous learning, and increase job satisfaction, motivating employees to remain with the organization (Noe, Clarke, & Klein, 2014). Mentorship provides guidance and connection, strengthening workplace relationships and belonging, which further boosts retention (Allen et al., 2019). Performance appraisals offer constructive feedback and recognition, reinforcing motivation and commitment (DeNisi & Murphy, 2022). Effective career interventions significantly reduce turnover by fulfilling employees' needs for growth, recognition, and advancement (Griffeth, Hom, & Gaertner, 2020). They also foster a positive organizational culture where continuous development and collaboration thrive, enhancing overall stability and morale (Jehanzeb & Bashir, 2022). Conversely, neglecting career interventions can lead to high turnover, loss of talent, and reduced productivity. Therefore, investing in structured career development initiatives is crucial for both employee satisfaction and long-term organizational sustainability (Mitchell et al., 2023).

### **Career Guidance & Counselling and Employee Retention**

Career guidance and counselling are crucial tools for enhancing both individual career development and organizational success. These programs help employees identify their skills, interests, and values, enabling them to set realistic career goals and align their aspirations with organizational opportunities. This alignment fosters job satisfaction, motivation, and a stronger sense of belonging within the workplace (Brown & Lent, 2022).

Employee retention, a major challenge for organizations, can be significantly improved through effective career guidance and counselling. High turnover rates often result in financial losses and loss of institutional knowledge (Horn et al., 2022). By addressing employees' career concerns and providing developmental support, organizations can reduce dissatisfaction and strengthen commitment. Studies show that job satisfaction is a strong predictor of retention, and career counselling helps employees see how their roles support their long-term goals (Judge & Kammeyer-Mueller, 2020).

Furthermore, career counselling provides a platform for communication, allowing employees to voice challenges and receive guidance, which reinforces their emotional commitment to the organization (Meyer & Allen, 2021). It also supports workforce adaptability by developing employees' skills to meet changing business demands, thereby boosting confidence and reducing turnover.

Overall, organizations that prioritize career guidance and counselling foster a supportive, growth-oriented culture. This not only enhances engagement and morale but also strengthens loyalty, ultimately leading to higher retention and sustained organizational performance (Saks, 2021).

### **Career Growth and Employee Retention**

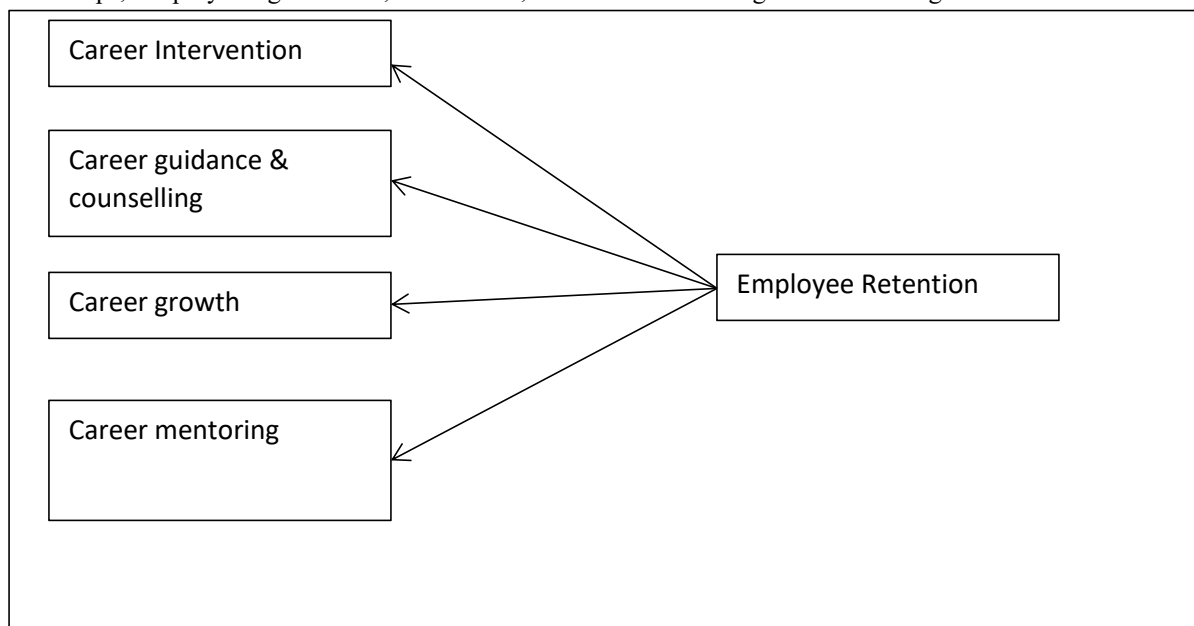
Career growth and employee retention are closely linked elements that determine organizational stability and success. Employee retention reflects an organization's ability to maintain its workforce over time, while career growth involves the professional advancement opportunities available to employees. When organizations actively support career development, employees tend to be more engaged, loyal, and productive. Opportunities for advancement, training, and mentorship greatly influence employee satisfaction and retention. Employees who see clear career pathways are more motivated and less likely to leave, as growth prospects enhance their sense of purpose and commitment (Maslach, Schaufeli, & Leiter, 2023). Investment in development programs, such as training and skill-building, not only increases employee competence and confidence but also signals that the

organization values their progress (Cappelli, 2020). Mentorship programs further strengthen retention by connecting employees with experienced guides who provide support and direction, fostering belonging and loyalty (Allen et al., 2019). Similarly, promotion opportunities encourage employees to remain committed, as fair and transparent advancement systems reinforce motivation (Trevor, Gerhart, & Boudreau, 2023). Lateral career moves and job rotation also promote retention by keeping work engaging and preventing stagnation, while broadening employees' skills and understanding of the organization (Campion, Cheraskin, & Stevens, 2019). Finally, a supportive organizational culture that prioritizes career development cultivates affective commitment—employees' emotional attachment to their workplace—which significantly reduces turnover (Meyer & Allen, 2021). In summary, fostering career growth through training, mentorship, fair promotions, and an empowering culture not only enhances employee capability and satisfaction but also ensures long-term retention and organizational success.

### Career Mentoring and Employee Retention

Career mentoring is a key strategy for enhancing employee development and improving retention within organizations. It involves pairing less experienced employees with seasoned mentors who provide guidance, support, and career advice. Through these relationships, employees gain skills, confidence, and

direction, which foster professional growth and strengthen organizational loyalty (Allen et al., 2019). Mentoring has been shown to significantly boost job satisfaction, engagement, and commitment. Mentored employees often feel more valued and supported, leading to higher retention rates (Ragins, Cotton, & Miller, 2020). The trust and connection developed through mentoring create a sense of belonging and community, which enhances workplace morale and reduces turnover intentions. Additionally, mentoring facilitates the transfer of organizational culture and knowledge. Mentors help mentees understand company values, norms, and expectations, aiding smoother integration and stronger alignment with organizational goals (Kram, 2020). This cultural socialization strengthens employees' identification with their workplace, making them more likely to remain long-term. Mentoring also plays a vital role in leadership development. By learning from experienced leaders, mentees acquire critical insights, competencies, and confidence to take on future leadership roles (Day & Allen, 2019). This investment in employee growth not only prepares organizations for succession but also signals commitment to employee advancement—further reinforcing loyalty and retention. In summary, career mentoring enhances both individual and organizational outcomes by promoting growth, engagement, and continuity. It cultivates skilled, motivated, and committed employees, thereby contributing to sustained organizational success.



### Conceptual Framework

**Fig. 1:** Conceptual framework showing the interrelationship between career progression and employee retention

### Theoretical Framework

Social Exchange Theory (SET), developed by Homans (1958) and Blau (2020), explains workplace

relationships as reciprocal exchanges where individuals seek to maximise benefits while minimising costs. In Nigerian banks, the theory is highly relevant given the sector's high employee turnover and need for sustained commitment. SET highlights **reciprocity**, where employees respond positively when organisations invest in their career development through training, mentorship, and clear advancement opportunities—leading to loyalty and reduced turnover (Okurame, 2020). It also underscores the role of perceived organisational support (POS), showing that employees are more likely to stay when they feel valued and supported through fair compensation and recognition (Eisenberger et al., 1986). Furthermore, trust and commitment form the foundation of enduring employer-employee relationships. Transparent and consistent career progression builds trust, encouraging long-term commitment (Blau, 2020; Coetzee & Stoltz, 2020). Finally, supervisory support and mentoring enhance the quality of exchange relationships, improving job satisfaction and retention (Scandura & Williams, 2019). Overall, SET provides a strong framework for understanding how mutual investment and support between Nigerian banks and their employees foster loyalty, satisfaction, and organisational stability.

### Empirical Studies

Smith and Johnson (2018) conducted a study on the impact of career intervention programs on employee retention in a major bank in the United States. They found that employees who participated in structured career development programs were 25% more likely to stay with the company for at least three years compared to those who did not participate. The study highlighted the importance of continuous career support and personalized career paths in retaining talent.

A study conducted by Thiriku and Were (2021) in Kenya's banking sector revealed that career growth positively influence employee retention. The research demonstrated that employees are more likely to remain with an organization that provides clear and attainable promotion paths. Moreover, the study suggested that transparent promotion policies and practices enhance employees' perceptions of fairness and organizational justice, which are crucial for retention.

Empirical evidence suggests that the cultivation of soft skills contributes to higher levels of employee retention in the banking industry. For instance, a study by Zhang and Zhou (2018) found that employees who possess strong interpersonal skills and emotional intelligence are more likely to build rapport with clients and colleagues, fostering a positive work environment and reducing turnover rates. This relational aspect of soft skills enhances job satisfaction and loyalty among employees, as they feel valued and supported in their roles.

A study by Izlurrell, Scholarios, and Thompson (2022) examined the importance of soft skills in the banking industry and their impact on employee retention. The research, conducted in the UK banking sector, highlighted that employees who perceived their soft skills as adequately recognized and rewarded were more likely to remain with their employers. The study used a mixed-methods approach, combining surveys and interviews, to assess the relationship between soft skills and retention. The findings indicated that soft skills development leads to higher job satisfaction and stronger organizational commitment, both of which are critical factors in reducing turnover rates.

### Methodology Research Design

The study used survey approach. A population is also known as a universe in research (Best & Khan, 2020). This study includes all bank employees in the Niger Delta. The population distribution came around 2341 across, First Bank, Guarantee Trust Bank, United Bank of Africa, Eco Bank, Zenith, Fidelity Bank. A sample size of 341 was achieved using Taro Yamani's formula. Open-ended and closed-ended questionnaires was used and distributed to the respondents along with structured interviews. The concept of validity is concerned with the extent to which your questionnaire measures what it purports to measure, and is often rephrased as "truthfulness," or "accuracy." The test-retest approach, which compares results from one time to results from another time using the same subject and research instrument, will be used to assess the reliability of the questionnaire. The dependability index of the instrument, which was calculated using Cronbach-Alpha, was 0.81.

### Case Processing Summary

|                               | Mean   | Std.<br>Deviation | N |
|-------------------------------|--------|-------------------|---|
| Career intervention           | 3.2108 | .40332            | 5 |
| Career guidance & counselling | 2.9565 | .79304            | 5 |
| Career growth                 | 2.5687 | .21876            | 5 |
| Career mentoring              | 2.6795 | .40079            | 5 |
| Employee retention            | 3.3856 |                   | 5 |

- a. Listwise deletion based on all variables in the procedure

#### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|----------------------------------------------|------------|
| .813             | .813                                         | 30         |

- a. Listwise deletion based on all variables in the procedure

#### Method of Data Analysis

Based on the established research hypotheses and study objectives, the survey data will be examined. To understand and analyze the socio-demographic data, a simple frequency distribution and percentages

statistical technique will be employed. The study's hypotheses will be tested using the statistical method known as Pearson Product Moment Correlation (PPMC).

#### Analysis of Data

##### Section A: Demographic data of respondents

**Table 4.1: Gender distribution of respondents**

| Gender       | Frequency  | Percentage (%) |
|--------------|------------|----------------|
| Male         | 212        | 64.4           |
| Female       | 117        | 35.6           |
| <b>Total</b> | <b>329</b> | <b>100</b>     |

**Source: Fieldwork, 2025**

The above table distribution shows that 212(64.4%) of the total respondents are males, while 117(35.6%) of

the respondents are females. The males dominated the females.

**Table 4.2: Age Distribution of Respondents**

| Age          | Frequency  | Percentage (%) |
|--------------|------------|----------------|
| 18-25yrs     | 81         | 24.6           |
| 26 above     | 246        | 74.8           |
| <b>Total</b> | <b>329</b> | <b>100</b>     |

**Source: Fieldwork, 2025**

The distribution above shows the age distribution of respondents. It reveals that 81(24.6%) of the total

respondents are within the age bracket of 18-25yrs, while 246(74.8%) of the respondents are within the age bracket of 26 and above.

**Table 4.3: Educational Qualification of Respondents**

| Educational Qualification | Frequency  | Percentage (%) |
|---------------------------|------------|----------------|
| B.Sc.                     | 51         | 15.5           |
| M.Sc.                     | 136        | 41.3           |
| Ph.D                      | 142        | 43.7           |
| <b>Total</b>              | <b>329</b> | <b>100</b>     |

**Source: Fieldwork, 2025**

The distribution above shows that 142(43.7%) of the total respondents have attained Ph.D which constitute the highest of the respondents while 51(15.5%) of the respondents have attained B.Sc constitute the lowest.

### Analysis of Research Questions

**Research Question 1:** To what extent does career intervention affect employee retention? Table

#### Analysis of Research Question 1

| S/N               | ITEMS                                                             | SA<br>4      | A<br>3       | SD<br>2      | D<br>1       | Total        | Mean | Decision |
|-------------------|-------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|------|----------|
| 1                 | I feel like I am a valued member of the team.                     | 109<br>(436) | 104<br>(312) | -            | 116<br>(116) | 329<br>(864) | 2.62 | Accepted |
| 2                 | I feel like my skills and knowledge are appreciated.              | 109<br>(436) | 104<br>(312) | -            | 116<br>(116) | 329<br>(864) | 2.62 | Accepted |
| 3                 | I feel like my contributions are recognized and rewarded.         | 128<br>(512) | 56<br>(168)  | 50<br>(100)  | 95<br>(95)   | 329<br>(778) | 2.66 | Accepted |
| 4                 | I feel like I have a good work-life balance.                      | 157<br>(628) | 57<br>(114)  | 115<br>(230) | -            | 329<br>(972) | 2.95 | Accepted |
| 5                 | I feel like my career goals are aligned with the company's goals. | 221<br>(884) | -            | -            | 108<br>(108) | 329<br>(992) | 3.01 | Accepted |
| Grand Mean = 2.72 |                                                                   |              |              |              |              |              |      |          |

#### Source: Field Survey Data, 2024

Table 4.4 showed that respondents accepted I feel like I am a valued member of the team with mean score of 2.62. respondents accepted I feel like my skills and knowledge are appreciated, I feel like my contributions are recognized and rewarded, I feel like I have a good work-life balance, I feel like my career goals are

aligned with the company's goals with mean scores of 2.62, 2.66, 2.95 & 3.01 respectively. Based on the grand mean of 2.72, it can be inferred therefore that career intervention affects employee retention.

**Research Questions 2:** To what extent does career guidance & counselling affect employee retention?

| S/N               | ITEMS                                                                                 | SA<br>4     | A<br>3     | SD<br>2   | D<br>1   | Total       | Mean | Decision |
|-------------------|---------------------------------------------------------------------------------------|-------------|------------|-----------|----------|-------------|------|----------|
| 1                 | The career guidance I received was tailored to my individual needs and interests      | 108<br>432  | 91<br>273  | 92<br>184 | 38<br>38 | 329<br>927  | 2.81 | Accepted |
| 2                 | The guidance counselor/ advisor provided valuable insights into various career paths  | 146<br>584  | 103<br>309 | 40<br>80  | 40<br>40 | 329<br>1013 | 3.10 | Accepted |
| 3                 | I feel more informed about the steps I need to take to achieve my career goals        | 131<br>524  | 141<br>423 | 57<br>114 | -        | 329<br>1061 | 3.22 | Accepted |
| 4                 | The career guidance session helped me identify my strengths and areas for improvement | 290<br>1160 | -          | 39<br>78  | -        | 329<br>1238 | 3.76 | Accepted |
| 5                 | I am satisfied with the level of support and guidance I received during this session  | 108<br>432  | 92<br>276  | 81<br>182 | 48<br>48 | 329<br>938  | 2.85 | Accepted |
| Grand Mean = 3.15 |                                                                                       |             |            |           |          |             |      |          |

#### Source: Field Survey Data, 2025

Table 4.5 showed that respondents accepted that The career guidance I received was tailored to my individual needs and interests with mean score of 2.81. Respondents accepted The guidance counselor/advisor provided valuable insights into various career paths with a mean score of 3.10. Respondents accepted I feel more informed about the steps I need to take to achieve

my career goals with a mean score of 122. Respondents accepted The career guidance session helped me identify my strengths and areas for improvement as well as I am satisfied with the level of support and guidance I received during this session with mean scores of 3.76 and 2.85 respectively. Based on the grand mean of 3.14, it can be inferred therefore that



career guidance & counselling affects employee retention.

**Research Questions 3:** To what extent does career growth affect employee retention? Table 4.6: Analysis of Research Question 3

| S/N               | ITEMS                                                                                                      | SA<br>4    | A<br>3     | SD<br>2    | D<br>1   | Total       | Mean | Decision |
|-------------------|------------------------------------------------------------------------------------------------------------|------------|------------|------------|----------|-------------|------|----------|
| 1                 | There was a clear progression ladder in my work                                                            | 101<br>404 | 123<br>369 | 45<br>90   | -        | 329<br>863  | 2.62 | Accepted |
| 2                 | I needed to continuously elevate my educational level to grow in my career                                 | 224<br>896 | -          | 105<br>210 | -        | 329<br>1106 | 3.40 | Accepted |
| 3                 | I stayed in my career as a banker because I had no option of other careers                                 |            |            | 329<br>658 | -        | 329<br>658  | 2    | Rejected |
| 4                 | The training and development opportunities offered by my organization have contributed to my career growth | 131<br>524 | 81<br>243  | 90<br>180  | 27<br>27 | 329<br>974  | 3.00 | Accepted |
| 5                 | I am satisfied with the advancement opportunities available to me within my current organization           | 213<br>852 | -          | 116<br>232 | -        | 329<br>1084 | 3.30 | Accepted |
| Grand Mean = 2.90 |                                                                                                            |            |            |            |          |             |      |          |

**Source: Field Survey Data, 2025**

Table 4.6 showed that respondents accepted there was a clear progression ladder in my work, I needed to continuously elevate my educational level to grow in my career with mean scores 2.62 and 3.40 respectively. Respondents rejected I stayed in my career as a banker because I had no option of other careers with mean score 2. Respondents accepted the training and development opportunities offered by my organization

have contributed to my! Career growth as well as I am satisfied with the advancement opportunities available to me within my current organization with mean scores 3.00 and 3.30 respectively. Based on the grand mean of 2.90, it can be inferred therefore that career growth affects employee retention.

**Research Questions 4:** To what extent does soft skills affect employee retention?

**Table 4.7: Analysis of Research Question 4**

| S/N               | ITEMS                                                                                          | SA<br>4     | A<br>3 | SD<br>2     | D<br>1 | Total       | Mean | Decision |
|-------------------|------------------------------------------------------------------------------------------------|-------------|--------|-------------|--------|-------------|------|----------|
| 1                 | I have improved my communication skills as a result of training or development programs        | 329<br>1316 | -      | -           | -      | 329<br>1316 | 4    | Accepted |
| 2                 | The soft skills training I received has helped me work more effectively in teams               | 329<br>1316 | -      | -           | -      | 329<br>1316 | 4    | Accepted |
| 3                 | I feel more confident my ability to adapt to new situations and challenges                     | 329<br>1316 | -      | -           | -      | 329<br>1316 | 4    | Accepted |
| 4                 | The training in interpersonal skills has enhanced my relationships with colleagues and clients | 329<br>1316 | -      | 329<br>1316 | -      | 329<br>1316 | 4    | Accepted |
| 5                 | I believe that the soft skills I have developed are valuable for my professional success       | 329<br>1316 | -      | -           | -      | 329<br>1316 | 4    | Accepted |
| Grand Mean = 4.00 |                                                                                                |             |        |             |        |             |      |          |

**Source: Field Survey Data, 2025**

Table 4.7 showed that respondents accepted I have improved my communication skills as a result of training or development programs, The soft skills training I received has helped me work more effectively in teams, I feel more confident in my ability to adapt to new situations and challenges, The training in interpersonal skills has enhanced my relationships with colleagues and clients as well as I believe that the

soft skills I have developed are valuable for my professional success all scoring 4. Based on the grand mean of 4.00, it can be inferred therefore that soft skills affect employee retention.

**Research Questions 5:** To what extent does career mentoring affect employee retention? Table

#### 4.8: Analysis of Research Question 5

| S/N               | ITEMS                                                                               | SA<br>4     | A<br>3     | SD<br>2   | D<br>1   | Total       | Mean | Decision |
|-------------------|-------------------------------------------------------------------------------------|-------------|------------|-----------|----------|-------------|------|----------|
| 1                 | My mentor was important to my professional development                              | 108<br>432  | 91<br>273  | 92<br>184 | 38<br>38 | 329<br>927  | 2.81 | Accepted |
| 2                 | My mentor kept in touch regarding my progress                                       | 146<br>584  | 103<br>309 | 40<br>80  | 40<br>40 | 329<br>1013 | 3.10 | Accepted |
| 3                 | I went through most of my career without a mentor                                   | 131<br>524  | 141<br>423 | 57<br>114 | -        | 329<br>1061 | 3.22 | Accepted |
| 4                 | I feel that my mentor genuinely cares about my professional development and success | 290<br>1160 | -          | 39<br>78  | -        | 329<br>1238 | 3.76 | Accepted |
| 5                 | I appreciate the constructive feedback and advice I receive from my mentor          | 108<br>432  | 92<br>276  | 81<br>182 | 48<br>48 | 329<br>938  | 2.85 | Accepted |
| Grand Mean = 3.15 |                                                                                     |             |            |           |          |             |      |          |

Source: Field Survey Data, 2025

Table 4.8 showed that respondents accepted that My mentor was important to my professional development with mean score of 2.81. Respondents accepted My mentor kept in touch regarding my progress a mean score of 3.10. Respondents accepted I went through most of my career without a mentor with a mean score

of 3.22. Respondents accepted I feel that my mentor genuinely cares about my professional development and success as well as I appreciate the constructive feedback and advice I receive from my mentor with mean scores of 3.76 and 2.85 respectively. Based on the grand mean of 3.14, it can be inferred therefore that career mentoring affect employee retention.

#### Testing of Hypotheses

**Hypothesis 1:** There is no significant relationship between career intervention and employee retention

**Table 4.9: Pearson (r) Analysis of career intervention and employee retention**

|                     |                     | Career intervention | Employee retention |
|---------------------|---------------------|---------------------|--------------------|
| Career intervention | Pearson Correlation | 1                   | .268*              |
|                     | Sig. (2-tailed)     |                     | .133               |
|                     | N                   | 329                 | .133               |
| Employee retention  | Pearson Correlation | .268*               | 1                  |
|                     | Sig. (2-tailed)     | .133                |                    |
|                     | N                   | 329                 | 329                |

\* Correlation is significant at the 0.05 level (2-tailed)

Table 4.9 shows a Pearson's r-value of 0.268 and a p-value of 0.133. Testing at an alpha level of 0.05, the p-value is greater than the alpha level, so, the null hypothesis which states that "There is no significant relationship between career intervention and employee

retention is rejected. Consequently, there is a significant relationship between career intervention and employee retention.

**Hypothesis 2:** There is no significant relationship between career guidance & counselling and employee retention

**Table 4.10: Pearson (r) Analysis of career guidance & counselling and employee retention**

|                               |                     | career guidance & counselling | Employee retention |
|-------------------------------|---------------------|-------------------------------|--------------------|
| Career guidance & counselling | Pearson Correlation | 1                             | .266*              |
|                               | Sig. (2-tailed)     |                               | .131               |
|                               | N                   | 329                           | 329                |
| Employee retention            | Pearson Correlation | .266*                         | 1                  |
|                               | Sig. (2-tailed)     | .131                          |                    |
|                               | N                   | 329                           | 329                |

\* Correlation is significant at the 0.05 level (2-tailed)

Table 4.10 shows a Pearson's r-value of 0.266 and a p-value of 0.131. Testing the hypothesis at an alpha level of 0.05, it is seen that the p-value is greater than the alpha level, so, the null hypothesis which states that "There is no significant relationship career guidance & counselling and employee retention" is rejected.

Consequently, there is a significant relationship between career guidance & counselling and employee retention.

**Hypothesis 3:** There is no significant relationship between career growth and employee retention

**Table 4.11: Pearson (r) Analysis of career growth and employee retention**

|                    |                     | Career growth | Employee retention |
|--------------------|---------------------|---------------|--------------------|
| Career growth      | Pearson Correlation | 1             | .316*              |
|                    | Sig. (2-tailed)     |               | .041               |
|                    | N                   | 329           | 329                |
| Employee retention | Pearson Correlation | .316*         | 1                  |
|                    | Sig. (2-tailed)     | .041          |                    |
|                    | N                   | 329           | 329                |

\* Correlation is significant at the 0.05 level (2-tailed)

Table 4.11 shows a Pearson's r-value of 0.316 and a p-value of 0.041. Testing the hypothesis at an alpha level of 0.05, the p-value, which is 0.041 is less than the alpha level, so, the null hypothesis which states "there is no significant relationship between career growth

and employee retention" is rejected. The conclusion is that "there is significant relationship between career growth and employee retention".

**Hypothesis 4:** There is no significant relationship between career mentoring and employee retention

**Table 4.13: Pearson (r) Analysis of career mentoring and employee retention**

|                    |                     | Career mentoring | Employee retention |
|--------------------|---------------------|------------------|--------------------|
| Career mentoring   | Pearson Correlation | 1                | .265*              |
|                    | Sig. (2-tailed)     |                  | .129               |
|                    | N                   | 329              | 329                |
| Employee retention | Pearson Correlation | .265*            | 1                  |
|                    | Sig. (2-tailed)     | .129             |                    |
|                    | N                   | 329              | 329                |

\* Correlation is significant at the 0.05 level (2-tailed)

Table 4.13 shows a Pearson's  $r$ -value of 0.265 and a  $p$ -value of 0.129. Testing the hypothesis at an alpha level of 0.05, it is seen that the  $p$ -value is greater than the alpha level, so, the null hypothesis which states that "There is no significant relationship between career mentoring and employee retention" is rejected. Consequently, there is a significant relationship between career mentoring and employee retention.

## Discussion of Findings

### Career intervention and employee retention

The results in Table 4.9 showed a significant relationship between career intervention and employee retention ( $r = 0.268$ ,  $p < 0.05$ ). This finding is supported by several studies across countries and contexts. Smith and Johnson (2018) found that structured career development programs in U.S. banks increased employee retention by 25%, highlighting the value of continuous career support. Similarly, Kumar and Gupta (2019) discovered that mentorship programs in Indian banks improved job satisfaction and reduced turnover by 20%, emphasizing the role of guidance and support. Wang et al. (2020) revealed that training interventions in Chinese banks enhanced employee skills and reduced attrition by 30%. In Nigeria, Adeyemi and Ogunleye (2022) found that career workshops boosted job satisfaction and organizational commitment, improving retention. Jones and Brown (2021) also noted a 15% reduction in turnover intentions among European bank employees who received career counseling. Lopez et al. (2023) confirmed that Latin American banks with robust career development programs experienced lower turnover, while Cheng and Li (2019) in Taiwan found long-term gains in loyalty and satisfaction through career coaching. Roberts and Campbell (2020) in Australia emphasized that clear career path communication increased retention by 40%, and Moyo and Mpofu (2021) in South Africa linked career interventions to a 25% turnover reduction. Finally, Kim and Park (2022) in South Korea found that integrated career programs—training, mentorship, and counseling—significantly improved employee retention by fostering engagement and organizational loyalty.

### Career Guidance & Counselling and Employee Retention

Table 4.10 shows a significant positive relationship between career guidance and counselling (CGC) and employee retention ( $r = 0.266$ ,  $p < .05$ ). Evidence from multiple studies demonstrates that CGC initiatives enhance employees' job satisfaction, engagement, and loyalty by aligning personal career goals with organizational objectives. Coetzee and Stoltz (2020) found that career guidance fosters belonging and

purpose, improving retention in South African banks. Similarly, Chen et al. (2020) revealed through a longitudinal study that employees who received counselling had higher engagement and lower turnover. Abbas et al. (2020) emphasized that CGC programs—such as personalized coaching, skills workshops, and career assessments—help employees clarify goals and enhance competencies, thereby increasing retention. Further, Ahmed et al. (2021) showed that continuous skills development through CGC promotes professional growth and reduces turnover. In Egypt, Shalaby, Tzafir, and Dolan (2021) found that counselling improves job satisfaction and commitment, while Hussain and Ahmed (2020) noted that CGC fosters supportive communication and strengthens the psychological contract between employees and management. International studies confirm similar outcomes. Smith and Lee (2019) found that regular career counselling increased U.S. bank employees' retention by 20%, and Gupta and Sharma (2020) reported an 18% reduction in turnover through career guidance in Indian banks. Jones et al. (2021) observed that personalized counselling reduced turnover by 22% in Europe, while Liu and Wang (2022) found that employees in Chinese banks who received CGC were 25% more likely to stay. Likewise, Ndlovu and Moyo (2023) concluded that counselling in South African banks improved job satisfaction and commitment, lowering turnover by 20%. Overall, the studies demonstrate that effective career guidance and counselling enhance retention by improving career clarity, fostering engagement, supporting skill development, and strengthening employees' emotional and professional connection to their organizations.

### Career Growth and Employee Retention

Table 4.11 indicates a positive and significant relationship between career growth and employee retention ( $r = 0.316$ ,  $p < .05$ ). The evidence consistently shows that employees are more likely to stay with organizations that provide clear, transparent, and attainable career advancement opportunities. Thiriku and Were (2021) found that transparent promotion paths in Kenya's banking sector enhance perceptions of fairness and organizational justice, fostering retention. Similarly, Malik and Khalid (2021) revealed that career growth and skill development initiatives in Pakistan's banks improve both performance and loyalty. Juhdi et al. (2022) emphasized the role of managerial support in helping employees realize their career aspirations, which strengthens organizational commitment. Research across various regions reinforces these findings. Kumar and Gupta (2019) and Wang et al. (2020) showed that structured career development programs and defined progression pathways increase retention by 25–28%. Smith and Johnson (2018) found

that clear advancement prospects make employees 30% more likely to stay, while Jones and Brown (2021) noted that promotions and lateral career moves reduce turnover intentions by 20%. In Nigeria, Adeyemi and Ogunleye (2022) confirmed that visible career growth opportunities boost job satisfaction and commitment, while Lopez et al. (2023) found that Latin American banks with strong career programs—such as mentorship and professional development—record significantly lower turnover rates. Cheng and Li (2019) further observed that employees with access to career growth opportunities were 35% more likely to remain loyal to their organizations. **Overall**, the studies conclude that career growth is a critical determinant of employee retention. Transparent promotion systems, continuous learning, and strong managerial support foster fairness, motivation, and long-term loyalty among banking employees.

### Soft Skills and Employee Retention

Table 4.12 indicates a significant positive relationship between soft skills and employee retention ( $r = 0.322$ ,  $p < .05$ ). Studies consistently show that employees with strong interpersonal, communication, and emotional intelligence skills are more likely to remain loyal to their organizations. Zhang and Zhou (2018) found that soft skills foster positive relationships and reduce turnover through improved workplace rapport and satisfaction. Similarly, Deery and Jago (2020) revealed that employees with strong communication skills perform better, feel more valued, and show increased loyalty, while Kundu and Lata (2022) noted that continuous soft skills training significantly lowers turnover rates. Research on emotional intelligence—by Goleman, Boyatzis, and McKee (2022) and Ndlovu and Moyo (2022)—shows that emotionally intelligent employees handle stress and conflict better, leading to higher job satisfaction and retention. Hurrell, Scholarios, and Thompson (2022) further observed that recognizing and rewarding soft skills boosts commitment and reduces attrition. Boyatzis (2020) and Bersin (2019) emphasize that integrating soft skills into training, recruitment, and performance systems enhances morale, teamwork, and organizational agility. Empirical evidence from Smith and Brown (2019), Gupta and Sharma (2020), and Wang et al. (2021) shows that communication, teamwork, and problem-solving skills respectively improve retention by 20–25%. Overall, the literature confirms that soft skills—especially communication, emotional intelligence, and teamwork—are critical drivers of job satisfaction, organizational commitment, and employee retention in the banking industry.

### Career Mentoring and Employee Retention

The findings from Table 4.13 show a significant positive relationship between career mentoring and employee retention ( $r = 0.265$ ,  $p < .05$ ). Research consistently indicates that mentoring enhances job satisfaction, organizational commitment, and loyalty among employees. Studies by Allen et al. (2019) and Kram (2020) emphasize that mentoring helps employees clarify career goals, gain organizational insight, and develop essential skills, thereby fostering commitment and reducing turnover. Similarly, Nguyen and Nguyen (2019) found that integrated mentoring and training initiatives significantly lower turnover rates, while Higgins and Kram (2021) highlight that supportive mentoring enhances satisfaction and retention. In the Nigerian context, Okurame (2020) revealed that mentored bank employees demonstrated greater job satisfaction and commitment than those without mentors. International studies also support this view—Smith and Johnson (2020) (U.S.), Gupta and Singh (2021) (India), and Wang and Li (2022) (China) all found that mentored employees were 25–30% more likely to remain with their employers due to improved career guidance and support. Further, Scandura and Williams (2019) and Allen, Eby, & Lentz (2021) confirmed that mentoring provides both career development and psychosocial benefits, creating a positive work environment and long-term retention. Viator (2023) concluded that comprehensive mentoring programs that blend career and emotional support are the most effective in retaining skilled employees. In essence, career mentoring strengthens employee satisfaction, fosters professional growth, and builds organizational loyalty—making it a vital strategy for talent retention in the banking sector.

### Conclusion

The study concludes that various career development initiatives significantly influence employee retention. Career interventions—programs designed to support employees' development and advancement—were found to positively affect retention by enhancing motivation and commitment. Career guidance and counseling also play a crucial role, as they help employees identify their strengths, weaknesses, and career goals, leading to greater job satisfaction and loyalty to the organization. Career growth opportunities, such as promotions, skill development, and increased responsibilities, further strengthen retention by giving employees a sense of progress and recognition. Similarly, soft skills like communication, teamwork, and problem-solving were shown to enhance collaboration and satisfaction, thereby encouraging employees to remain with the organization. Finally, career mentoring emerged as a key factor in employee retention. By connecting employees with experienced

mentors who offer guidance, support, and insight, organizations help staff develop professionally and feel more valued. Overall, the study highlights that fostering employee development through career interventions, guidance, growth opportunities, soft skills, and mentoring leads to higher satisfaction, stronger commitment, and reduced turnover.

### Recommendations

Based on the above research findings and the conclusion drawn therefore, the following recommendations were made,

- i. Banks should establish career intervention programs to identify employees' strengths, weaknesses, and career

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## Public Administration and the Political Economy of Nigeria: A Political Analysis

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### Abstract

*Public administration is not only the machinery for implementing state policies but also a reflection of the broader political economy within which it operates. Its capacity to drive socio-economic development depends largely on the quality of governance and the structural dynamics of the state. Thus, understanding the relationship between public administration and political economy is necessary to explain the successes and limitations of administrative reforms in Nigeria and beyond. This review critically examines the interplay between public administration and the political economy of Nigeria. It highlights how governance structures, political processes, and economic systems interact to shape administrative effectiveness, drawing from the contexts of developed, developing, and underdeveloped countries for comparative insights. Key issues discussed include impact of federal character and revenue allocation, federalism and intergovernmental relations, and prebendal pressures in bureaucratic practice well as the corruption, weak institutions, patronage politics, and resource mismanagement. The article also draws on historical antecedents, contemporary trends, and selected case studies in administrative reform and political economy. The analysis emphasizes that overcoming these challenges requires reforms in both administrative systems and economic policies. Strengthening governance structures and supporting public administration with sustainable economic strategies are essential to achieving long-term national development.*

**Keywords:** Public Administration, Political Economy, Governance, Nigeria, Development, History

### Introduction

Public administration is the principal mechanism through which governments translate political mandates into tangible services, regulatory frameworks, and social order. In Nigeria, the relationship between public administration and the broader political economy is complex, shaped by historical legacies, resource dependence, constitutional design, and sociopolitical dynamics. As a developing federal state with a rentier revenue structure, Nigeria's administrative systems operate in an environment where political incentives and economic realities heavily influence bureaucratic behavior (Ake, 1981; Joseph, 1987).

The purpose of this paper is to critically examine the conceptual foundations of public administration, the nature of Nigeria's political economy, and the implications of their interaction for governance outcomes. It also integrates theoretical perspectives

### Literature Review

#### Conceptual Framework

##### Public Administration

Public administration denotes both the application and the study of the principles of administration within a political setting. It involves the harnessing and utilization of human, financial, and material resources to implement government policies and programmes aimed at achieving specified objectives, such as national development (Remigius et al., 2025). Public administration takes place across a variety of institutional settings: public or private including universities, prisons, churches, the army, courts of justice, remand homes, business centres, and rehabilitation facilities. According to Ndukwe et al. (2023), the importance of public administration derives from its central concern with the well-being of the people. Consequently, different reform approaches have been initiated over time to improve the quality of public service delivery. Ighodalo (2018) further stresses that public administration is a major driver of socio-economic and political development in any

country. Indeed, nations desirous of genuine development invest enormous human and material resources in their public administration systems in order to enhance citizen welfare and well-being. From a classical perspective, Pfiffner and Presthus (1960, cited in Mohammed, 2024) define public administration as the process of “getting the work of government done by coordinating the efforts of people.” This definition underscores its dual character as both theory and practice, an amorphous but comprehensive field of inquiry aimed at promoting superior understanding of government and its relationship with society. Its main objective remains the advancement of management and policies so that government can function effectively. Building on this foundation, Denhardt and Denhardt (2015) identify three broad phases in the evolution of public administration:

1. The Classical Period, which emphasized a strict politics–administration dichotomy (Wilson, 1887).
2. The New Public Management (NPM) phase, which introduced market-based principles, efficiency metrics, and business-like practices into public service.
3. The New Public Service (NPS) model, which prioritizes democratic governance, transparency, and citizen participation.

Nigeria’s administrative practice reflects a hybrid of these models. While modern reforms are formally adopted, their full implementation is often constrained by entrenched political economy dynamics, such as patronage systems, rent-seeking, and weak institutional accountability.

### **Brief History of Public Administration in Nigeria**

From the colonial civil service to post-independence reforms, Nigeria’s public administration has originated with mixed outcomes. Initially designed as an instrument of colonial control, it later became a mechanism for state-building. Despite reforms, persistent issues such as over-centralization, lack of accountability, corruption, and ethnic politics continue to undermine administrative efficiency (Ayoade, 1988; Gboyega, 1992).

Public administration in Nigeria can be broadly understood through three historical phases: the pre-colonial era, the colonial period, and the post-independence era. Each stage reflects a blend of indigenous traditions, British colonial legacies, and subsequent reforms shaped by political regimes (Adamolekun, 2002).

### **Pre-Colonial Era (Before 1900)**

**Indigenous Systems:** Diverse ethnic groups had sophisticated systems of administration rooted in culture and tradition.

The Hausa/Fulani in the North operated monarchical systems with centralized taxation and authority.

The Yoruba in the West blended monarchy with participatory democratic practices.

The Igbo in the East relied on decentralized governance through elder councils (Ekeh, 1975).

**Characteristics:** These systems were largely decentralized, community-based, and relied on customary rulers and councils for decision-making.

### **Colonial Period (1900–1960)**

**Indirect Rule:** The British governed through traditional rulers, reinforcing existing power structures (Crowder, 1964).

**Colonial Superstructure:** A hierarchical civil service was introduced at the central level, creating a dual system of indirect rule and bureaucratic administration.

**Nigerianization:** By the late 1940s, steps were taken to gradually transfer administrative responsibilities to Nigerians (Famoriyo, 1984).

**Local Government Reforms:** In response to nationalist criticism, reforms in the late 1940s and early 1950s aimed at modernizing local governance and reducing the excesses of indirect rule (Adebayo, 1981).

### **Post-Independence Era (1960–Present)**

**Colonial Legacy:** Nigeria inherited the British administrative framework at independence in 1960 (Adamolekun, 1985).

**Reforms and Restructuring:** Successive governments—both military and civilian—undertook reforms to modernize the civil service and restructure local government.

**Independence Era (1960–1966):** Early efforts focused on consolidating administrative institutions (Ayoade, 1988).

**Military Rule (1966–1999):** Characterized by frequent restructuring, centralization of authority, and inconsistent reform outcomes (Gboyega, 1992).

**Democratization (1999–Present):** The Fourth Republic introduced reforms under successive administrations to enhance efficiency, reduce corruption, and professionalize the civil service (Olaopa, 2014).

**Contemporary Challenges:** Despite these efforts, Nigeria’s public administration continues to grapple with inefficiency, weak institutional capacity, corruption, and the need for genuine decentralization to empower local governments (Suberu, 2001).

### **Political Economy**

Political economy refers to the interrelationship between political processes and economic systems, particularly how political institutions influence

economic outcomes and vice versa (North, 1990). For Nigeria, two frameworks are especially relevant:

**Rentier State Theory:** As Ake (1981) and Beblawi & Luciani (1987) explain, rentier states derive a significant share of revenues from external rents such as oil exports. This structure reduces the fiscal need to tax citizens, thereby weakening accountability mechanisms.

**Prebendalism:** Joseph (1987) describes Nigeria's political culture as prebendal, where public offices are treated as entitlements to be exploited for personal and group benefit, distributing state resources among clients, kin, and constituents.

**Rentier State Syndrome:** Nigeria's economy is overwhelmingly dependent on oil revenues, which account for over 80% of government revenue and over 90% of export earnings (CBN, 2023). This dependency has created a rentier state model where economic productivity is sidelined in favor of distributing oil rents through political channels. According to Mahdavy (1970), rentier states tend to develop weak institutions because the ruling elite rely on external rents rather than taxation, thus weakening the accountability relationship between the state and its citizens.

**Elite Dominance and Political Patronage:** Political elites in Nigeria often capture public institutions for personal or group interests. Public administration is heavily influenced by patronage networks, whereby appointments and promotions are based on loyalty rather than competence (Agbaje, 1999). This practice undermines institutional efficiency and creates an environment where corruption thrives.

**Ethno-Religious Politics:** Nigeria's political landscape is fragmented along ethnic and religious lines. This fragmentation influences public sector appointments, federal resource allocation, and policy implementation. Ethno-religious politics often leads to conflict, weakens national identity, and undermines the legitimacy of public institutions (Osaghae, 1998). Abagen and Shom (2023) stated that political economy was simply referred to as economics in the 19th century. In other words, throughout the time of the classical economists, the terms "economics" and "political economy" were interchangeable. Therefore, it implies that political economics went through a number of stages before reaching the current level of discourse.

## **The Relationship between Public Administration and Political Economy**

Public administration and political economy are deeply interconnected because administration functions within a political and economic environment shaped by power, resources, and institutions. Public administration refers to the organization, coordination, and implementation of government policies and programmes, while political economy studies how political forces and economic interests interact to shape policy outcomes and resource distribution. Political economy provides the context, and public administration provides the machinery through which governance is exercised.

The influence of political economy on public administration is clear in how political institutions and interests determine administrative design and performance. Political patronage, rent-seeking, and weak accountability systems often distort the neutrality of the civil service, reducing efficiency and effectiveness (Cooper & Reggie, 2025). For instance, in South Africa, political interference in administrative appointments has undermined service delivery, demonstrating how political economy directly constrains bureaucratic performance (Mogashoa, 2023). Conversely, the quality of administration influences political economy outcomes. Where bureaucracies are transparent, meritocratic, and efficient, they contribute to economic development, equity, and legitimacy of governance. Evidence from Vietnam demonstrates that local administrative effectiveness and transparency significantly boost economic growth, proving that administrative capacity is not only a political tool but also an economic driver (Nguyen et al., 2022).

Historically, public administration theory attempted to separate politics from administration, as seen in Wilson's (1887) politics-administration dichotomy. However, later scholarship has shown that the two are inseparable. Policy choices emerge from political economy contests, where interest groups, ideologies, and institutions compete, and administrators transform these into implementable programmes (Sha, 2022). This demonstrates that public administration is not simply technical but operates within a field of power relations. Moreover, administrative values reflect broader political economy choices. Denhardt and Denhardt (2015) argue that the New Public Service model reframes citizens as active participants rather than passive clients, emphasizing democracy, transparency, and collaboration as integral to governance. Similarly, public administration studies highlight that ethical and political values such as sustainability, fairness, and equity are central to administrative decision-making (Sager & Rosser, 2021). In Nigeria, the relationship between public administration and political economy is particularly evident. Despite adopting reforms such as SERVICOM

and anti-corruption measures, entrenched political economy structures including patronage, ethnicity, and rentier politics have limited the effectiveness of administration. While Nigeria invests enormous resources in its bureaucracy for national development (Ighodalo, 2018), reform outcomes remain modest because they do not adequately address the underlying political economy incentives that sustain inefficiency and corruption.

On the other hand, political economy provides an important context for understanding these administrative challenges. Abagen and Shom (2023) note that in the 19th century, “political economy” was simply referred to as “economics.” During the era of the classical economists, the terms were used interchangeably, reflecting the inseparable connection between politics and economics. Over time, however, political economy evolved through various stages, developing into a distinct discourse concerned with how political forces shape economic outcomes, and vice versa.

### **Interrelationships between Political Processes and Economic Systems**

The interrelationship between politics and economics is best understood as reciprocal: political processes determine the rules of the economic game, while economic outcomes reshape the legitimacy, stability, and evolution of political institutions. The balance differs across contexts — stable and inclusive in developed states, vulnerable but reform-oriented in developing ones, and fragile in under-developed states. Political processes and economic systems are deeply interconnected and mutually reinforcing. Political institutions, policy choices, and stability directly shape economic structures, while economic distribution, sectoral composition, and performance influence political behaviour, legitimacy, and institutional development.

However, Political Processes Shaping Economic Systems as follow:

First, institutions and policy credibility strongly affect economic performance. Strong legal frameworks, rule of law, and independent regulatory agencies lower transaction costs and create incentives for long-term investment (World Bank, 2024). Conversely, weak or unpredictable institutions increase uncertainty and discourage capital inflows.

Second, state capacity and public finance determine the extent to which governments can mobilize resources for development. Effective tax systems and efficient expenditure allow states to build infrastructure, expand education and health services, and promote industrialization. Countries with weak fiscal capacity often fall into cycles of low investment and poor human development (OECD, 2024).

Third, political stability influences growth. Empirical evidence shows that political instability, such as frequent government turnover or contested elections, reduces investment and slows GDP growth in both developed and developing economies (Dirks, 2024). Stable political environments support policy continuity, which is essential for sustained growth.

On the other hand, economic structures also influence political dynamics. Distributional outcomes of economic growth shape electoral behavior and coalition formation. Rising inequality is linked to declining trust in democratic institutions and the rise of populist movements in advanced economies (OECD, 2024).

The sectoral composition of an economy also matters. Resource-dependent economies often encourage rent-seeking and clientelism, while diversified industrial economies foster broader coalitions that sustain stable, rules-based governance (Hall & Soskice, 2001).

Moreover, external economic shocks such as commodity price fluctuations or global financial crises frequently reconfigure domestic politics. For example, trade shocks in developing countries often provoke protectionist or populist responses that reshape policy priorities (World Bank, 2024).

### **The Contexts of Developed, Developing, and underdeveloped countries**

In developed countries, political processes typically focus on redistribution, social welfare, and technological regulation within the framework of robust institutions. Economic systems, in turn, provide the fiscal base and legitimacy to sustain democratic contestation (OECD, 2024).

In developing countries, weaker institutions and limited fiscal capacity often constrain policy effectiveness. Political incentives may favor short-term clientelist spending rather than long-term investment, making these economies highly vulnerable to global shocks (World Bank, 2024).

In under-developed countries, the relationship becomes a vicious cycle: weak political authority undermines economic performance, while poor economic outcomes further erode legitimacy. UNDP (2023) emphasizes that breaking this cycle requires simultaneous state-building and economic development, prioritizing legitimacy and service delivery before rapid liberalization.

### **Federal Character and Revenue Allocation**

The 1999 Constitution institutionalizes the federal character principle (s.14 [3]) to ensure representation of Nigeria’s diverse ethnic and regional groups in public appointments. It also establishes the Federation Account (s.162), which centralizes revenue collection and redistribution to federal, state, and local

governments. While designed for inclusivity and unity, these mechanisms influence recruitment, promotion, and spending priorities in ways that sometimes conflict with merit-based and efficiency-driven administrative models.

## **Nigeria's Political Economy and Public Administration**

### **i. Resource Dependence and Fiscal Politics**

Nigeria's fiscal structure is dominated by oil, which contributes over 50% of government revenues and more than 80% of export earnings (Nigerian Extractive Industries Transparency Initiative [NEITI], 2023). This dependence encourages distributive politics—allocating oil rents via the Federation Account—rather than cultivating a robust domestic tax base (Ake, 1981). Administrative agencies therefore focus on disbursement rather than revenue generation, leading to cyclical budget instability during oil price shocks. Fiscal policy is essentially concerned with manipulating the financial operations of the government to achieve certain economic policy objectives. In other words, it involves government decisions to vary key fiscal aggregates such as total government spending and tax revenues, as opposed to other aspects of public finance that focus mainly on the effects of specific government expenditures and taxes (Stein, 1968, in Babalola, 2015). According to Oye and Alege (2022), citing the World Bank (2014), fiscal and monetary policies are the two most significant tools available to policymakers in guiding an economy towards attaining desired macroeconomic objectives. Both are essential for maintaining macroeconomic stability and ensuring medium- to long-term economic growth and welfare.

In Nigeria, the interaction between fiscal and monetary policies is particularly important due to the need for alignment between the Central Bank of Nigeria (CBN) and the Federal Ministry of Finance (FMF). The CBN and the FMF are independent institutions responsible for monetary and fiscal policies respectively. However, under the CBN Act of 2007, the Bank is granted operational independence to direct monetary policy using its instruments. Despite these frameworks, the management of the Nigerian state in recent times has failed in its constitutional obligation to secure lives, protect property, and ensure an enabling environment for economic activities (Ogundiya & Titus, 2024). Insecurity has deeply affected the country, disrupting social relations, politics, and the economy. Similarly, Ozoh and Dinwobi (2018) emphasize that this unpalatable situation has posed serious challenges to Nigeria's socio-economic development.

### **ii. Prebendal Pressures in Bureaucratic Practice**

Joseph's (1987) analysis remains relevant in explaining Nigeria's administrative patterns:

Political appointments are often influenced by ethnic and regional balancing.

Civil service postings and promotions may be driven by patronage networks.

Budget allocations are sometimes distributed thinly across constituencies to satisfy multiple stakeholders, reducing economies of scale in public investment.

### **iii. Federalism and Intergovernmental Relations**

The Federation Account's design means that states and local governments rely heavily on federal transfers. This limits the incentive for subnational tax reform and encourages political bargaining over revenue sharing formulas. Federal ministries must often rely on conditional grants and negotiated compacts to influence subnational service delivery in sectors like health and education (Constitution of the Federal Republic of Nigeria, 1999).

### **8. Case Studies in Administrative Reform and Political Economy**

#### **1. The Petroleum Industry Act (PIA) 2021 and NNPC Limited**

The PIA (NUPRC, 2021) marked a watershed in Nigeria's oil governance, converting the Nigerian National Petroleum Corporation into NNPC Limited—a commercially oriented entity under the Companies and Allied Matters Act. The Act introduced clearer fiscal rules, corporate governance structures, and revenue-sharing arrangements. For public administration, the reform sought to:

- Separate policy-making from commercial operations.
- I. Enhance transparency through audited financial reporting.
- II. Reduce political interference in operational decisions.

#### **Host Communities Development Trusts (HCDDTs)**

The PIA also mandated the creation of HCDDTs funded by 3% of oil companies' operational expenditure. This mechanism institutionalizes corporate–community relations into a rule-bound administrative framework with boards, management committees, and audit requirements (NUPRC, 2022). Properly implemented, it can reduce community unrest and oil infrastructure sabotage, enhancing both administrative stability and economic performance.

#### **Social Protection amid Inflationary Pressures**

The removal of fuel subsidies in 2023, alongside global commodity price spikes, sharply increased living costs (Stutern, 2023). This has pressured public administration to expand social safety nets like the National Social Investment Programme.

Implementation challenges—such as targeting accuracy, digital payment infrastructure, and monitoring—highlight the capacity constraints of Nigeria’s bureaucratic apparatus in times of economic crisis.

### **Challenges of Public Administration in Nigeria**

**Politicization of the Civil Service:** The Nigerian civil service is often undermined by political interference. Political leaders interfere with recruitment, promotions, and policy decisions, making it difficult for civil servants to operate with professionalism and neutrality. This politicization erodes public trust and reduces administrative efficiency.

**Corruption and Lack of Accountability:** Corruption remains pervasive across all levels of public administration. Embezzlement of funds, contract inflation, bribery, and nepotism are rampant. Despite the establishment of anti-corruption agencies such as the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC), enforcement is often selective and politically motivated (Transparency International, 2023).

**Poor Budgetary Implementation:** Nigeria’s annual budgets are often unrealistic and poorly implemented. Over 70% of the national budget is allocated to recurrent expenditure, leaving little room for capital projects. Budget delays, inflated contracts, and lack of performance monitoring further hinder the effectiveness of public spending (BudgIT, 2023).

**Weak Institutions and Regulatory Frameworks:** Most public institutions lack autonomy, capacity, and the necessary tools for effective service delivery. Regulatory agencies are often underfunded and compromised by political interference. This institutional weakness results in poor policy implementation and limited oversight (World Bank, 2022).

**Insecurity and Governance Deficits:** Rising insecurity—including terrorism, kidnapping, and banditry has disrupted public administration in many regions of the country. Government presence is minimal in conflict zones, and public servants often fear working in volatile areas. This insecurity undermines national development and service delivery.

### **Recommendations for Administrative Efficiency**

The Nigerian case illustrates that administrative efficiency cannot be divorced from political economy realities. Key recommendations include:

**Revenue accountability link:** Expanding domestic taxation could strengthen citizen oversight and improve performance incentives for public agencies (Ake, 1981). Balancing inclusion and merit: Federal character provisions must be implemented transparently to avoid undermining competency-based recruitment (Joseph, 1987).

1. Rule-bound resource allocation: Instruments like the HCDT can insulate some spending streams from political capture, improving service delivery predictability (NUPRC, 2022).
2. Strengthened intergovernmental collaboration: Given constitutional constraints, performance-based grants could be used to align state and federal priorities in service delivery.
3. Diversify the economy beyond oil.
4. Professionalize the civil service with merit-based recruitment and promotion.
5. Deepen democratic governance and citizen participation.
6. Implement sustainable public sector reforms.

### **Conclusion**

Public administration is not only the machinery for implementing state policies but also a reflection of the broader political economy within which it operates. Its capacity to drive socio-economic development depends largely on the quality of governance and the structural dynamics of the state. Thus, the understanding of both public administration and political economy is necessary to explain the successes and limitations of administrative reforms in Nigeria and beyond. Public administration in Nigeria operates within a political economy defined by oil dependence, prebendalism, constitutional federalism, and distributive politics. Reforms like the PIA and targeted social protection illustrate that structural changes are possible, but success depends on insulating administrative processes from excessive political manipulation while improving fiscal accountability. The interaction between Nigeria’s political economy and its administrative system will continue to determine the effectiveness of governance and the prospects for sustainable development.

Public administration cannot be understood in isolation from political economy. Political economy provides the incentives, power relations, and institutional constraints that shape administrative performance, while public administration influences political economy outcomes by determining whether governance delivers growth, equity, and legitimacy. Effective reform requires addressing both sides: strengthening administrative capacity while reshaping political economy dynamics to foster accountability, transparency, and sustainable development.



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## Public Policy and Rural Development in Nigeria: An Appraisal of the Federal Government Fadama Program

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### Abstract

Rural development is at the heart of sustainable national development of developing nations. It is a means of ensuring that the rural sector of the population have fair share of socioeconomic activities and gains that makes life habitable for rural populace without resulting to mass rural-urban migration in search of social amenities and quality life. As such, public policies should drive rural development as pragmatic means towards providing public facilities and economic opportunities for the relative comfort of rural dwellers. However, due to absence of well articulated programme or poor implementation or inconsistency of policy programme on rural development, there has been much variation in the administration and performance of rural development programme in Nigeria. The efforts made by successive governments have been at its worse more of propaganda as much of the rural areas are rather characterized by dearth of infrastructure, roads, health, water and poor electricity supply including the impacts of all of these on food production. Meanwhile, there has been a federal government initiative for rural development through agriculture called FADAMA. FADAMA is a World Bank assisted programme designed to promote simple and low cost improved agricultural technology and farm support for rural farmers. This paper is an appraisal of this FADAMA program especially that since 2017 that FADAMA III terminated, there has not been any public expression of interest by the federal government to proceed to phase IV of the programme. Therefore, this paper is an advocacy for the resumption of the FADAMA IV program as a rural development policy through agricultural practice. The paper adopted the endogenous theory of rural development and utilized historical and descriptive approaches in analysing data and information sourced mainly from secondary domains. The paper found that FADAMA in its first three phases have contributed meaningfully to the transformation of rural areas in the local governments that have benefited from the program. And that whereas there were certain impediments to the full realization of its core objectives, FADAMA programs contributed to the uplifting of lives of rural farmers, their dependents and the rural populace. The impediments observed in literature include chronic political interference and serious leadership deficit at the local governments that are suppose to be the primary drivers of the programme in their areas. The paper strongly recommended the resumption of phase IV of the initiative by the Federal Government, after strengthening the legal and institutional frameworks for the design and implementation of the programme in a way that it can achieve far more results than the previous phases by transforming the lives of the rural settlers through improved agricultural interventions.

**Keywords:** Agriculture, Development, FADAMA program, Public Policy, Rural Development, Rural Populace,

## Introduction

Development is a necessary aspect of societies, indeed any society without development could be said to be static. Hence all societies are dynamic. Sustainable development for its part involves the use of natural resources as well as national infrastructures in such a way as to avoid the exhaustion of those resources. Rural socio-economic transformation is a means of ensuring that the rural sector of the population has some share in the fruits of economic activity. It is the most pragmatic means of bringing government facilities and services to the door steps of the population of rural areas. But rural areas are rather characterized by dearth of infrastructure, roads, health, water and poor electricity supply.

It is an eyesore that development efforts over the years have been in favour of urban centres, leaving the rural areas devoid of modern attractions that characterize the urban centres with huge differentials in employment, income, power, education, health and general material well-being between urban and rural areas in Nigeria. The rural economy depends much on road transportation in that it facilitates agricultural and other socio-economic activities, the provision and maintenance of the access roads is a sine qua non for the development of the rural economy, most especially the development of a small scale business which has been recommended as strategy for improving the rural economy hinges on access roads (Aliyu 2004). Due to the lack of a well articulated programme on rural development, there has been much variation in the administration and performance of rural development programme in Nigeria.

Efforts made by successive Nigerian governments have been at its worse more of propaganda. Indeed it is safe to say that Nigeria has no rural development programme until 1976 when national strategy for rural development was first initiated (Kamar et al, 2014). Before this time, governments idea of plough back some revenue to the rural sector was through; large sales plantation of cocoa, rubber, oil palm, subsidy approach which allows the public sector to provide infrastructure which include transport and

irrigation facilities and that of agrarian called reform in a package called "Integrated Rural Development" (IRD) (Agwunobi, 1993).

Since Nigeria gained her political independence in 1960, there has been a less impetus attached to the rural community development as a factor that advances the overall socio-economic development of a developing country like her. Althoguh, Alege (2005) observed that governments at different times had set up various programmes and specialized credit institutions in an attempt to transform and develop rural areas in all its ramifications and thereby moving rural dwellers from abject poverty and squalor to economic and social prosperity and while some of those programmes and credit institutions are yet on-going, some are moribund and others have gone with the regimes that initiated them. Even though successive governments have indicated desire to transform the country, be it in terms of provision of infrastructure, human capacity development and even in the realm of social cum political development particularly in the rural areas. In this wise, Nigeria has experimented with several development plans from pre-independence era till date.

Ebienfa and Paki (2013) observed that policies play crucial role in rural development and underdevelopment. Whereas, there has been no lack of public policies in Nigeria since independence, the paradox of public policy implementation has continued to militate cum mar the realization of public objectives in the country. The reason being that most government policies either end prematurely only at the formulation stage; or are purposely designed not to be religiously implemented or simply ill-implemented to benefit only a section of the society.

Okhankhuele and Opafunso (2013) claimed that several methods to remove rural-urban development gap have been carried out in Nigeria with little success, therefore the rural areas still remain highly underdeveloped in comparison with the urban areas. They believed that numerous studies have been carried out on the causes and consequences of rural-urban migration and also related the consequences of rural-

urban migration on the urban centers to serious problems such as overpopulation, insufficient physical and social infrastructural amenities. Some of the past studies linked the causes of rural-urban migration to unbalanced government policies in support of urban development, response to disparities in income, employment and other socioeconomic services available within the metropolitan and country sides, with the urban areas being fortunate. Others associated it with impulsive, emotional, structural, and traditional factors (Paul et al, 2014).

Moreover, it can be deduced that the cost of depopulation of rural areas is in reduction of rural agricultural produce. Agriculture is the engine that stimulates economic processes when it comes to national development. Historical facts show that before the oil boom in the 1970s, agriculture was the mainstay of Nigeria's economy. Each region was known for a particular agricultural produce – the Northern region was known as groundnut pyramid; Western region for cocoa, one of the world best commercial viable seeds; the Eastern region was the home of palm nut and cassava, and collectively, the proceeds from these agricultural products made Nigeria the beauty of Africa.

The enormous challenges befalling the rural areas prompted the Nigerian government to inculcate many programmes and policies at the various level of government. For example, in 1993, the federal government of Nigeria in collaboration with the World Bank and State government started a new programme referred to as the National Fadama Development programme. This in an attempt to alleviate poverty among rural Nigerians and also to increase the incomes and productivity of the rural inhabitants as an approach of meeting up with the millennium development goals (MDGs) of food sufficiency, poverty eradication and development of the rural areas. The First National Fadama Development Programme (FADAMA I) is a World Bank assisted programme designed to promote simple and low cost improved irrigation technology. The widespread adoption of the technologies enabled farmers to increase production. Federal government impressed by the achievements,

approached the African Development Fund (ADF) of the African Development Bank (ADB) for support in expanding the achievement of Fadama in scope and size. This led to the formation of Fadama II programme (Agbarevo and Okwoche, 2014).

This paper thus took a look at the FADAMA III projects in Nigeria and challenges to its implementation. In other words, the paper takes a critical look at major strategies, approaches or theories taken so far by Nigerian governments with FADAMA III to change the rural landscape and what has been their practicability in terms of social change and improving the socioeconomic well-being of the rural poor.

### **Literature Review**

The paper adopted a conceptual review approach to exploration of extant literature on its subject. It reviewed the concepts of public policy and rural development. For public policy different definitions are abound, and it may simply be futile trying to discover which is correct or proper. One of the widely quoted definitions of public policy is that of Dye (1979:1), where he defines public policy as “what Government choose to do or not to do. He went further to explain that:

Government do many things, they regulate conflicts within society, they organize society to carry on conflicts within other societies, they distribute a great variety of symbolic rewards and material services to members of the society and extracts money from the society, most at times in the form of taxes. Thus policies may regulate behavior, organize bureaucracies, distribute benefits, extract taxes, or all of these things at once..(Dye 1979).

Egonwan (2004) sees Public policy is a future oriented inquiry into the optimum means of achieving a given governments programme found in a nation's laws or in public statements by a functioning of government. Other conceptualization of public policy includes; it is a government programme of action which stands for various degrees of total articulation and normative regulations of government activities, that is what government intends to do to it.

Shankansky (1970) contended that, public policy refers to important activities of government. The reality however is that public policy embraces all government activities or outputs as it affects members of the society, and cannot be limited only to important activities of government. Public policy is also defined as a purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern.

For Nnajofofor et al (2013), public policy has to do with the fact that, it is a product of government process and activities; it affects a large spectrum of issues and sectors of the society which government have something to do. This includes the economy, housing, defense, transportation, health care, education, etc. and expression of public policy embraces, laws, judicial decisions, executive orders and rules government budgets, organizational directives or any rule of conduct behind which stands the enforcing power of the principal system.

Public policies are in essence designed to resolve societal problems. Particularly those considered to require public or collective action. Again public policies can be categorized as being distributive, regulatory and constituent respectively in accordance with the purpose they are created to serve in the society. Henry (2005) offered a dimension that sees public policy as a course of action adopted and pursued by government. This view does not tell us the philosophical basis of this government course of action. It is in this light that Ikelegbe (2006) analysed public policies are made by among others; political institutions such as: parliament, political executive, political parties and the judiciary.

Akhakpe (2014) made the point that in representative democracy, the enterprise of public policy making and implementation are facilitated and made wholesome by non-governmental actors and agencies which can be referred to as interest groups. In advanced democracies, they play principal roles in ensuring that their members' interests are factored into every policy coming from government. In the United States of America, government officials desirous of the success of government policies, go out of their way

to ensure that the interests of these groups are sought and represented in major government policies. To bridge the gap in popular representation created by the movement from direct to indirect democracy, consultations with stakeholders on every policy issue are required for such policies to get the support of the targeted group and its effectiveness realized.

Honadle (1976) identifies the problems associated with policy implementation as that of social carpenters and masons who fails to build to specification and thus distort the beautiful blueprint. He was equating policy with a building plan. To this he said:

Implementation is the nemesis of designers; it conjures up images of plans gone awry and of social carpenters and masons who fails to build to specifications and thereby distort the beautiful blueprints for progress which were handed to them. It provokes memories of "good" ideas that did not work and places the blame on the second (and second-class) member of the policy an administrative images..." (Honadle 1976:21).

Nnajofofor et al (2013) argued that the above quotation shows the importance that is attached to policy implementation and those that are responsible for implementing these policies. It also shows that no matter how beautiful the blueprint of a programme is, a defective implementation of it will make nonsense of the whole programme. Unfortunately, the situation as described by Honadle (1976) is what goes on in most developing countries including Nigeria.

The concept of rural development on the other hand is often synonymous with agricultural development; others views it from a much more comprehensive stand point which includes; the creation of opportunities and incentives for savings, credits and investment at the local level for the provision of rural facilities, roads, agro-industries and agro-services centre. Rural development is therefore a concerted effort to increase production, create and spread employment as well as rooting out fundamental causes of poverty, ignorance, hunger and diseases Akpomovie (2010). It is aimed at awakening in the people the

urge to develop their own potentials for progress in order to achieve sustainable development.

In the view of Abdulrazak et al (2015), rural development is a comprehensive mode of social transformation, a socioeconomic change seeking to bring about more equitable distribution of resources within the society, and a veritable acceptance of the principle of growth from below. This emphasized on the need to ensure socioeconomic balance and equitable distribution of wealth and resources among people and among the rural populace. Failure to do so makes an economy yet underdeveloped. Nigeria for example experienced an unprecedented economic growth in recent times; but without commensurate development.

Olayide et al. (1981) see rural development as a process whereby concerted efforts are made in order to facilitate significant increase in rural resources productivity with the central objective of enhancing rural income and creating employment opportunity in rural communities for rural dwellers to remain in the area. It is also an integrated approach to food production, provision of physical, social and institutional infrastructures with an ultimate goal of bringing about good healthcare delivery system, affordable and quality education, improved and sustainable agriculture etc. According to Van der Ploeg et al. (2000), rural development is reconstructing the eroded economic base of both the rural economy and the farm enterprise... (and) represents the well understood self-interest of increasing sections of rural population.

Paul et al (2014) believed that rural development is action that helps people to recognize and develop their ability and potential and organize themselves to respond to problems and needs which they share. It supports the establishment of strong rural community development agencies that control and use assets to promote social justice and help improve the quality of community life. It also enables community and other public agencies to work together to improve the quality of government. And for Adelakun (2013), rural development is the general process of improving the quality of life

and economic well-being of people living in relatively isolated and sparsely populated areas. He stated further that rural development has traditionally centered on the exploitation of land-intensive natural resources such as agriculture and forestry. However, changes in global production networks and increased urbanization have changed the character of rural areas. Increasingly tourism, niche manufacturers, and recreation have replaced resource extraction and agriculture as dominant economic drivers.

Lastly, Abah (2000) viewed rural development to include the provision of social and physical infrastructure, the provision of financial services in non-urban areas, non-farm and small-medium enterprises activities in rural communities and market towns that are more closely linked to the rural economy than they are to the economies of the larger urban cities, as well as the development of traditional rural sectors, such as agriculture and natural resource management. It noted the key elements that will facilitate the realization of rural development to include social infrastructure, physical infrastructure and financial services.

### **Theoretical Framework**

This paper is anchored on the endogenous theory of development. The theory was developed in opposition to the 'modernist' notion of development. Endogenous theory of development stated that the socio-economic well-being of disadvantage areas such as the rural areas can best be brought about by recognizing and animating the collective resources of the territory (Ray 2000). According to Bassand et al (1986) the new meaning of development, that is, qualitative and structural indicators, and not just qualitative and monetary measure, are used a criteria but also cultural, social, political, and ecological value as well as social costs and long effects are combined for endogenous development.

According to Lowe et al (1998), the basic characteristics of the endogenous model of rural development are - Key Principle: the specific resources of an area i.e. (natural, human and cultural) hold the key to its sustainable development; Dynamic Force: local initiative and enterprise; Function of

Rural Areas: diverse service economies; Major Rural Development Problem: The limited capacity of rural areas and social groups to participate in economic and development activity; Focus of Rural Development: capacity building (skills, institutions and infrastructure) and overcoming social exclusion.

Ray (2000) stated that the main characteristics of endogenous development are threefold. First it sets development activity within a territorial rather than sectorial framework, with the scale of the territory being smaller than the nation-state. Second, economic and other development activities are reoriented to maximize the retention of benefits within the local territory by valorizing and exploiting local resources (physical and human). Third, development is contextualized by focusing on the needs, capacities and perspectives of local people, meaning that a local area should acquire the capacity to assume some responsibility for bringing about its own socio-economic development.

Keane (1990) points out two main ways in which endogenous development differs from exogenous: first, it is seen not only as an economic concept, but also as a process dealing with the total human condition; and second it accepts numerous possible conceptions of development and pitches the objectives and paths on an appropriate local level. He also stated that endogenous approach represents a significant change from investment on physical capital to investment in developing the knowledge, the skills and the entrepreneurial abilities of local population.

The theory of endogenous development emphasized the efficient use of rural resources to develop the rural areas, it opposed extraction, annexation and exploitation of local resources to the disadvantage of its own population.

### **Public Policy and Rural Development in Nigeria: an Overview of Federal Government FADAMA Programme**

The FADAMA project was introduced as a strategy to tackle rural development problems “Fadama” is a Hausa word which translates to Irrigable land in English Language and it means “akuro” in Yoruba

language. Fadama can be described as a local word for low lying flood plain usually with easily accessible shallow groundwater (Balogun and Yusuf, 2011). It is especially suitable for crop irrigation and fishing which traditionally provides food and water for livelihood. Fadama also refers to a seasonally flooded area used for farming during the dry season. It is defined as alluvial, lowland formed by erosion and depositional actions of the rivers and streams. They encompass land and water resources that could easily be developed for irrigation agriculture.

Fadama are typically waterlogged during the rainy season but retain moisture during the dry season. The areas are considered to have high potential for economic development through appropriate investments in infrastructure, household assets and technical assistance. When Fadama spread out over a large area, they are often called ‘Wetlands’ (Nkonya et al 2008). The first National Fadama Development Project (NFDP-1) was established in the 1990s to promote simple low cost improved irrigation technology under the World Bank financing (Agunloye et al, 2017). The main objective of NFDP-1 was to sustainably increase the incomes of the Fadama users through expansion of farm and non- farm activities with high value-added output. The programme covered twelve’s states of Adamawa, Bauchi, Gombe, Imo, Kaduna, Kebbi, Lagos, Niger, Ogun, Oyo, Taraba including the Federal Capital Territory (FCT). NFDP adopted community driven development (CDD) approach with extensive participation of stakeholders at the early stage of the project.

The relative success recorded in FADAMA I led to the establishment of FADAMA II. The strategy for Fadama II was aimed at contributing to food security and increased access to rural infrastructure facilities. Consequently, Fadama II programme was assisted by World Bank and co -financed with loan from African Development Fund (ADF) (Agunloye et al, 2017). Fadama II was more of agricultural diversification programmes providing financing for the diverse livelihood activities which the beneficiaries themselves identify and design, with appropriate facilitation support. Fadama II was implemented in 12



States including the Federal Capital territory, Abuja. The 12 Fadama II states were carried out in three major agro-ecological Zones, the humid forest (Lagos, Ogun and Imo), moist savannah (Adamawa, FCT, Oyo and Taraba) and dry savannah (Bauchi, Gombe, Kaduna, Kebbi and Niger).

FADAMA III was introduced and implemented nation-wide from March, 2009 to December, 2013. An integral part of the Fadama III project was the provision of support to up- stream and down- stream activities aimed at streamlining input and output marketing, including ensuring efficient transportation of inputs and outputs, processing, storage (conservation/or preservation), thereby ensuring that beneficiaries' efforts translate to sustained and increased income (NFD,2003).

FADAMA III, like Fadama II, adopted a community-driven development (CDD) approach. Under this approach, various Fadama resource users, including crop farmers, pastoralists, fishermen and women, and on –and off-farm entrepreneurs, operating through their respective Fadama user groups (FRUGs) and their apex bodies and Fadama community Associations (FCAs) would reach consensus on how to use the common resources for their mutual advantage (NFD,2003). It also assert that through this process, communities would decide on which advisory services and infrastructures they need to enable them attain development goals they set for themselves based on their own efforts. The consensus so reached would be articulated in the local development plans (LDPs) drawn on the level of Fadama community associations.

The FADAMA III operation will support the financing and implementation of five main components designed to transfer financial and technical resources to the beneficiary groups in: (i) institutional and social development; (ii) physical infrastructure for productive use; (iii) transfer and adoption of technology to expand productivity, improve value-added, and conserve land quality; (iv) support extension and applied research; and (v) provide matching grants to access assets for income-generation and livelihood

improvements. The main objective of the Fadama III Project was to increase the income of users of rural land and water resources on a sustainable basis. By increasing their incomes, the project helped reduce rural poverty, increase food security, and contribute to the achievement of the Millennium Development Goal (MDG). The specific objectives were to:

1. Sustainably increase the incomes of Fadama beneficiaries by directly delivering resources to them (i.e. the beneficiary rural communities), efficiently and effectively;
2. Empower beneficiaries to collectively decide on how resources are allocated and managed for their livelihood activities and to participate in the design and execution of their sub-projects.

Whereas, the key indicators and targets for tracking progress toward the project development objective of Fadama III are:

1. Income of participating households: 75 percent of Fadama user households, who benefit directly from project-supported activities, would have increased their average real incomes by at least 80 percent by 2017.
2. Yields of primary agricultural products of participating households: 20 percent increase in yield of primary agricultural products of participating households.
3. Savings of participating groups: 10 percent of the replacement value of the common asset used for income-generating activities of the FUGs is saved annually (with effect from year 2).
4. Physical verification of operations, maintenance and utilization of assets at midterm and at project closing by surveys of random selected sites (NFD, 2018)

The Project initial implementation is for period of five years, from July 2008 to June 2013 but was extended to 2017. Community organizations decide on how the resources are been allocated among the priorities that they themselves identify and they manage the funds. Extensive facilitation, training, and technical assistance were provided through the Project to ensure that poor rural communities, including women and vulnerable groups, especially the physically challenged, participate in the

collective decision-making process. The Project helps by giving voice to the communities as well as promotes the principles of transparency and accountability in planning and management of public investments within the LGAs (Bature et al 2013).

The strategic choices of FADAMA III include:

- (i) To address constraints to productive infrastructure: Inadequacies in rural infrastructure and essential support services, road access and dry season irrigation, and availability of relevant agricultural and land management technologies constrain growth and adoption of more sustainable approaches to land management. The core activities funded by this Project address this constraint.
- (ii) To improve livelihood opportunities: The Project supports productive activities, technical assistance and investment in assets and land quality and services identified by communities as relevant to generation of higher incomes and better livelihoods.
- (iii) To empower the rural poor: The poor lack power and voice to access basic services, identify opportunities, and exercise legal rights. Information is scarce. Household, village, and local government decision-making processes are often opaque and exclusionary. Mechanisms to ensure accountability in delivery of state and local government services are weak. The Project's facilitators working with the Fadama groups will help them overcome barriers deriving from lack of knowledge or insufficient cooperation among groups.
- (iv) To promote socially-inclusive and community-based approaches: Integration of social inclusion and community-driven principles has proven to be cost-effective, responsive to local priorities and effective in reducing conflicts over use of natural resources. This proven approach has demonstrated that the key is to promote investments that bring both private profitability and public benefits.
- (v) To accord adequate attention to technical quality assurance: Limited

capacity in supervising the technical aspects of community subprojects contributed to delay in implementing local development plans and subprojects funded under the Fadama II Project. The Fadama development facilitators and service providers will receive adequate training before they are deployed in the communities. The Facilitators' training program will be designed to increase their sector-specific technical skills and provide them with the skills to perform feasibility work and technical supervision with the participation of the farmer groups. The Agricultural Development Program (ADP) offices will train the service providers (NFDP, 2018).

The FADAMA III Project coverage was national. It included the 19 states that did not benefit from the ongoing IDA Fadama II Project and the Fadama II states that meet the eligibility criteria for continued participation that include: (i) satisfactory disbursement performance as indicated by at least 75 percent of the IDA credit disbursed by appraisal of the proposed Fadama III Project; (ii) demonstrated pro-poor impact from the resources disbursed directly through community subprojects (as indicated by impact evaluation and beneficiary assessment studies, including the mid-term review (MTR) of Fadama II Project); (iii) establishment and funding of the operations of the core teams of the State Fadama Coordination Offices (SFCOs) and (iii) commitment to the Project as demonstrated by payment of counterpart contributions towards the costs of the project preparation work and implementation (Bature et al 2013).

The Project covers up to 20 Local Government Authorities (LGAs) for the 19 states that did not benefit from the Fadama II operation. In the Fadama II states, up to four LGAs were added to the ten LGAs that have already benefited. The GEF support focussed especially but not exclusively on the states of Borno, CrossRiver, and Osun, selected by the Government's newly founded National SLM Committee for their ecological and geographic diversity. The beneficiaries were assisted to organize themselves in economic interest groups, named Fadama

User Groups (FUGs), each having on average around 20 members (plus these individuals' households). The FUGs establish Fadama Community Associations (FCAs), which are apex organizations of 15 FUGs on average at the community level (Bature et al 2013).

### **Impediments to the Effectiveness of Public Policies Towards Rural Development in Nigeria**

The common setbacks or bottlenecks limiting the effectiveness of rural and agricultural development policies in Nigeria include:

#### **1. Ineffective Implementation of Rural Development Policies, Project and Programming.**

As stated earlier in this paper, Nigeria has over the years nonetheless developed some policies to enhance rural substantially; reaching the development objectives of those policies and programs is bordered around the pattern and nature of their implementation which has been characterized by ineffectiveness and inefficiency.

Ikelegbe (2006) argued that ineffective policy implementation is usually very difficult to realize particularly in developing nations like Nigeria. The inability of the relevant rural development agencies to effectively implement rural development policies could be as a result of inadequate resources, which quite often is a real threat to successful implementation of rural development policies. It could as well be as result of the pervasive corruption in the Nigeria public service bureaucracy. Such corrupt tendencies most often, significantly increases the possibility that allocated fund for rural development projects and programs may be misappropriated or embezzled and thus hampering effective implementation and the consequent realization of policy development and objectives.

For example, the Agricultural Development Fund (ADF) that was intended to raise agricultural products and improve conditions of the rural population, the Directs rate of food, Roads and Rural Infrastructure intended to transform the rural infrastructure were unable to meet their development objectives due largely

to poor implementation (Ajadi, 2010). Indeed, the rural development strategies do not work in a vacuum. Their effective implementation requires functional and capable institutions with appropriate institutional arrangement for their effective implementation.

Another major explanation for the ineffective implementation of rural development policies in Nigeria is the high level of policy instability characterized by frequent reversal of policy associated with governance result in serious distortion in full implementation and actualization of policy goals and objectives (Inedu 2016). Most often, rural development policies or programs are discontinued whenever there is a change in government leadership. Usually, new government abandons the projects and programs of its predecessor even when such policy is appropriate. Thus, Ajadi (2010) notes that there is usually the absence of sustained cohesive and conclusive implementation of rural development policies. It is this propensity that led to the abandonment of better life for rural women of General Ibrahim Bagangida to the introduction of the family support programme by the succeeding regime of General Sani Abacha. In the context of this most rural development policies are not implemented to their logical conclusion (Chukwuemeka et al 2013).

For Malon (1992), there is a gross rural neglect in Nigeria's development policies which has resulted to rural underdevelopment as reflected in the lack of rural industrialization and poor physical, social and institutional infrastructures. This prevalent orientation is closely connected with the colonial economy which is still promoted in Nigeria. Olarenwaju and Falola (1992) also noted that such development strategy of concentrating investments in urban areas has resulted to a wide imbalance or gap in rural and urban development. This factor of relative neglect for rural development was reinforced by government's over-reliance on the petroleum economy.

Obviously, the petroleum economy has become the main stay of the country's economy and for which government has, over the years, paid less attention to the

development of the major activities of the rural areas particularly agriculture. Agriculture has continued to dwindle more as it loses its economic importance following the greater emphasis on the petroleum sector. In essence, the emphasis on petroleum economy and the subsequent neglect of the agricultural sector has contributed substantially to the current poor state of the rural economy and the general rural sector underdevelopment.

## 2. Lack of Integration of The Various Rural Development Efforts

There is a lack of cooperation among rural development institutions to ensure that their respective initiatives, actions and mandates are coordinated to reinforce and support each other and that their activities are streamlined towards effective realization of government's rural development objectives. Idowu (1999:181) observes this impediment to rural development in Nigeria in his comment thus:

The activities of various bodies involved in the development efforts and activities never dovetailed as expected. This is to say that the expected co-ordination among the different departments, ministries, Federal, states and the local governments for instance, on the implementation mechanisms has been very difficult to achieve.

Rural development efforts in Nigeria have not been given the integrated and comprehensive approach it requires. This has been a challenge to rural development and rural development in order to be effective has to be comprehensive, involving all aspects of rural life and involving the complimentary efforts of the local government, state government and federal government as well as the communities and voluntary agencies. Integration is indeed, necessary as the factors involved in rural development are interrelated and mutually enhance one another in their effectiveness (Okoli and Onah, 2002).

## 3. Poor Commitment of the Political Representative, Towards Enhancing Rural Development

The political leaders in Nigeria, either at the executive or the legislature arm, have all come from given rural areas of the country. These politicians at different

points and time, have observed the development needs of these rural areas and made promises too on how to address these development concerns of the respective rural areas of origin. However, their will and interest to actually articulate those problems and the strategies or programs for addressing them have, indeed, not been noticeable.

The prevalent and common observation is that they, hardly pursue conclusively the link to the development needs of rural parts of their constituency. This lack of interest and political will to project the development needs of the rural areas at the relevant political and bureaucratic power points does not induce government's prompt attention to the development needs of the rural areas (Chukwuemeka et al 2013). This is again reinforced by the fact that most political office holders (local government councillors and Supervisors, state commission and chairman of local government areas, state legislatures and federal legislature all detest living in the rural areas and have opted to reside in the metropolitan state capital or federal capital territory, Abuja. For this, they do not feel the impact of the gross deprivation obtainable in the rural areas and for which they tend not to realize the urgent and dire need for enhancing development in the rural areas (Chukwuemeka et al 2013).

These attitudes do not reflect effective political representation particularly for the rural population. Indeed, as Baba (2011) noted, political representation in Nigeria is essentially for private benefit and not for public benefit. This reasonably explains the nonchalant attitude by political leaders and representatives towards enhancing national development generally and that of their respective rural constituencies particularly.

## 4. The Inefficiency of the Local Government Areas

The local government areas occupy a strategic position in the development process of the rural areas. Even though it cannot be reasonably assumed that other higher tiers of government (state and federal tiers) do not have a role to play in enhancing rural sector development, the task constitutionally centres, in a larger part, on the local government. The primary

purpose of local government is to provide essential local services and thus accelerate the pace of social and economic development of the rural and grassroots people.

Indeed, the reconstitution of Nigeria into 301, 589 and 774 local government areas in 1976, 1991 and 1996 respectively was meant ostensibly to bring government closer to the local people and to speed up rural development. Sad enough, this objective has not been noticeably realized (Tonye, 1995; Baba, 2011). This is even so, despite the huge monthly statutory allocations to the local government areas. The inability of the local governments to work towards enhancing the rural development could, in large parts, be attributed to poor and inept leadership and pervasive corruption in the local government administrative system (Halidu, 2012; Anikeze, 2012).

The high level of corruption, for instance, makes it difficult for them to channel adequate fund and energy to effective rural development. As Anikeze (2012) noted that the interest of local government leadership primarily revolves around trivialities or at best around those schemes for which they hope to derive immediate personal gains. The net effect of this has been general stagnation in the development process of the rural people and their environment.

### Conclusion

The rural areas of Nigeria are largely characterized by lack of basic infrastructure facilities and general underdevelopment enhancing the rural development status is a prerequisite for sustainable national development. The various policy measures are developed to enhance development in the rural areas by successive governments in Nigeria have not translated with visible and meaningful

transportation of the rural sector. One of these public policies on rural development is the Fadama III programme.

In conclusion, the Third National Fadama Development Project has progressively impacted rural development in Nigeria which needed to be consolidated in the subsequent phases ahead. The project has impacted positively on the following areas; input support, assets base of participants, impacted on participant's yield output and economic status of participants. However, the project performed minimally in terms of overall development of rural areas and this calls for tremendous need to sustain the programme so as to maximise the gains that are derivable from its lofty objectives. In the end, this paper recommended that:

- Federal Government needs to sustain the FADAMA programme in phases as it has been to support food production and sustain food security in Nigeria. And also to make rural development the top of the agenda of the national development in realization of the fact that enhanced rural development is a prerequisite for meaningful and sustainable overall national development.

- Furthermore, there is need for consistency in the execution of rural development programmes. Indeed, sustenance of appropriate rural development programs such as FADAMA should continue irrespective of changes in government.

- Since FADAMA program is a policy towards agricultural revolution and drive towards economic diversification from total dependence on oil, an overhaul of the institutional and legal framework for the design and implementation of subsequent phase of FADAMA program should be considered a utmost priority by the current administration.

- Lastly, the framework for implementation should centre on registered Farmers cooperatives.

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## Public-Private Partnerships and Sustainable Infrastructure Development in Nigeria: Evidence from Lagos State

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### Abstract

Infrastructure is vital to Nigeria's economic transformation; however, ongoing deficiencies in transport, housing, energy, water, and telecommunications hinder growth and fairness. Public-Private Partnerships (PPPs) have surfaced as a strategic solution, harnessing private funding, knowledge, and creativity to enhance constrained public resources. This research rigorously evaluates the success of PPPs in delivering national infrastructure, using Lagos State as a primary example. Utilizing documentary analysis, secondary data, and theoretical frameworks like cross-sector partnership theory, resource dependence, and principal-agent theory, the study assesses governance frameworks, risk-sharing strategies, and socio-economic impacts. Results show that although PPPs in Lagos have hastened project completion and enhanced service quality in areas like transportation and urban development, difficulties remain. Limited institutional capability, inconsistent policies, and uneven access to information hinder both accountability and efficiency. Housing projects frequently encounter challenges related to affordability, whereas energy and water initiatives experience shortcomings in sustainability and inclusivity. The study emphasizes that adaptive governance, fair risk distribution, and participatory involvement are essential for aligning private interests with public good. The research finds that PPPs have the power to transform Lagos, but they need enhanced governance structures, creative funding methods, and the incorporation of climate resilience along with social inclusivity. By placing Lagos in the context of Nigeria's overall PPP environment, the research provides localized perspectives on global discussions regarding infrastructure governance in developing countries and suggests policy recommendations for attaining more sustainable and fair results.

**Keywords:** Public-Private Partnerships (PPPs), Infrastructure Development, Inclusive Development, Sustainability, Lagos State, Nigeria

### Introduction

Infrastructure is vital for Nigeria's economic advancement and societal health, yet persistent deficits in transportation, electricity, water, and telecommunications impede progress and worsen disparities (Jibrin, Abdulkareem & Lawan, 2018). Financial limitations, weak institutions, and inadequate project management have exposed the flaws of traditional government-led methods, prompting a shift towards Public-Private Partnerships (PPPs) as alternative approaches to delivery (Obasa & Oluyomi, 2024). PPPs seek to harness private investment and expertise, sharing risks and rewards with the government to improve efficiency, cost-effectiveness, and service quality. Information from Lagos State indicates that road initiatives managed by PPP were finished more

rapidly and received higher levels of public approval compared to conventional projects (Ahmadu, 2024). Similarly, studies highlight political support, risk sharing, and economic viability as crucial factors for the successful implementation of PPP infrastructure in Nigeria (Babatunde & Perera, 2017). Despite this potential, the outcomes of PPP remain inconsistent. The Infrastructure Concession Regulatory Commission identifies common deficiencies—poor feasibility studies, inadequate legal frameworks, weak contract enforcement, and political interference (ICRC, n.d.). Empirical research likewise reveals stakeholder doubt, competing motivations, and limited governmental capacity for managing and supervising projects (Dada, Ogunlana & Anakor, 2024). Broader examinations link poor



performance to inconsistent policies, corruption, and inadequate regulatory frameworks (Jibrin et al., 2018). The limitations are evident across different industries. Partnerships for housing have encountered difficulties in delivering affordable units due to lack of adequate institutional support (Ibem, Adeboye & Alagbe, 2014). In transportation, despite some advancements, issues such as funding shortfalls, insufficient maintenance, and lack of accountability persist (Edogbanya & Adekeye, 2024). These discrepancies highlight the absence of unified frameworks to link PPP practices with developmental goals. Equally pressing is the neglect of social worth. PPPs often focus on profit rather than inclusivity, sustainability, and equitable access. Studies emphasize that accountability, transparency, and citizen-centered governance are vital for public-private partnerships to advance the Sustainable Development Goals in Nigeria (Obasa & Oluyomi, 2024).

### Objective of the Study

The core objective of this study is to critically examine the role and effectiveness of Public-Private Partnerships (PPPs) in national infrastructure development in Nigeria, with emphasis on performance outcomes, governance frameworks, and sustainability implications.

The specific objectives are to;

- i. evaluate the performance, governance structures, and risk-sharing mechanisms of PPPs in Nigeria's infrastructure sector.
- ii. To assess the socio-economic and technological impacts of PPP-driven infrastructure projects, and propose policy recommendations for enhancing their effectiveness and sustainability.

### Research Questions

The following research questions are germane to the study:

3. To what extent do PPPs enhance efficiency, governance quality, and risk allocation in Nigeria's infrastructure development?
4. What measurable socio-economic, technological, and sustainability outcomes are generated by PPP-driven infrastructure projects in Nigeria?

### Scope and Limitations

This research explores Public-Private Partnerships (PPPs) in Lagos State from 2020 onwards, focusing on transportation, energy, water, housing, and telecommunications. Lagos is chosen as it serves as Nigeria's economic center, featuring the widest variety of PPP initiatives, and is backed by a committed policy structure. The emphasis is on formal PPPs evaluated via qualitative case studies and secondary data to understand how the government utilizes private investment for infrastructure provision.

The study is limited by insufficient reliable data, intricate contracts, and a lack of transparency, all of which hinder performance evaluation. Dependence on case studies limits generalizability, and the rapid advancement of technology indicates that upcoming trends may not be completely addressed. Wider economic and political factors also influence results but are not the primary focus of the study. Nonetheless, Lagos presents a distinct perspective: its scale, assets, and innovative PPP policies position it as a strategic example for comprehending sub-national infrastructure management in developing situations

### Literature Review

#### Conceptual Foundations of PPPs in Nigeria

Public-Private Partnerships (PPPs) have developed as strategic methods for tackling Nigeria's infrastructure shortcomings by combining public and private resources. They are more frequently seen as cooperative governance frameworks that utilize private investment and knowledge to enhance restricted public finances (Akinkunle & Ajayi, 2015; Nwangwu, 2017).

#### Institutional and Regulatory Landscape

The framework for PPPs in Nigeria is based on the Infrastructure Concession Regulatory Commission (ICRC) Act of 2005, which offers legal support for concessions and project supervision. Even with these frameworks, inadequate regulatory enforcement and political meddling persist in compromising PPP results (Ogunlana, 2010; Odigbo, 2015). Enhancing institutional capacity and regulatory autonomy is key to boosting the effectiveness of PPPs.

#### Performance, Risk, and Infrastructure Delivery

PPPs have shown the ability to lower project expenses, enhance service quality, and effectively shift risks. Nonetheless, issues like inadequate project implementation and unbalanced risk distribution frequently endure (Edogbanya & Adekeye, 2024; Okoye & Chukwuemeka, 2012). Tackling these problems necessitates more explicit contractual frameworks and open procurement procedures.

#### Socio-Economic Impacts and Local Relevance

The socio-economic effects of PPP projects go further than just infrastructure provision. Research indicates that they can create jobs, promote regional integration, and alleviate poverty, yet success frequently depends on governance abilities at both state and federal levels (Akinwale, 2014; Onwuekwue, 2015). Engaging all stakeholders inclusively is crucial to guarantee fair advantages.

### **Governance, Ethics, and Public Trust**

Integrity in governance and ethical responsibility are essential for maintaining the legitimacy of PPPs in Nigeria. Studies indicate that leadership, responsibility, and ethical behavior significantly affect public sector efficiency and, consequently, the results of PPP (Mukoro & Okereka, 2023; Erude, 2024). Thus, guaranteeing transparency in procurement and oversight processes is vital for tackling public doubt and enhancing confidence in PPP agreements.

### **Technological Integration and Innovation**

Recent PPP efforts are progressively utilizing digital platforms to enhance oversight, transparency, and effectiveness. Despite inconsistent integration of ICT and data systems, digital innovations present chances to enhance accountability and operational efficiency (Ojo, 2016; Udeh, 2020). Therefore, increasing the adoption of technology is essential for updating PPP frameworks in Nigeria.

### **Overview of Public-Private Partnerships (PPPs)**

Public-Private Partnerships (PPPs) are vital for addressing Nigeria's infrastructure gap by utilizing private investment, expertise, and creative solutions (Babatunde, Opawole, & Akinsiku, 2012). Through frameworks like Build-Operate-Transfer (BOT) and concessions, these agreements are especially pertinent in managing Nigeria's evolving political and regulatory environment (Babatunde et al., 2012). Efficient PPPs can improve effectiveness, speed up project completion, and offer performance rewards—mitigating enduring inefficiencies found in the public sector (Babatunde et al., 2012). Nevertheless, difficulties emerge from misaligned motivations, governance flaws, and institutional deficiencies (Babatunde, Perera, Zhou, & Udejaja, 2015). Enhancing regulatory bodies like the Infrastructure Concession Regulatory Commission (ICRC) and maintaining transparency are crucial for the sustainability of projects (Babatunde, Ekundayo, Udejaja, & Abubakar, 2020). Erude (2024) emphasizes that Nigeria's public enterprises suffer from systemic flaws—characterized by governance issues and inefficiency—which have hindered infrastructure development, thus highlighting the need for PPPs as a different governance and funding approach.

### **Historical Context of Infrastructure Development in Nigeria**

After gaining independence, Nigeria depended significantly on government-driven infrastructure projects. Despite aspirations, public projects faced financial restrictions, bureaucratic delays, and governance challenges, resulting in ongoing underachievement (Babatunde et al., 2015). The

early 2000s brought about reforms and sector liberalizations that formalized the adoption of PPPs, including the creation of the ICRC under the National PPP Policy (ICRC, 2022). In spite of these reforms, the execution of PPP remains hindered by structural issues, particularly in risk distribution where public partners frequently carry unequal loads, and in policy inconsistency (Babatunde et al., 2015).

Successful initiatives, however, are those that align with national development goals and address local requirements (Babatunde et al., 2012; Babatunde et al., 2020). Mukoro (2024) emphasizes that without inclusive governance and awareness of Nigeria's socio-political contexts, especially in marginalized areas like the Niger Delta, infrastructure initiatives—including PPPs—are likely to lose their legitimacy and long-term viability.

### **Models and Types of PPPs**

Public-Private Partnerships (PPPs) utilize various contractual and operational frameworks that allocate risks, duties, and advantages between the government and private entities. In Nigeria, these frameworks have been utilized in transportation, energy, and social infrastructure initiatives to close financing deficiencies and enhance service provision (Akintoye & Beck, 2009; Nwangwu, 2018). Choosing a type of PPP is influenced by project size, industry requirements, governance structures, and socio-political circumstances. An examination of essential models—including service contracts and intricate concession and finance-oriented agreements—provides insights into their flexibility and obstacles in Nigeria's infrastructure development environment.

#### **Build-Operate-Transfer (BOT)**

The BOT model enables private entities to fund, build, and manage infrastructure before returning ownership to the government. In Nigeria, it has been extensively utilized in road concessions, electricity production, and port facilities (Onwuekwe, 2014; Kiri & Adebayo, 2021). BOT draws in private investment and technology, simultaneously lightening the immediate financial load on the government. Nonetheless, obstacles comprise inconsistent regulations, ineffective dispute resolution, and political meddling. Successful stakeholder involvement and defined legal structures are essential to maintain BOT results and guarantee value-for-money in Nigeria's infrastructure development.

#### **Design-Build-Finance-Operate (DBFO)**

DBFO combines design, construction, financing, and operations into a single contractual agreement, shifting considerable risks to private partners while promoting efficiency throughout the project's lifecycle. Nigerian implementations in transport

pathways and energy initiatives demonstrate its capacity for enhanced delivery and maintenance quality (Nwangwu, 2018; Osei-Kyei & Chan, 2017). The model encourages innovation and alleviates public funding strains, but encounters challenges related to institutional capacity shortfalls and lengthy contract discussions. Success relies on clear governance, robust regulatory oversight, and fostering local capabilities to reduce the risks of foreign control and guarantee equitable advantages.

### Concession Agreements

Concessions provide private companies the authority to manage and operate public properties for a set duration, recovering investments via user fees or charges. They have played a significant role in Nigeria's airports, ports, and roadways (Ikejiofor, 2016; Okoye & Chiejina, 2019). Concessions improve operational efficiency and upkeep while raising worries about the affordability of tariffs and public responsibility. Incorporating performance benchmarks and impartial oversight is crucial to reconcile profitability with public interest.

### Joint Ventures and Service Contracts

Joint ventures integrate public and private equity in co-owned organizations, distributing risks and promoting knowledge exchange, though they require robust governance to avoid conflicts (Eboh, 2013). Service contracts, conversely, are temporary arrangements where private companies provide defined services under governmental oversight—beneficial in areas such as water provision and waste disposal. Although simpler, their effect is confined to operational enhancements without long-term financing leverage. Generally, PPP models in Nigeria range from simple service agreements to capital-heavy BOT, DBFO, and concession arrangements. Their achievements are influenced not just by funding and risk-sharing methods but also by the quality of governance, involvement of stakeholders, and the capacity of institutions (Nwangwu, 2018; Onwuekwe, 2014). For Nigeria, customizing models to align with local socio-political and economic conditions is crucial for optimizing infrastructure results and long-term viability.

**Table 1**  
**Comparative Overview of PPP Models in Nigeria**

| PPP Model         | Core Features                                                                        | Nigerian Applications                              | Key Challenges                                  |
|-------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| BOT               | Private partner finances, builds, operates, then transfers asset back to government. | Lekki-Epe Expressway; Independent Power Projects.  | Regulatory uncertainty, political interference. |
| DBFO              | Single contract covering design, construction, financing, and operation.             | Road corridor projects; Independent energy plants. | Capacity gaps, dominance of foreign investors.  |
| Concessions       | Private operator manages public asset for fixed period, recoups via tariffs.         | Port reforms (Apapa & Tin Can).                    | Tariff affordability, weak accountability.      |
| Joint Ventures    | Shared ownership between public and private partners.                                | Oil & gas sector; state infrastructure.            | Governance conflicts, low transparency.         |
| Service Contracts | Short-term private provision of defined services.                                    | Water supply contracts; Waste management.          | Limited scope, no financing leverage.           |

*Note.* Table developed by the author based on literature review (see Akintoye & Beck, 2009; Nwangwu, 2018; Onwuekwe, 2014; Ikejiofor, 2016).

### Challenges and Opportunities of PPPs in Nigeria

Public–Private Partnerships (PPPs) in Nigeria are extensively advocated as a remedy for persistent infrastructure shortfalls. However, considerable governance shortcomings—like disjointed institutional frameworks, unclear regulatory processes, and fragile accountability systems—persist in eroding investor trust and the enforceability of contracts. For example, Erumebor (2017) highlights that failures in the execution of PPPs usually arise from strategic misalignment,

lack of transparency, and unclear regulatory frameworks. Additionally, systemic issues in public sector ethics and organizational conduct, highlighted in research on public service performance in Delta and Rivers States, emphasize the vital importance of institutional culture in influencing PPP outcomes (Okereka & Mukoro, 2023; Nwachuku, Okereka & Mukoro, 2023). However, PPPs offer encouraging opportunities for infrastructure advancement when governance and stakeholder involvement are enhanced. Collaboration among multiple stakeholders—uniting government bodies, private entities, and communities—can improve transparency, foster innovation, and promote shared ownership. Comparable dynamics manifest in organizational

settings: Okereka, Mukoro, and associates emphasize the impact of genuine stakeholder engagement and ethical practices in public organizations. Incorporating participatory and ethical standards into PPP frameworks can enhance project credibility and ensure infrastructure delivery aligns with wider development objectives. Achieving these benefits depends on institutional changes: strong legal systems, defined regulatory supervision, open monitoring, and ongoing dialogue among all parties involved. Using these foundations, PPPs in Nigeria have the potential to transform from challenging trials into successful, inclusive, and sustainable drivers of infrastructure-driven development.

### **Theoretical Perspectives**

The dynamics of Public-Private Partnerships (PPPs) in Nigeria can be analyzed through various theoretical perspectives. Cross-sector partnership theory emphasizes the necessity of cooperation between public and private entities to accomplish common objectives. Van Tulder et al. (2015) contend that achievement relies on the quality of governance, trust, and the management of power imbalances, while Pattberg and Widerberg (2015) emphasize the importance of accountability and inclusivity. In Nigeria, these viewpoints indicate that inadequate institutions and a lack of transparency obstruct legitimacy and alignment among stakeholders. Resource dependency and institutional theories offer structural perspectives. Resource dependency perceives partnerships as tactics to obtain limited resources like funding and knowledge (Sadovnikova & Pujari, 2017). In Nigeria, the government relies on private investment, whereas investors depend on governmental legitimacy, thus making equal risk distribution crucial. Institutional theory highlights the impact of regulations and standards in influencing results (Van Tulder et al., 2015). Ongoing policy inconsistency, corruption, and gaps in contract enforcement highlight the need for institutional reform to facilitate sustainable PPPs. Relational and typological viewpoints provide additional insight. Social capital theory highlights the importance of trust and networks in facilitating cooperation (Pattberg & Widerberg, 2015), an essential element in Nigeria, where widespread public distrust frequently hinders projects. Partnership classifications, as described by Valli et al. (2016) and Bovill and Felten (2016), indicate that participatory and co-creative frameworks are more robust than solely contractual arrangements. In Nigeria, this implies that PPPs will be most successful when institutional capacity, inclusive participation, and trust cultivation come together to provide infrastructure that aligns with development objectives.

### ***Principal-Agent Theory***

The principal-agent theory illustrates the dynamics of delegation and control in Public-Private Partnerships (PPPs), in which the government assigns private companies the tasks of designing, financing, and delivering infrastructure. In Nigeria, this connection is frequently hampered by information imbalances, inadequate regulatory supervision, and differing goals. Private partners might leverage their advanced knowledge to distort costs or benefits, whereas governmental bodies find it challenging to ensure accountability. Such discrepancies often result in budget excesses, inadequate service provision, or disregard for social priorities, rendering the synchronization of incentives and risk-sharing crucial for successful results (Kolk & Lenfant, 2015).

Addressing these challenges necessitates more than just formal agreements; it requires flexible governance and comprehensive oversight. Enhancing state capacity, promoting transparency, and involving communities in oversight can reduce opportunism and enhance accountability. Data from partnerships in other contexts indicates that when risks are equitably distributed and performance is closely tracked, both trust and efficiency enhance, leading to a stronger alignment between the motivations for private profit and the objectives of public welfare (Sewankambo et al., 2015). Hence, the principal-agent perspective highlights that sustainable PPPs in Nigeria rely on enhancing institutions and governance systems that protect public interests while utilizing private sector knowledge.

### **Research Methods**

This research utilizes a qualitative design grounded in secondary data to analyze Public-Private Partnerships (PPPs) in the development of infrastructure in Nigeria. Analyzing documents related to government policies, project reports, contracts, and regulatory frameworks offers understanding of governance frameworks, risk distribution, and institutional interactions (Lowndes & Skelcher, 1998; Grimsey & Lewis, 2002). Additional evidence is sourced from existing studies, global reports, and historical records to reflect long-term trends and contextual changes (Holloway & Parmigiani, 2014). This method enables a thorough evaluation of PPP effectiveness and sustainability without the constraints of limited field access. To improve reliability, the research employs triangulation, contrasting official documents with academic literature and independent assessments to confirm results (Fiore, 2001; Epstein, 2009). The analytical focus is on risk management, governance structures, and the socio-political aspects of PPPs, guided by recognized partnership theories (Brinkerhoff & Brinkerhoff, 2011). The design is

investigative and interpretive, intended to generate subtle insights that enhance academic discourse and guide policy regarding the efficiency, obstacles, and sustainability of PPPs in Nigeria's infrastructure domain.

## **Data Analysis**

### **Overview of PPP Projects in Lagos State**

Lagos State, Nigeria's financial hub, faces persistent infrastructure deficiencies driven by swift population increase, urban development, and budget constraints. Public-Private Partnerships (PPPs) have thus emerged as a vital approach to attract private funding for important initiatives in transportation, energy, housing, and urban development. The state is frequently referred to as Nigeria's experimental site for PPPs, featuring significant projects like the Lekki-Epe Expressway, Lekki Deep Seaport, Eko Atlantic City, the Bus Rapid Transit (BRT) system, and the Lagos Rail Mass Transit. Research indicates that PPPs in Lagos have improved service delivery and encouraged investment, although their overall impact has been diminished by governance, financing, and institutional capacity issues (Babatunde, Opawole & Akinsiku, 2012; Anigbogu et al., 2021).

### **Sectoral Experiences**

#### ***Transport Infrastructure***

The Lekki-Epe Expressway stands as Lagos's premier PPP project. The concession model drew initial investment interest but subsequently encountered challenges due to public opposition to tolls, inadequate risk-sharing agreements, and minimal government backing, which ultimately led to the state's repurchase of the project (Nwangwu, 2019; Ojo, 2014). In spite of these limitations, PPPs have enhanced traffic movement, decreased travel durations, and generated job opportunities (Ahmadu, 2024). Likewise, the Lekki-Ikoyi Link Bridge and the BRT system illustrate how PPPs can enhance urban mobility and alleviate congestion (Adeyemi, Adenusi & Osunsanmi, 2015).

#### ***Ports and Trade Logistics***

The Lekki Deep Seaport and the nearby Free Trade Zone demonstrate the strategic application of PPPs to enhance Lagos's regional trade competitiveness. Intended to alleviate congestion at Apapa Port and draw foreign investment, these initiatives have been praised for their economic potential, yet worries persist regarding their long-term environmental and social sustainability (Edogbanya & Adekeye, 2024).

#### ***Urban Development and Housing***

Notable initiatives like Eko Atlantic City highlight Lagos's goal to establish itself as a worldwide

investment hub. Nonetheless, academics warn that these initiatives frequently exacerbate social disparity by favoring upscale residences and business areas while overlooking the requirement for affordable housing. Advocacy for more inclusive PPP housing strategies has highlighted the importance of affordability, transparency, and social equity (Ibem, 2011; Sule, Esidene & Adadu, 2024).

### **Major Constraints**

Despite being a leader in PPP adoption, Lagos still faces persistent challenges:

4. Unbalanced risk allocation and weak financial structuring, particularly evident in the Lekki-Epe Expressway (Nwangwu, 2019).
5. Minimal stakeholder engagement, with citizen participation often limited or symbolic (Ashade, 2020).
6. Transparency and governance deficits, which discourage investor confidence and weaken public trust (Anigbogu et al., 2021).
7. Socio-economic exclusion, where infrastructure largely serves higher-income groups at the expense of broader societal needs (Ibem, 2011).

### **Strategic Directions**

For PPPs in Lagos to achieve transformative impact, scholars propose several measures:

- g) Strengthening community participation to improve legitimacy and ensure projects reflect local needs (Ashade, 2020).
- h) Enhancing procurement transparency and equitable risk-sharing to avoid failures experienced in past concessions (Nwangwu, 2019).
- i) Adopting innovative financing tools such as blended finance, green bonds, and impact investments to sustain long-term infrastructure delivery (Alamu et al., 2024).
- j) Mainstreaming resilience and climate adaptation metrics, given Lagos's exposure to flooding and coastal risks.
- k) Reorienting PPP housing projects toward inclusivity, with frameworks that address the needs of middle- and low-income groups (Ibem, 2011).

### **Conclusion**

The Lagos PPP experience highlights the potential and challenges of private sector partnership in infrastructure provision. Significant advancements have been achieved in transport, maritime commerce, and urban growth; however, challenges related to governance, risk distribution, and inclusivity persist in threatening long-term sustainability. A transition to more transparent, robust, and socially inclusive PPP frameworks—based on innovative funding and climate-conscious

planning—will be crucial for Lagos to completely harness the developmental advantages of PPPs.

### Recommendations

After a critical analysis we recommend that the government, private sectors and relevant stakeholders should;

15. Strengthen PPP governance with transparent, inclusive, and accountable frameworks.
16. Diversify financing through green bonds, blended finance, and climate-responsive investment tools.

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### Contribution to Knowledge

This study provides a Lagos-specific analysis of PPPs, showing how governance, financing, and inclusivity shape outcomes. It adds context-sensitive insights to the broader PPP discourse in developing economies.

Also, it will be useful for future studies on the subject matter.

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## Quantum Marketing Strategies and Marketing Performance of Real Estate Companies in Edo and Delta States, Nigeria

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### Abstract

*This study examines the effect of quantum marketing strategies and marketing performance of real estate businesses in Edo and Delta States, Nigeria. Specifically, the study sheds light on how hyper-personalization and cross-channel integration influence the level of marketing performance of the Nigerian real estate industry. A survey research design was used and a sample of three hundred and sixty-one (361) respondents who are employees of selected real estate business in Edo and Delta States were obtained. Data obtained in the survey were analyzed via descriptive (mean, standard deviation, Pearson correlation and variance inflation factor) and inferential (multiple regression models) statistical tools. Remarkably, the results revealed that these emerging strategies (hyper-personalization and cross-channel integration) have statistically significant and positive effect on marketing performance, particularly in areas of increased customer base, acquisition, retention, sales growth brand loyalty and brand visibility of real estate products/services. The implication of the finding is that while hyper-personalization enhances customers' loyalty by delivering timely property solutions, cross-channel integration ensures a dependable engagement of customers across multiple platforms, resulting to broader market reach. On the basis of the findings, the study recommends that real estate businesses should increase investments in quantum marketing (AI-driven, big-data analytics and machine-learning tools) because it has the potential of increasing marketing performance. Also, the real estate industry must strive towards harmonizing their digital and conventional marketing platforms so as to ensure a seamless customer experiences as well as strengthening brand recognition across all customers' touch-points.*

**Keywords:** Quantum marketing strategies; Cross-channel integration, Hyper-personification; Petroleum marketing; Marketing performance

**JEL Classifications:** M31; M39

### Introduction

In practice, marketing has evolved over time, adjusting to shifts in society and technologies. At first, organizations concentrated on mass production and distribution, and marketing was product-centric. Relationship-based marketing, which prioritises consumer interaction and brand loyalty, replaced it over time (Bader & Bin, 2024). However, organizations began using automation and data analytics to enhance targeting and personalisation as the digital era dawned, especially in the areas of communication, interpersonal connections, marketing, advertising among others around the world. According to Kumar, Ramachandran, and Kumar (2023), the majority of individuals are now familiar with social media and its use to manage various parts of their lives, including their organizations' marketing strategies; this is where quantum marketing strategies lies.

Quantum marketing is a framework that employs disruptive and probabilistic principles of quantum computing in transforming how marketers understand/engage with their consumers, moving beyond conventional linear models to create highly-personalized, real-time as well as effective campaigns for their products (Amol, 2022). It seeks to analyze complex consumer behaviour behaviours to offer deep, nuanced insights, leading to more accurate predictions, advanced personalization, optimized campaigns, and ultimately, a more resilient and relevant marketing function in an unpredictable world (Naeem, Rana & Nasir, 2023). Thus, quantum marketing strategies (QMS) are the approaches used by marketers in understanding and engaging a dynamic complex consumer-base via an adaptable, real-time, personalized model and use of advanced technologies such as artificial intelligence (AI), machine learning, and quantum computing.

Furthermore, in order to maximise customer interactions and corporate performance, the most recent phase, known as quantum marketing, combines AI, machine learning, and other technologies in a complete way (Chaffey & Smith, 2022). With this strategy, marketers can use real-time and predictive analytics for targeted marketing campaigns, going beyond conventional segmentation. The development of websites and online platforms was spurred by the significance of online marketing to business operations across a range of industries, particularly the real estate sector. In the real estate sector, the usage of QMS is altering how information is disseminated and commerce is carried out by marketers. Hence, a new era in information processing and forward-thinking research is being heralded by rapidly evolving field of marketing analytics and emerging field of quantum marketing (Grewal, Roggeveen, & Nordfält, 2021).

Remarkably, the advent of contemporary logical tools and growing digitisation of consumer data have dominated the field of marketing analytics. Nigerian real estate professionals have a somewhat low awareness of online marketing for real estate disposal (Li, Wang & Ma, 2021). Real estate buyers can use easily accessible digital real estate information to inform their decisions thanks to the effectiveness and ease of digital marketing. Potential real estate buyers might avoid emotional pain throughout the decision-making process by properly communicating important information to them digitally (Li & Savitch, 2021). Therefore, using the right digital channels could help sway choices made in real estate purchases. In light of this, real estate professionals need digital skills via the use of quantum marketing to satisfy the demands of their clients in digital marketing.

The ability to learn and use digital technology-related knowledge, skills, and competencies – like Search Engine Optimisation (SEO), mobile apps, data analytics, the internet of things (IoT), AI, among others, to market real estate goods/services online is referred to as digital intelligence (Dibie, Anibueze & Eboh, 2022). Therefore, it is vital to adopt integrated digital intelligence competences (safety, rights, security, literacy and emotional intelligence) in order to maintain the future of digital real estate marketing. In the past, the real estate business has been infamous for embracing new technologies more slowly and often than other industries. However, a number of factors, including changing consumer preferences and the potential for improved performance, have recently caused a noticeable shift in the real estate industry's use of digital technology.

One indication of this shift may be the growing application of technologies like blockchain, virtual reality (VR), augmented reality (AR), AI, big-data, and the IoT at different phases of real estate lifecycle. Therefore, the use of digital technology for quantifiable communication (such web analytics)

while preserving and growing a strong relationship to keep existing real estate clients might be called real estate digital marketing (Ekwueme, Ezech & Olanrewaju, 2019). Real estate goods/services are positioned well via quantum marketing/digital marketing channels to facilitate easier consumer interaction, improve marketing performance as well as decision-making.

Large data sets can now be processed without any technical limitations via information and communication technology (ICT) for organizations. Organizations have tools like marketing automation that allow them to create personalised offers but a barrier to utilising technology's full marketing potential is the willingness of customers to grant an enterprise access to their data (Ullah & Sepasgozar, 2020). Thus, the primary obstacle to using technology's potential is gaining access to data and obtaining the customer's permission to collect, store, process, and make this data available. Arising from the above, this study investigates how quantum marketing strategies (QMS) (hyper-personification and cross-channel integration) affect the level of marketing performance of real estate companies in Edo and Delta States, Nigeria.

## **Review of Related Literature**

### **Quantum Marketing Strategies (QMSs)**

In recent times, quantum marketing strategies (QMS) has gained significant attention as businesses seek more advanced approaches to engaging consumers. Rahman et al (2023) describes QMSs as the next frontier in marketing evolution, driven by emerging technologies such as AI, blockchain, and neuro-marketing. Chaffey and Smith (2022) argued that digital marketing excellence is now dependent on the integration of machine learning algorithms, which enhance personalization and predictive analytics. This perspective aligns with the work of Grewal, Roggeveen, and Nordfält (2021), who highlight the role of AI in transforming retail marketing through personalized consumer interactions.

Mero, Tarkiainen and Tobon, (2020) emphasize the need for a balance between technological advancements and human-centric marketing strategies. Their research highlights that while automation and AI-driven analytics can optimize marketing performance, businesses must also address ethical concerns and consumer trust issues. Similarly, Ledro, Nosella and Vinelli (2022) explored the effect of augmented and virtual reality in marketing, arguing that these technologies create immersive brand experiences that significantly improve customer engagement. Blockchain technology is another critical aspect of QMS (Heimbach, Kostyra & Hinz, 2019). According to Heimbach, et al (2019), blockchain enhances data security, transparency, and trust in marketing transactions.

Kumar, Ramachandran and Kumar (2023) extend this analysis by examining how QMS and AI has

revolutionized marketing analytics, marketing performance, and decision-making processes. Overall, the literature indicates that QMS represents a transformative shift in how organizations interact with their consumers. QMS relies on several technological components to enhance consumer engagement and business performance. Augmented reality (AR) and virtual reality (VR) create immersive brand experiences, making marketing more interactive and engaging (Dwivedi et al., 2021). The IoT plays a crucial role by enabling real-time data collection and analysis, allowing businesses to offer personalized recommendations based on consumer interactions (Eboh, et al, 2022). These components collectively form a foundation of QMS, transforming traditional marketing approaches into data-driven and technology-enhanced strategies. QMS significantly influences marketing performance of real estate firms by enabling hyper-personalization, predictive analytics, and immersive consumer experience. The real estate industry thrives on trust, transparency and targeted communication, which QMS facilitates through AI-driven insights and blockchain technology. Thus, by leveraging AI-powered data analytics, real estate businesses can gain a deeper understanding of consumer preferences, enabling them to create personalized-marketing campaign that enhance customer engagement and conversion rates (Sundhara, et al, 2023).

### **Dimensions of Quantum Marketing Strategies** **Hyper-Personalization**

The way businesses interact with their customers has changed dramatically as a result of QMS. Hyper-personalization, which entails evaluating enormous volumes of data to customise marketing messages to specific customers, is one of its main advantages. Personalisation powered by AI improves consumer experiences and boosts brand loyalty (Grewal et al., 2021). By foreseeing customer demands and providing relevant content instantly, predictive analytics enhances engagement even further. Notably, personalisation has developed into hyper-personalization, a cutting-edge strategy that creates highly customised experiences for clients by leveraging data analytics, artificial intelligence, and machine learning (Rahman et al., 2023). By providing content and promotions that are specific to each customer's tastes, hyper-personalization fosters deep consumer engagement. Businesses can produce communications that are relevant and targeted by analysing client data, such as past purchases and online activity. Once more, knowing the preferences of each individual consumer helps companies to tailor goods and services to suit certain requirements and create a feeling of exclusivity (Liu, Zhang & Wang, 2021). Thus, by showcasing a thorough awareness of individual preferences and anticipating demands, hyper-personalization helps organisations to establish

emotional relationships. Customers become brand champions as a result of this loyalty, which transcends transactional encounters. Businesses can find pain points and remove friction in the customer journey by implementing hyper-personalization.

According to Markovich et al. (2019), consumers engage favourably with digital clienteling, which provides them with hyper-personalized product possibilities. Because it allows businesses to use real-time and AI-driven solutions, hyper-personalization can be thought of as a more detailed approach to personalisation. Organisations are using machine learning, artificial intelligence, the Internet of Things, and machine-to-machine communication to automate their marketing and personalise content in order to meet customer expectations and boost volume of real-time transactions (Mbali, Ngui & Ndiao, 2018). Hyper-personalization improves personalisation by utilising unstructured data, in contrast to standard personalisation, which is either predicated on a set of content guidelines or on watching consumer behaviour. The essence of hyper-personalization was summed up by Lahti, Wincent, and Parida (2018), who claimed that it shifts the way that customers communicate from using basic characteristics like name, location, or even segment to making sure that every component of a communication—including images, offers, products, and even the timing and manner of delivery—is tailored to the recipient.

### **Cross-Channel Integrations**

Channel integration goes beyond conventional multichannel strategies in the context of quantum marketing by establishing a networked system in which real-time customer interactions are synchronised. Businesses may now deliver individualised and consistent messages across channels including social media, mobile apps, websites, and physical stores because to this integration (Bader & Bin, 2024). AI is essential to quantum marketing's channel integration optimisation; AI-driven analytics provide real-time synchronisation of consumer data across platforms, giving companies the ability to efficiently monitor customer interactions and preferences (Kumar et al., 2023). Businesses can create individualised marketing plans that appeal to certain customers by utilising this data.

Additionally, blockchain technology improves the transparency and security of transactions through linked channels. Blockchain technology can support safe and transparent real estate transactions in the context of real estate marketing, fostering buyer-seller confidence (Sundhara et al., 2023). By guaranteeing that all participants have access to unchangeable transaction data, this technology lowers the possibility of fraud and boosts process confidence. By gathering and evaluating data from numerous linked devices, the Internet of Things enhances channel integration even more. IoT devices

have the ability to track consumer interactions in real-world settings, including when they visit real estate showrooms, and combine this information with online activity. Marketers may provide individualised experiences that bridge the gap between online and offline channels thanks to this thorough understanding of client activity (Dwivedi et al., 2021).

Furthermore, to provide a smooth and customised consumer experience, channel integration in quantum marketing strategies makes use of cutting-edge technologies (Kumar et al., 2023). Businesses may improve customer engagement, establish trust, and cultivate enduring connections by coordinating data and interactions across several platforms. As technology advances, it is becoming more and more crucial for businesses looking to remain competitive in the digital market to incorporate AI, blockchain, and IoT into their marketing strategy.

### **Marketing Performance**

Due to its subjective nature, performance has been interpreted in a variety of ways in the present. Numerous studies in the marketing literature examine how environmental factors relate to the concept of performance. According to Ledro et al. (2022), performance is defined as accomplishing the objectives specified in the convergence of enterprise orientations. In this sense, performance is not just the discovery of an outcome but rather the result of comparing the outcome with the purpose. A notable accomplishment in a field of endeavour, the best outcome obtained by a technological system, or a result (particularly good) obtained by an individual are all examples of performance (Dibie et al., 2022). Interestingly, performance can only be associated with one particular outcome; it cannot be associated with any other outcome. Performance is future-oriented, designed to reflect the distinctive qualities of each organisation or individual, and grounded in a causal model that links parts and products, claim Li and Savitch (2021). Performance is consequently influenced by a number of variables aimed at achieving the desired outcomes and meeting the demands of the clients. A more thorough definition of performance is provided by Markovich et al. (2010), who claim that it encompasses both acts and results. Both actions and results are regarded as performance; the results of the mental and physical labour required to complete tasks are not only tools for accomplishing certain goals, but are also outcomes in and of it that may be evaluated separately from results.

Enterprise performance, not just cost reduction or value enhancement, is what leads to a better cost-value pair, according to Rahman et al. (2023). Their competitiveness and success in the fast-paced corporate world of today are greatly influenced by their marketing performance. In order to increase brand awareness, draw in new clients, and boost sales,

businesses are putting more and more emphasis on marketing tactics (Ullah & Sepasgozar, 2020). Technology development, the regulatory environment, consumer behaviour, competition, and economic trends are some of the internal and external elements that influence marketing performance (Ullah & Sepasgozar, 2020). To keep ahead of the competition, businesses are constantly modifying their marketing plans to take these elements into account.

Growing competitiveness is one of the main issues that organisations are dealing with. Traditional corporate processes are threatened by new entrants' creative marketing strategies and digital solutions. Therefore, in order to effectively compete, businesses must use data analytics, AI-powered marketing tools, and performance-boosting tactics. Furthermore, according to Naeem et al. (2023), client involvement has emerged as a crucial component of marketing performance for businesses. In today's fiercely competitive industry, establishing trusting relationships with clients, learning about their needs, and providing individualised experiences are essential components of success. In order to improve their marketing success, businesses must spend money on client loyalty programs, social media involvement, and customer relationship management (CRM).

### **Theoretical Framework**

The technological determinism (TTD) theory, which has drawn interest in the analysis of marketing research for real estate firms, served as the foundation for this investigation. According to TTD, the primary force behind societal transformation is technology. McLuhan and Postman have promoted the TTD, which holds that technological advancements have the ability to independently affect institutions, society, and human behaviour (Mero et al., 2020). TTD proponents contend that social and economic structures are changing mostly due to technology. Theorists emphasised that the characteristics of a communication medium have a fundamental influence on how information is interpreted and how society is formed by arguing that the medium is the message.

TTD offers a comprehensive perspective for examining the transformative impact of digitisation on the real estate industry. The theory provides a conceptual framework for examining the significant shifts in market dynamics, transaction procedures, and communication brought about by cutting-edge technological advancements. TTD clarifies how technology affects not just specific activities but also the broader socioeconomic structure of the real estate sector. This paradigm must be used to the quantum marketing of real estate operations in order to analyse how technology-driven changes impact various aspects of the real estate sector, including property listings, transactions, marketing, and consumer

behaviour. As a result, this paradigm observes shifts in market dynamics brought about by the direct effects of digitisation.

The deterministic nature of the theory itself has been cited as a significant critique of the TTD, which is not without its shortcomings and problems. According to Liu et al. (2021), it ignores the influence of socioeconomic and cultural factors on digital marketing, oversimplifying the intricate interaction between technology and society. Although digitalisation is a major factor in the real estate sector, it operates within a socioeconomic framework that is shaped by factors including governmental regulations, economic conditions, and cultural community preferences. Ignoring these factors could lead to an oversimplified view of the impact that technology has had on the real estate sector. TTD's relevance to QMS and marketing performance is essential because it frames the discussion of the transformative power of digital technologies and provides a framework for understanding how QTM alters the real estate industry's marketing performance.

### Methodology

In this study, the descriptive survey approach was employed because it allows for description of the effects of quantum marketing strategies (QMS) on marketing performance of real estate businesses in Nigeria. The study population was made up of employees of ten (10) promising real estate businesses in Edo and Delta States, Nigeria. In this view of this, the population encompass top, middle

and operational levels of employees from the real estate businesses. The study population therefore results to four hundred and eighty-nine (489) employees of the real estate business in Edo and Delta States. A sample of three hundred and sixty-one (361) was obtained via the Krejcie and Morgan 1970 formula for sample size determination.

Furthermore, to accomplish the goals of the study, primary data (questionnaire) as the main instrument of data collection; this was administered to employees of the selected real estate businesses in Edo and Delta States. Likert 4-point scale - Strongly Agree, Agree, Disagree, and Agree was used for the survey question type. Cronbach alpha was employed to confirm the data's internal dependability; the Cronbach alpha obtained (hyper-personalization = 0.77; cross-channel integration -0.81; and marketing performance = 0.76) were above the Cronbach coefficient needed for a reliable instrument. Descriptive and inferential statistical tools were used to analyse data collected in the field survey; the following is the regression equation for the relationship between quantum marketing strategies (hyper- personalization and cross-channel integration) and marketing performance

$$\text{Marp} = F(\text{Hyper}, \text{Chanint}) \quad \text{eq. 1}$$

$$\text{Marp}_i = a_0 + \beta_1 \text{Hyper} + \beta_2 \text{Chanint} + \mu_t \quad \text{eq. 2}$$

Where: Marp is marketing performance; Hyper is hyper- personalization; Chanint is cross channel integration; i is respondents  $\mu$  is error term.

### Results

**Table 1: Summary of Descriptive Statistics Result**

| Parameters                | Mean   | Std. Dev. |
|---------------------------|--------|-----------|
| Marketing Performance     | 3.1020 | 0.5042    |
| Hyper-Personalization     | 2.9740 | 0.4130    |
| Cross-Channel Integration | 3.0411 | 0.5010    |
| Observations              | 361    | 361       |

Source: Author's Computation (2025)

Table 1 shows the mean and standard deviation responses by the respondents on quantum marketing strategies variables (hyper-personalization and cross-channel integration) and marketing performance of the sampled real estate business in Edo and Delta States, Nigeria. The respondents' impression of quantum marketing strategies (QMS) (hyper-personalization and cross-channel integration) and marketing performance were found to be similar as

seen in the mean and standard deviation values (Table 1), with cross-channel integration having the greatest mean value (3.0411), indicating that respondents are informed, knowledgeable, and use quantum market strategies as a means of cross-channel integration of their real estate products/services.

**Table 2: Pearson Correlation Result**

| Parameters                | Marketing Performance | Hyper-Personalization | Cross-Channel Integration |
|---------------------------|-----------------------|-----------------------|---------------------------|
| Marketing Performance     | 1.0000                |                       |                           |
| Hyper-Personalization     | 0.0375                | 1.0000                |                           |
| Cross-Channel Integration | 0.2077                | 0.4210                | 1.0000                    |
| Observations              | 361                   | 361                   | 361                       |

Source: Author's Computation (2025)

Table 2 shows the Pearson correlation result of the relationship between quantum marketing strategies variables (hyper-personalization and cross-channel integration) and marketing performance of the sampled real estate business in Edo and Delta States, Nigeria. The result revealed among others that there y.

**Table 3: Variance Inflation Factor (VIF) Result**

| Parameters                | VIF  | 1/VIF  |
|---------------------------|------|--------|
| Hyper-Personalization     | 1.02 | 0.9803 |
| Cross-Channel Integration | 1.01 | 0.9900 |
| Mean VIF                  | 1.05 |        |

Source: Author's Computation (2025)

Table 3 is the multicollinearity result (VIF) for the quantum marketing strategies variables (hyper-personalization and cross-channel integration) and marketing performance of the sampled real estate business in Edo and Delta States, Nigeria. The VIF mean which is 1.05, is less than the accepted VIF mean of 10; this strongly suggests that there is

is a positive relationship between the quantum marketing strategies variables and marketing performance. More interestingly, the result revealed that there is the absence of multicollinearity between the pairs of the independent variables of the stud

absence of multicollinearity in the empirical model of the quantum marketing strategies variables(hyper-personalization and cross-channel integration) and marketing performance. Consequently, the result that was obtained from the Ordinary Least Square (OLS) can be relied upon.

**Table 4: Regression Results**

| Number of Obs. = | 361         | F (2, 360)     | =       | 59.12 |                     |
|------------------|-------------|----------------|---------|-------|---------------------|
| R-Squared =      | 0.810       | Prob. > F      | =       | 0.000 |                     |
| Adj. R-Squared = | 0.760       |                |         |       |                     |
| Marp             | Coefficient | Standard Error | t-value | P>/t/ | [95% Conf. Interval |
| Hyper            | 0.3039      | 1.2300         | 5.22    | 0.000 | 0.5211 5.2227       |
| Chanint          | 0.4001      | 2.2083         | 8.44    | 0.000 | 0.6721 8.1132       |
| Const.           | 0.4949      | 3.4858         | 12.9    | 0.000 | 0.9595 13.048       |

Source: Author's Computation (2025)

Table 4 is the regression results for the quantum marketing strategies variables (hyper- personalization and cross-channel integration) and marketing performance of the sampled real estate business in Edo and Delta States, Nigeria. The result indicates that the model fits the data well because the measures of the independent variable (quantum marketing strategies) accounted for about 76% of the systematic variance in the dependent variable (marketing performance) as indicated by the R<sup>2</sup> corrected of 0.76. Additionally, the study found that the quantum marketing strategies variables affect marketing performance, as evidenced in the F-value which is 59.12 (p-value = 0.000 < 0.05).

Furthermore, t-values for the quantum marketing strategies (Hyper = 5.22; Prob. = 0.000 < 0.05; and Chanint = 8.44; Prob. = 0.000 < 0.05) revealed that both hyper-personalization (Hyper) and cross-channel integration (Chanint) are statistically significant and positive in explaining marketing performance. Interestingly, the regression coefficient for Hyper is 0.3039 and Chanint is 0.4001; this suggests that a unit increase in hyper-personalization and cross-channel integration would lead to approximately 31% and 40% increases in marketing performance of the real estate business in Edo and Delta States, Nigeria. This is expected given the

fundamental role quantum marketing strategies play in promoting real estate marketing performance in an era of marketing digitization. Finding on hyper-personalization and marketing performance corroborates the results of Amol (2022) who found that AI-powered personalization can increase sales force and customers-base. On the other hand, the finding on cross-channel integration and marketing performance was consistent with the results of Bader and Bin (2024) who found that cross-national integration increases marketing performance at a high level of industry concentration.

## Conclusion And Recommendations

This study examines quantum marketing strategies (hyper-personalization and cross-channel integration) on marketing performance of real estate businesses in Edo and Delta States, Nigeria. The study sheds light on how the use of hyper-personalization and cross-channel integration contributes to increased marketing performance of Nigerian real estate industry. Remarkably, the results revealed that these emerging strategies have statistically significant and positive influence on marketing performance, particularly in areas of increased customer base, customer acquisition, client retention, sales growth brand loyalty and brand visibility of real estate

products/services. The implication of the result is that while hyper-personalization enhances customers' satisfaction/loyalty by delivering relevant and timely property solutions, cross-channel integration ensures a dependable engagement of customers across multiple platforms, resulting to broader market reach. Consequent upon the findings of the study, we conclude that quantum marketing strategies when effectively and efficiently used by real estate businesses can bring about increased marketing performance. On the basis of the findings, the study recommends that real estate businesses should increase their investments in quantum marketing (AI-driven, big-data analytics and machine-learning tools) because it has the potential of increasing marketing performance. In addition, real estate businesses must harmonize their digital and conventional marketing platforms in order to ensure a seamless customer experiences and strengthen brand recognition across all customers' touch-points

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## Risk Management in the Era of Digital Banking in Nigeria: A Theoretical Framework

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### Abstract

*This research constructs a theoretical model for comprehending risk management within Nigeria's digital banking industry, where swift technological integration enhances prospects yet also subjects banks and customers to intricate risks. The study explores the relationship between the progression of digital banking and risk exposure, the impact of consumer behavior on risk management frameworks, and the difficulties in implementing effective management strategies. Employing a qualitative method, the research combines scholarly and practical evidence to assess operational, cyber, regulatory, and financial risks, while incorporating global frameworks into Nigeria's distinct banking environment. Results emphasize cybersecurity as a significant weakness that threatens customer confidence and adoption, with system flaws and regulatory delays worsening vulnerability. However, robust risk strategies—like enterprise risk management (ERM), cyber risk governance, and transparent AI—can enhance resilience, profitability, and customer satisfaction. The research additionally shows that socio-economic and gender factors influence risk perceptions, especially within marginalized groups, highlighting the importance of inclusivity for sustainable digital finance. Suggestions highlight the need to strengthen technological and human resources, implement strong governance structures, enhance regulatory supervision, and foster risk communication that is focused on customer needs. By incorporating trust, behavioral dynamics, and sustainability into risk management, the research enhances academic discussion and provides actionable insights for policymakers and practitioners. Its significance is in offering a context-aware model that tackles Nigeria's digital weaknesses while promoting resilience, inclusivity, and enduring stability in the banking industry.*

**Keywords:** Digital Banking, Risk Management, Cybersecurity, Customer Trust, Enterprise Risk Management (ERM) and Nigeria

### Introduction

Digital banking has revolutionized financial services worldwide, with Nigeria distinguishing itself as a key adopter owing to greater mobile phone usage, internet availability, and financial inclusion initiatives. This change has increased accessibility, lowered expenses, and enhanced efficiency, creating fresh opportunities for people, companies, and the wider economy. Nonetheless, alongside these advantages exists a complicated and changing array of risks that jeopardizes the stability, trust, and enduring sustainability of the industry.

Cybersecurity issues continue to be the most significant, putting banks and customers at risk of fraud, data breaches, and operational interruptions. These risks are exacerbated by regulatory deficiencies, infrastructure shortcomings, and a lack of institutional capacity to ensure adherence.

Insufficient financial literacy increases user vulnerability, as numerous individuals and SMEs do not possess the knowledge to effectively safeguard themselves in digital settings. As a result, perceptions of risk regarding trust and security still obstruct the broader acceptance of digital banking services.

Innovative technologies like artificial intelligence serve as a double-edged sword: they provide prospects for enhanced services, yet they bring forth fresh worries regarding algorithmic bias, data privacy, and ethical utilization. Likewise, attempts to enhance digital financial inclusion—particularly for women and vulnerable populations—might inadvertently strengthen inequalities if safeguards are insufficient. Additionally, the environmental and sustainability aspects of adopting digital finance remain insufficiently investigated in Nigerian studies,



resulting in significant questions being left unresolved.

Currently, risk management methods in Nigeria are disjointed, frequently tackling singular problems without incorporating technology, regulations, user behavior, financial education, and socio-economic contexts. This disjointed strategy restricts the sector's adaptability and its capacity to maintain growth driven by innovation. Consequently, there is a pressing requirement for a comprehensive theoretical model that encompasses Nigeria's distinct setting and harmonizes innovation with consumer safeguarding. This research aims to address that gap by creating a comprehensive framework for handling risks within Nigeria's digital banking environment

### Objectives of the Study

The main aim of this study is to create a thorough theoretical framework for comprehending risk management in the digital banking era specific to Nigeria.

Others consist of to;

5. investigate the connection between digital banking evolution and risk exposure by utilizing empirical and theoretical perspectives from current research to frame Nigeria's distinct banking landscape.
6. examine how customer behavior and experiences influence risk management frameworks in digital banking.
7. evaluate the difficulties and optimal strategies related to establishing efficient risk management frameworks within the Nigerian digital banking industry.
8. enhance the scholarly conversation regarding digital banking risk management by providing a structure that may guide upcoming studies and practical applications

### Research Questions

1. To what extent cybersecurity and operational risks shape customer confidence and adoption of digital banking in Nigeria?
2. In what ways are risk management strategies integrated into the digital transformation processes of Nigerian banks, and which theoretical models best capture this alignment?
3. How do customers' risk perceptions influence their adoption of digital banking services, and which theoretical constructs provide the most explanatory power in the Nigerian context?
4. To what extent do socio-economic and gender-related factors affect risk management practices and the adoption of digital banking, particularly among women entrepreneurs?

### Significance of the Study

The research titled "Risk Management in the Era of Digital Banking in Nigeria: A Theoretical Framework" is important as it fills essential voids in

comprehending the risks emerging from Nigeria's swift transition to digital banking. Although digital platforms enhance financial access, they simultaneously subject banks and customers to intricate issues concerning cybersecurity, trust, inclusivity, and sustainability.

The structure highlights three main areas.

Initially, it emphasizes the influence of trust and behavioral elements—especially within Nigeria's young demographic—in forming adoption and risk perceptions (Melnyk, 2023; Julia et al., 2023).

Secondly, it addresses accessibility concerns, recognizing that underrepresented groups encounter obstacles akin to those observed in other developing economies (Kameswaran et al., 2023).

Third, it modifies institutional mechanisms like Enterprise Risk Management (ERM) to fit Nigeria's regulatory and market landscape, allowing banks to methodically tackle technological and operational risks (Saputra et al., 2023).

Incorporating behavioral biases, user variation, sustainability factors, and risks arising from crises as demonstrated during the COVID-19 pandemic (Jain et al., 2023; Gurendrawati et al., 2023; Vilhena & Navas, 2023), the framework offers a comprehensive model customized for Nigeria's digital banking environment. Its importance stems from providing theoretical insights and practical advice for enhancing resilience, inclusivity, and sustainable development in the industry.

### Scope and Limitation of the Study

This study analyzes risk management in Nigeria's digital banking industry, concentrating on the theoretical models that guide risk reduction in a swiftly changing financial environment. In Nigeria, as in various emerging markets, digital banking is influenced by technological, behavioral, and operational elements that establish unique risk dynamics. Through the amalgamation of technology adoption theories, consumer behavior models, and risk management principles, the research creates a comprehensive framework for comprehending and tackling these risks.

The focus is limited to the banking sector in Nigeria, while also gaining comparative insights from areas that have similar developmental paths, like Vietnam and Indonesia. Research in these areas shows how embracing digital technology impacts operational efficiency, fraud, and system weaknesses—findings that are still pertinent for Nigeria, even with variations in regulation, infrastructure, and digital literacy.

Demographic factors, especially Generation Z, millennials, and gender variations, are pivotal to the structure. Behavioral studies emphasize that opposition to technology, changing user expectations, and differing degrees of digital literacy affect susceptibility to risks like fraud and cyberattacks. Although these elements address essential user-

related risk aspects, the experiences of older or less technologically proficient groups are still not well examined.

Operational risks, such as cybersecurity threats, fraud, and system outages, are similarly tackled. Nonetheless, their evolving characteristics within Nigeria's comparatively new regulatory landscape necessitate constant reevaluation. The research also recognizes the lack of quantitative risk assessments because of restricted access to bank-specific information, limiting the evaluation to theoretical and qualitative perspectives.

In conclusion, this research provides a theoretical framework for comprehending Nigeria's digital banking risk landscape, enhanced by international comparisons yet constrained by contextual differences, demographic emphasis, and data restrictions. It is suggested that future studies utilize longitudinal data and case studies specific to institutions to confirm and enhance the suggested framework

## **Literature Review**

### **Introduction**

Digital banking has quickly revolutionized financial services globally, with Nigeria becoming a significant adopter. Although it improves accessibility and efficiency, it also presents considerable risks to users and institutions, thereby making effective risk management crucial. Research in various contexts offers essential insights into Nigeria's digital banking environment.

Theories of adoption highlight vulnerabilities associated with users. Alnemer (2022) utilizes the Technology Acceptance Model to pinpoint perceived ease of use and usefulness as essential factors, whereas Musyaffi et al. (2022) combine Technology Readiness and Technology Acceptance models to emphasize the significance of technological readiness. These viewpoints highlight risks associated with digital literacy gaps, reluctance to embrace innovation, and security issues—all very pertinent in Nigeria.

Customer interaction introduces an additional level of risk. Levy (2022) illustrates that the type of platform influences loyalty via psychological involvement, whereas Alabi et al. (2023) indicate that customer views directly impact service adoption. In Nigeria, where trust is tenuous due to cyber fraud, risk strategies focused on customers are essential.

Institutional and socio-economic elements add complexity to the adoption process. Kaur et al. (2021) demonstrate that combining physical and digital channels reduces adoption risks, a strategy appropriate for Nigeria's infrastructural limitations. Alabi et al. (2023) present digital banking as a facilitator of financial inclusion while also highlighting increased cyber, privacy, and operational risks, emphasizing the importance of regulatory protections.

Contexts specific to sectors also require focus. Sutikno, Nursaman, and Mulyat (2022) emphasize that Sharia banks need to integrate digital advancements with adherence to religious principles, a crucial factor for Nigeria's Islamic banking industry

## **Concept of Risk Management**

### **Technical Models**

Risk management in financial organizations entails recognizing, evaluating, and minimizing risks to stability. Historically centered on credit, market, and liquidity risks, digital banking has expanded its focus to include cybercrime, technological weaknesses, operational issues, and compliance hurdles. In Nigeria, as adoption increases despite infrastructural and socio-economic challenges, quantitative methods like Extreme Value-at-Risk (EVaR) help banks gauge possible losses and implement precautionary strategies (Saputra et al., 2022).

### **Behavioral Models**

In addition to technical protections, customer views affect adoption and exposure to risk. The Technology Acceptance Model (TAM) illustrates how views on reliability, usefulness, and security influence consumer trust and readiness to adopt digital platforms (Ghani et al., 2022; Nguyen, 2020). This highlights that risk management should focus on both technological robustness and user trust.

### **Institutional and Regulatory Factors**

External factors greatly influence results. The quality of governance, stability of regulations, and levels of corruption influence exposure, suggesting that technical measures are inadequate without robust institutional frameworks (Syed et al., 2022). Innovative technologies like artificial intelligence, machine learning, and blockchain offer predictive oversight and automated reactions, yet they also create new vulnerabilities that necessitate flexible frameworks (Indriasari et al., 2022). Efficient risk management frameworks in financial organizations necessitate robust administrative and institutional capability; as shown by Omoyemi and Okereka (2025) in their research on disaster management agencies in the Niger Delta, inadequate administrative structures can impair the capacity to recognize, reduce, and address risks.

### **Customers Trust**

Customer trust serves as a key factor in digital risk. Research indicates that favorable views on service quality, responsiveness, and security lower the occurrence of fraud, disputes, and service abandonment, thus decreasing reputational risks (Harb, Thoumy, & Yazbeck, 2022).

In general, managing risks in digital banking must be adaptive, incorporating technological advancements, regulatory supervision, and behavioral understanding

into holistic structures for tackling existing and upcoming challenges (Indriasari et al., 2022)

### **Digital Banking in Nigeria (Concise Journal-Style Summary)**

Digital banking in Nigeria is transforming financial services via internet and mobile platforms, driven by increased connectivity, smartphone adoption, and financial inclusion strategies (Wewege, Lee, & Thomsett, 2020; Galal, Rady, & Aref, 2022). A young, technologically proficient population and the COVID-19 outbreak have hastened the adoption process (Egala, Boateng, & Mensah, 2021; Prokopenko et al., 2022).

Nevertheless, expansion brings risks—cybersecurity threats, fraud, data privacy concerns, and lax regulations erode trust (Kaur et al., 2021; Kornelis, 2022). Blockchain has the potential to improve security, transparency, and efficiency; however, user acceptance depends on perceived trust and user-friendliness (Kumari & Devi, 2022). Digital disruptions present operational hazards such as system breakdowns and reliance on external vendors, necessitating robust IT infrastructure and proactive risk management (Wewege et al., 2020).

Customer satisfaction relies on usability, security, and reliability of the platform; clear risk communication can enhance trust and retention (Kaur et al., 2021). Ensemble modeling and other predictive analytics can identify churn and facilitate focused retention strategies (Galal et al., 2022)

### **Types of Risks in Digital Banking**

The growth of digital banking in Nigeria has brought various risks that need careful oversight. With the expansion and integration of services into the financial system, these risks have become increasingly intricate. Grasping their significance is crucial for safeguarding the financial system and preserving consumer confidence. Researchers pinpoint significant risks associated with digital banking, such as technological, operational, financial, and regulatory hurdles specific to Nigeria

### **Cybersecurity Risks**

Cybersecurity risks dominate Nigeria's digital banking landscape, with rising threats of fraud, breaches, and system attacks undermining trust (Gigante, Martin, & Marutani, 2022; Jiang & Taskin, 2022). Adoption is highly dependent on perceived security (V. & Dr. J., 2022), as seen in Indonesia where consumer trust drives uptake (Tanika et al., 2022). COVID-19 amplified vulnerabilities through remote access and increased transaction volumes (Aniqoh, Nihayah, & Amalia, 2022), while weak controls, poor integration, and low staff training further expose systems (Siek & Rukma, 2022). With consumers often trading security for convenience (Aisha & Rakesh, 2022), Nigerian banks must

combine advanced defenses, governance, and customer education to foster trust and inclusion.

### **Operational Risks**

Operational risks in Nigeria's digital banking sector stem from system malfunctions, human mistakes, and cyber threats, leading to service interruptions and a loss of trust (Rodrigues, Rodrigues, & Oliveira, 2022; Mbama & Ezepue, 2018). Low literacy and reluctance towards technology increase vulnerability (dos Santos & Ponchio, 2021), while favorable conditions and ease of use mitigate threats (Nguyen et al., 2020). The pandemic exposed significant deficiencies in resilience and disaster recovery (Mawarni, 2021; Riza, 2021). Consequently, effective management necessitates strong IT, readiness for crises, and systems focused on customers to maintain dependability and competitiveness (Tiong, 2020).

### **Reputational Risks**

Reputational risk—loss of confidence due to breaches, outages, or privacy issues—has increased with Nigeria's swift digital transformation (Nguyen, Kim-Duc, & Freiburghaus, 2021; Musyaffi & Jakarta, 2021). Inadequate infrastructure and inconsistent digital preparedness enhance susceptibility, while views on regulatory supervision influence consumer trust. Effective communication, data security, and swift incident response are crucial (Nguyen et al., 2021). Quantitative models support forecasting, yet sentiment analysis is essential (Marks, 2020; Zhou, 2017). As incidents such as cyberattacks can heighten reputational damage (Kreibich et al., 2022), financial institutions should integrate reputational risk into their overall strategies, ensuring that security, compliance, and customer service work together to protect trust (Froot, Scharfstein, & Stein, 1992)

### **Theoretical Framework**

The evolving environment of digital banking in Nigeria requires strong theoretical bases to efficiently tackle technological disruptions, cyber threats, regulatory challenges, and operational risks. Theoretical frameworks offer organized methods to recognize, evaluate, and reduce risks, guaranteeing resilience and sustainability in financial systems. This section consolidates essential frameworks pertinent to risk management in digital banking, emphasizing their relevance to the Nigerian environment. Efficient risk management in Nigeria's banking industry necessitates an organized framework that tackles operational, market, and technological risks; as Mukoro (2023) points out, institutions like Union Bank PLC encounter issues like lack of employee training and poor technological infrastructure, which may weaken risk mitigation strategies

**Proactive Risk Management** focuses on foreseeing issues instead of merely responding. Smith and Merritt (2020) contend that ongoing recognition and management of potential risks enhance resilience and adaptability—essential in Nigeria’s rapidly changing digital environment where cybercrime and regulatory changes are common.

**Cyber Risk Management Frameworks** incorporate technical protections, policy strategies, and human elements. McShane, Eling, and Nguyen (2021) highlight models that adapt and grow in response to new cyber threats. In Nigerian banks, where cybercrime is prevalent, incorporating such frameworks enhances systemic integrity and incident response capabilities.

IoT Cybersecurity Frameworks tackle risks stemming from connected devices that are being more frequently employed in customer interactions and transaction oversight. Lee (2020) supports multi-layered security and immediate analytics. This is especially important for Nigerian banks implementing IoT technologies in the context of weak cybersecurity systems.

**Data Analytics and Explainable Artificial Intelligence (XAI)** enhance operational risk management. Araz et al. (2020) show how predictive analytics improve risk detection, whereas Bussmann et al. (2020) emphasize the importance of XAI for promoting transparency, accountability, and adherence to regulations. In Nigeria, these systems allow banks to enhance fraud detection, credit assessment, and compliance oversight.

**Risk Governance Frameworks**, according to Sheedy (2021), highlight accountability, transparency, and the evaluation of systemic risk. These governance principles can be applied to digital banking, where collaboration among stakeholders and multi-level coordination are crucial for tackling regulatory and reputational issues.

**Strategic Risk Management and CSR** enhances risk frameworks even more. Godfrey (2005) defines CSR as a tool for alleviating risks and enhancing reputation. For Nigerian digital banks, integrating CSR into risk management improves legitimacy, customer confidence, and enduring sustainability.

**Enterprise Risk Management (ERM)** offers a comprehensive framework that combines operational, cyber, strategic, and reputational risks into a single model. Aven (2016) emphasizes the interconnections of risks, whereas Kamiya et al. (2019) underscore the financial and reputational consequences of cyberattacks. Integrating machine learning and explainable AI into ERM (Leo, Sharma, & Maddulety, 2019; Bussmann et al., 2019) enhances forecasting and compliance abilities. Additionally,

the integration of CSR into ERM (Godfrey, Merrill, & Hansen, 2009) guarantees conformity with stakeholder expectations. The iterative characteristics of ERM also allow for external shocks, like pandemics (Agca et al., 2016; Crook et al., 2021), via contingency planning and strategies for business continuity.

### **Applicability to the Study**

These frameworks together establish the theoretical basis for examining risk management within Nigerian digital banking. Proactive and cyber risk frameworks emphasize the necessity of foreseeing threats amid increasing cybercrime. IoT, data analysis, and XAI frameworks illustrate how new technologies can enhance risk detection and clarity. Governance and CSR models highlight responsibility, reputation, and stakeholder confidence. Ultimately, ERM combines these viewpoints into a holistic, flexible, and socially accountable strategy. Collaboratively, they steer this research to assess how Nigerian banks can create robust risk management frameworks that protect financial stability while enhancing customer trust in the digital age.

### **Existing Studies and Gaps**

The growth of digital banking in Nigeria has heightened the demand for customized risk management strategies. Current literature offers valuable bases but is frequently restricted in extent or context. Sax and Andersen (2018) emphasize the integration of enterprise risk management (ERM) within organizational strategy, whereas Florio and Leoni (2017) associate ERM with improved performance in European companies. However, these studies represent advanced economies and disregard Nigeria’s infrastructure and regulatory issues.

Studies concentrated on particular risks provide limited understanding. Alshatti (2017) indicates that effective credit risk management improves bank performance, applicable to digital lending yet limited in focus. Paté-Cornell et al. (2018) highlight cyber risks in critical infrastructure, stressing the importance of cybersecurity, though not specifically addressing banking. Additional research (Wieland, 2017; Brustbauer, 2016) offers insights on systemic and organizational risks, whereas Asravor (2018) emphasizes behavioral risk preferences, which are important for comprehending customer trust in digital platforms. As Erude, Okereka, and Taiwo (2024) observe in their study of public enterprise failures, weak institutional frameworks remain a critical source of systemic risk in Nigeria; this insight is equally relevant to digital banking, where fragile governance mechanisms heighten exposure to cyber, operational, and regulatory threats. Organizational structures and reward systems significantly influence staff commitment and operational efficiency, which indirectly affect risk exposure in financial institutions;

Mukoro and Ekpu (2024) note that outdated reward systems and poor interdepartmental coordination can compromise institutional stability and service quality. Nonetheless, their sectoral contexts restrict direct application to banking in Nigeria. Combining these studies uncovers significant omissions. Limited research combines cyber, credit, operational, and strategic risks within a single framework for Nigeria's digital banking industry. ERM models continue to be insufficiently tested in settings characterized by fragile infrastructure, changing regulations, and socio-economic complexities. Behavioral elements—like digital literacy, trust, and cultural perspectives—are insufficiently examined even though they impact adoption and risk awareness. Additionally, existing frameworks typically do not fully address the rapidity and intricacy of technological risks like cyberattacks, fraud, and data breaches. Many research efforts are focused on the West and overlook Nigeria's institutional vulnerabilities, regulatory irregularities, and limited cybersecurity awareness.

In summary, although current studies offer important perspectives, they fall short in reflecting Nigeria's actual conditions. Adaptive, context-specific risk management frameworks are necessary to integrate various risks along with institutional and behavioral aspects to foster the sustainable development of digital banking

### Research Methods

This research utilizes a qualitative methodology based on a theoretical framework to explore risk management in the realm of digital banking in Nigeria. Selecting a qualitative approach is warranted by the study's aim to offer a comprehensive insight into the various risks—operational, technological, cyber, regulatory, and financial—that define digital banking, along with the strategies and frameworks established to address them. In contrast to quantitative approaches that focus on numerical data, qualitative research facilitates deep understanding of intricate processes, contextual factors, and regulatory specifics influencing digital banking practices (Creswell & Poth, 2018).

### Research Design

The study employs a structured qualitative review of academic and non-academic sources to encompass both theoretical perspectives and practical aspects of risk management in digital banking. This method facilitates the combination of theoretical models with real-world data, guaranteeing a comprehensive grasp of the topic. Through a synthesis of current literature, the research assesses the intersection of global risk management strategies with Nigeria's developing digital financial landscape.

### Sources of Data

Data for this study were drawn exclusively from secondary qualitative sources, with a deliberate focus on authoritative and credible materials. The sources included:

1. Peer-reviewed journal articles – accessed through databases such as JSTOR, ScienceDirect, and Google Scholar, ensuring engagement with current academic debates.
2. Books and monographs – providing theoretical foundations on enterprise risk management, digital banking, and financial regulation.
3. Regulatory and policy documents – including reports and guidelines from the Central Bank of Nigeria (CBN), Nigeria Deposit Insurance Corporation (NDIC), and international regulatory bodies such as the Bank for International Settlements (BIS).
4. Industry and professional reports – published by institutions like PricewaterhouseCoopers (PwC), KPMG, and Deloitte, offering insights into practical challenges and best practices in digital banking risk management.
5. Recent empirical studies (2015–2024) – focusing on global and Nigerian experiences of digital transformation in banking, to capture contemporary challenges such as cybercrime, fintech disruption, and compliance complexities.

### Data Collection and Analysis

A structured process of identification, screening, inclusion, and synthesis was employed to conduct a systematic literature review (SLR). Search keywords encompassed “risk management in digital banking,” “cybersecurity within Nigerian banks,” “operational challenges in digital finance,” and “regulatory structures for financial technology.” The criteria for inclusion focused on studies released from 2015 to 2024 to maintain relevance to contemporary technological and regulatory environments.

The chosen literature underwent thematic analysis, facilitating the discovery of consistent patterns, developing trends, and theoretical gaps. Thematic coding facilitated the classification of risks (e.g., operational, cyber, compliance) and management approaches (e.g., enterprise risk management, regulatory compliance frameworks, technological protections). This analytical approach enabled the creation of a conceptual framework specifically designed for the Nigerian digital banking industry, connecting international theories with domestic realities.

### Ethical Considerations

This research is based entirely on publicly accessible secondary sources, thus it did not engage human participants or gather primary data. Nonetheless, focus was placed on the trustworthiness, dependability, and ethical application of information

through precise referencing and compliance with academic integrity norms.

### **Analysis, Findings, and Discussion**

The rise of digital banking in Nigeria has changed banking practices but also brought about intricate risks necessitating strong management systems. This research, based on theory and data, emphasizes the key risk factors and assesses the success of current practices.

A crucial discovery is the increased vulnerability to cyber threats. Wang, Nnaji, and Jung (2020) highlight a rise in cybersecurity incidents within Nigerian internet banking, revealing weaknesses in system protocols and diminishing customer confidence. In a similar vein, Omotosho (2021) demonstrates that security vulnerabilities and system inadequacies hinder the mobile banking user experience, emphasizing the need to incorporate advanced cybersecurity strategies into risk frameworks. The use of digital media and technology improves data gathering and decision-making, vital for overseeing and controlling operational risks; Okereka, Orhero, and Okolie (2024) emphasize how digital platforms boost research precision and effectiveness, a concept that directly relates to risk management in digital banking.

Risk management additionally impacts financial outcomes and customer contentment. Madugba et al. (2021) identify a favorable connection between the adoption of electronic banking and the profitability of banks, indicating that effectively managed risks improve financial results. Raji, Zameni, and Abdulwakil (2021) additionally demonstrate that customer satisfaction relies on trustworthy and safe digital services, highlighting risk management as a protective and strategic instrument.

Operational risks encompass interbank transactions. Nwaozumudoh et al. (2021) suggest a framework aimed at enhancing transaction precision, emphasizing systemic vulnerabilities stemming from mistakes and breakdowns in communication. This corresponds with Adewoye and Obasan (2012), who contend that IT adoption necessitates simultaneous reforms in organizational procedures and employee skills, merging technological and human resource aspects in risk management. On theory foundation

The conversation also includes sustainability and governance. Nwagwu (2020) highlights the importance of management education in promoting sustainable banking practices and preparing professionals to foresee risks arising from digital transformation. Incorporating sustainability into risk frameworks guarantees considerations for ethics, regulations, and long-term resilience.

Obstacles continue to exist. Weaknesses in infrastructure—like inconsistent electricity and insufficient broadband—and regulatory shortcomings impede efficient risk management (Wang et al., 2020; Nwaozumudoh et al., 2021). Regulatory reactions

frequently fall behind advancements, making compliance and enforcement more challenging. Thus, context-aware, adaptive models are critical.

The human element continues to be crucial. Adewoye and Obasan (2012) emphasize that training employees and enhancing their skills are vital for handling digital risks, aligning with Nwagwu's (2020) appeal for ongoing professional growth. In the same way, consumer behavior affects risk exposure; Raji et al. (2021) note that views on reliability and security promote adoption, whereas adverse experiences heighten susceptibility to mistakes and fraud. Therefore, customer education should be integrated into risk strategies

### **Conclusion**

A robust risk management framework for Nigeria's digital banking industry should be multifaceted—integrating technological protections, institutional capability, customer interaction, sustainability, and regulatory supervision. Although cybersecurity is the foremost threat, efficient risk management additionally boosts performance, trust, and competitive edge. Harmonizing technical systems with human and organizational elements provides a more comprehensive and flexible method.

### **Recommendations**

In line with Erude and Mark's (2023) assessment of contingency theory, effective risk management in Nigeria's digital banking sector requires adaptive frameworks that respond to contextual factors such as regulatory shifts, technological disruptions, and customer behavior, rather than relying on rigid, uniform models.

The following are recommendations for all stakeholders viz practitioners cum policy makers:

#### **Strengthen Technological and Human Capacity**

Banks need to allocate resources to sophisticated cybersecurity technologies (encryption, multi-factor authentication, real-time fraud detection) and consistently educate staff to improve awareness and strength against digital threats.

#### **Adopt Robust Risk Governance Frameworks**

Incorporating digital risk management into enterprise risk governance, featuring defined accountability, flexible controls, and ongoing monitoring, is crucial to tackle the changing threat landscape.

#### **Enhance Regulatory Oversight and Collaboration**

Regulators need to create transparent digital banking standards, conform to international best practices, and encourage cooperative frameworks among banks, governmental bodies, and tech providers to enhance resilience across the sector.

### Promote Customer-Centric Risk Communication

Banks should emphasize clear communication and educate customers on secure digital habits to foster trust, decrease fraud risks, and enhance customer loyalty.

### Contributions to Knowledge

1. This research emphasizes the relationship among customer trust, risk communication, and behavioral intention as vital factors influencing the adoption of sustainable digital banking in Nigeria.
2. It broadens the discussion on risk management by connecting technological, institutional, and regulatory approaches within a cohesive framework designed for emerging economies.

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## Does Risk Management Drive Financial Performance of Companies in Era of Digital Transformation?

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### **Abstract**

*The study investigates whether risk management drive financial performance of companies in era of digital transformation in Nigeria. Digital transformation era spanning from the period 2014-2024 and ex-post-facto research design were used. Two (2) risk management measures, liquidity and capital adequacy risks and one(1) financial performance measure was employed. The study obtained a sample of fifteen (15) industrial and consumer goods companies listed on Nigerian Exchange Group. Data obtained were analyzed via a combination of descriptive, regression diagnostic and inferential statistical tools. The panel-corrected standard errors regression result revealed that liquidity risk (Z-score = 7.37; Probability =  $0.000 < 0.05\%$ ), and capital adequacy risk (Z-score = 6.57; Probability =  $0.000 < 0.05\%$ ) significantly affect the level of financial performance. The implication is that efficient risk management vis-à-vis liquidity and capital adequacy risks drive financial performance, particularly in era of digital transformation. The study recommends among others that the management of listed industrial and consumer goods companies should consider incorporating broader and industry-specific risk management systems like operational, supply chain, and foreign exchange risks together with traditional financial risks in their risk management framework. Also, there is the burning need for more inclusive digital system in the risk management frameworks of listed industrial and consumer goods companies in Nigeria. This study contributes to knowledge as it offers a more critical assessment of risk-performance relationship of industrial and consumer goods companies in era of digital transformation.*

**Keywords:** Risk management; Liquidity risk; Capital adequacy risk; Credit risk; Digital era

### **Introduction**

Practically, business's main goals are to maximize shareholders' wealth, earn a profit and run smoothly. Consistent profitability allows businesses to provide important stakeholders, including shareholders, creditors, and employees, with sufficient returns even in difficult or uncertain business circumstances. However, this goal may be hampered by a number of dangers, particularly in era of digital transformation (Adebayo & Olamide, 2021). Olawole (2024) asserts that effective risk management can improve organisational performance in every industry. Better financial results are supported, strategic planning is strengthened, service delivery is enhanced, competitive advantage is sharpened, resource utilisation is optimised, and unforeseen disruptions are reduced.

Proactive risk management, according to Ojo and Olaleye (2022), entails ongoing risk identification and assessment in order to help avert unanticipated circumstances that might interfere with operations. Risk management is more important than ever during pandemics, global crises, and digital change because it enables businesses to take advantage of

opportunities while reducing risks. When a business's revenue surpasses its operating and indirect expenses and shareholder wealth rises as a result of consistent dividend payments and capital gains connected to the expansion of the business, profitability is achieved (Johnally & Toyin, 2023). Protecting assets and cutting costs require an understanding of business risks, whether they be accidental, financial, strategic, or operational. Effective risk management guarantees a safe investment for all parties involved.

Avoiding significant unforeseen consequences, whether favourable or unfavourable, that diverge from businesses' expectations is the main objective of risk management. By continuously recognising and reducing possible risks, firms can more effectively accomplish their financial objectives through effective risk management. Strong risk management skills set sustainable and productive manufacturing companies apart (Uwuigbe & Fakile, 2020). Identification of risk patterns and evaluation of the efficacy of controls are further facilitated by a strong risk management system, which includes ongoing monitoring, cyber-security awareness, and internal audits. According to Fali, Nyor, and Mustapha

(2020), the first step in the risk management cycle is to match risk initiatives with organisational realities and strategic goals. Inherent hazards are identified, risk analysis and appraisal are carried out, reporting, decision-making, treatments, monitoring, and residual risk assessment are the next steps in this process.

Furthermore, to maximise success and reduce failure, organisations must manage risk in a proactive and strategic manner by incorporating it into their everyday operations. According to Adamgbo, Toby, Momodu, and Imegi (2019), risk management is an essential component of business that lowers the likelihood of losses and aids organisations in achieving their objectives. Management must identify susceptible regions and possible exposures in order to protect against financial risks. The relationship between risk management and financial performance is still unknown, despite the fact that numerous research have examined how risk management influences financial risk in Nigerian manufacturing organisations. Although it is generally accepted that risk management improves performance, the fundamental issue is the mismatch between risk management and the financial performance of Nigeria's publicly traded consumer goods and industrial enterprises in the age of digital transformation. Arising from the above discuss, the study was set out to achieve two (2) specific objectives:

- (i) To examine the effect of liquidity risk on financial performance of listed industrial and consumer goods companies in Nigeria; and
- (ii) To ascertain the effect of capital adequacy risk on financial performance of listed industrial and consumer goods companies in Nigeria.

## **Review of Related Literature**

### **Risk Management**

Owolabi and Ajayi (2021) noted that business risk is the uncertainty that exists in a company's operating environment, which is frequently demonstrated by fluctuations in operating income and can have a negative impact on profitability. Risk management is the process of identifying, evaluating, prioritising, and mitigating the negative effects that uncertainty causes (Uwuigbe & Fakile, 2020). In this context, risk management is a structured approach to minimising the negative outcomes of specific events. Risk is an exposure to threats or uncertainty, and while it can present challenges, it can also provide economic benefits, as firms can make significant profits by taking calculated risks.

According to Oluwagbemi and Adebisi (2021), risk is inextricably linked to opportunities and threats that may have an impact on planned activities or results. Risk, according to Oluwagbemi and Adebisi (2021), is "uncertainty that matters" in a business context.

The possibility that actual returns will differ from predicted returns is a common definition of risk in the context of finance. Okoye and Eze (2020) opined that risk management is a thorough procedure carried out by the board, executives, and employees of an organisation. It is included into enterprise-wide initiatives and strategic planning with the goal of identifying possible occurrences that might have an impact on the company and controlling these risks to manageable levels.

Consequently, this provides an acceptable level of certainty that the organization's goals will be met. The fundamental steps in the risk management process are risk identification, assessment, and mitigation, followed by activity monitoring and control that may result in losses, usually monetary ones. A systematic and generally recognised strategy to risk management is described in project management literature (Ogunode, Awoniyi & Ajibade, 2022). Ogunode et al. (2022) assert that choosing the right risk mitigation technique lowers the uncertainty associated with a risk as well as the possibility or impact of it happening.

### **Liquidity Risk**

Liquidity risk and operational funding liquidity risk are the two primary parts of liquidity risk. According to Eze and Okoye (2020), operational funding liquidity is the company's capacity to handle daily cash flow, whereas asset liquidity is the ease with which a corporation may turn its assets into cash in times of unexpected or pressing need. If a business cannot make enough money to pay for its basic operational costs, a large or seasonal decline in sales could be a major concern. This explains why analysts and investors closely consider metrics like free cash flow when evaluating a company's investment prospects and emphasises the significance of efficient cash flow management for business sustainability (Ene & Inyang, 2021).

Liquidity, as defined by Ene and Inyang (2021), is the ease and speed with which a security or asset can be exchanged for money on the market. Two primary categories of liquidity risk can be distinguished. The first is cash flow risk, often known as funding risk, which relates to a business's capacity to pay its debts. Corporate treasurers must make sure there are enough money on hand to cover liabilities, therefore this is a top priority (Odubuasi et al., 2020). The fast ratio and the current ratio are typical measures of this risk. The inability to sell an asset quickly without compromising its value is known as market or asset liquidity risk, or simply when assets become difficult to liquidate.

According to Ndubuisi (2022), liquidity risk is the incapacity of organisations or people to meet short-term financial obligations since it is difficult to turn assets into cash without suffering losses. Businesses might be compelled to sell securities or other assets below their market value in such a scenario. Poor

market efficiency, cash flow constraints, the asset's nature, urgency, and unfavourable market conditions are some of the causes of this (Egbunike & Okoye, 2020). Egbunike and Okoye (2020) added that it is critical for investors and businesses to comprehend and control liquidity risk. It helps individuals make wise choices, guaranteeing that they can continue to fulfil their financial commitments. Entities may purchase assets that are challenging to sell without incurring losses or financial pressure if they are not properly informed of the risks associated with liquidity.

### **Capital Adequacy Risk**

Given Nigeria's economic instability and regulatory requirements, Capital Adequacy Risk (CAR) is still a major concern for publicly traded manufacturing enterprises in the nation. Maintaining a strong capital base is crucial for a company's ability to withstand financial shocks and remain resilient during recessions (Ogunode et al., 2022). The efficiency with which manufacturing companies in Nigeria handle their capital structure is a crucial component of CAR. According to research, keeping enough funds on hand is essential for reducing risks, particularly those associated with debt and market volatility. For instance, the study by Ogunode et al. (2022) highlights the significance of optimising capital composition to maintain profitability and lower financial risk, noting that the capital adequacy ratio influences both risk exposure and profitability.

Numerous studies indicate a high correlation between a firm's capital strength and its financial stability, generating significant scholarly interest in the relationship between capital adequacy and financial success. Maintaining sufficient capital levels is essential for Nigerian manufacturing companies to manage operational risks like credit exposure and liquidity issues. Adequate capital acts as a safeguard against these dangers, especially when the economy is unstable. According to research by Asogwa and Isinguzo (2017), companies that use good capital management techniques typically outperform their competitors and are better equipped to handle market volatility, which is a prevalent problem in Nigerian company.

Furthermore, a firm's liquidity is directly impacted by CAR. A healthy capital adequacy ratio not only increases liquidity but also allows businesses to pay their financial obligations without sacrificing operational performance, according to numerous studies conducted in Nigeria. On the other hand, inadequate capital management can lead to shortages in liquidity, which increases a company's vulnerability to outside financial strains. According to Adamgbo et al. (2019), having enough capital reserves improves a company's liquidity position and lowers its vulnerability to financial instability. Another crucial element in controlling capital adequacy concerns for Nigeria's listed manufacturers

is regulatory oversight. Minimum capital requirements are set by standards like the Basel III framework to make sure businesses can survive economic crises.

According to Olawale (2024), Nigeria's capital adequacy regulations support the stability of individual businesses as well as the overall well-being of the financial system. Stricter adherence to these guidelines is recommended by the study in order to protect businesses from systemic threats and guarantee their long-term survival. In conclusion, the long-term prosperity of Nigerian listed manufacturing companies depends on their ability to successfully manage capital adequacy risk. Businesses can manage liquidity, absorb losses, and reduce their vulnerability to external risks with the support of a solid financial foundation. There is proof that risk management and financial performance are closely related to capital adequacy levels. Therefore, in the face of persistent economic uncertainty, manufacturing enterprises must prioritise capital optimisation and regulatory compliance in order to achieve sustainable growth and financial resilience.

### **Financial Performance**

Performance is a general term that describes some or all of an organization's operations during a given time period, frequently in connection with managerial accountability, cost effectiveness, and other relevant aspects. As a result, performance encompasses both the calibre of results attained and task execution. It is a gauge of an organization's operational state, success, and compliance with objectives (Adeniyi & Ojo, 2021). Performance, according to Akinleye and Olanipekun (2021), is the process of calculating the financial results of a business's plans and operations. They stress that performance gives information about a company's financial health over a specific time period by showing how well it is reaching its goals and adhering to standards.

Financial performance can also be used to evaluate the success of the industry as a whole or to compare similar businesses within the same industry. A important component of financial performance is profitability; return on asset (ROA) is a crucial indicator of how well a business uses its assets to produce net income (Adeniyi & Ojo, 2021). According to Adeniyi and Ojo (2021), a higher ROA denotes more effective resource use. Since it shows how well management can generate profits from the company's asset base, ROA is frequently considered a crucial accounting metric of performance. It is computed by dividing total assets by earnings after taxes. ROA served as the study's financial performance metric.

### **Theoretical Framework**

A number of theoretical frameworks aid in the comprehension of risk management systems in

businesses. Stakeholder theory, resource dependence theory, neo-institutional theory, and conventional models like financial and agency theory are among them. Agency theory, which sees the company as a contractual arrangement between managers (agents) and shareholders (principals), is frequently used to analyse corporate risk management. While shareholders trust managers to work in their best interests, managers are given the power to make decisions (Jensen, 1983 referenced in Adeniyi & Ojo, 2021). However, because it focusses exclusively on the financial structure of organisations, this framework has a limited reach.

Furthermore, it draws attention to conflicts of interest that develop when management and stockholders have unequal access to information. In order to reduce management-related risks, Jensen (1986), referenced in Akinleye and Olanipekun (2021), highlighted the necessity of procedures that match managerial interests with those of shareholders. These mechanisms might be external, like market-based forces like takeover threats or the auditing profession, or internal, like legal frameworks like the board of directors and general meetings. Stakeholder theory, on the other hand, broadens the conventional business viewpoint to encompass all stakeholders in addition to shareholder interests.

Akinleye and Olanipekun (2021) assert that the notion of stakeholders expands managerial accountability and promotes more inclusive decision-making. It sees the firm as a coalition of different interest groups and is one of the most often used frameworks in academic discourse. According to Freeman, this viewpoint empowers managers to make more advantageous and strategic choices. However, Donaldson and Preston delineated three aspects of stakeholder theory: Descriptive (which explains how firms actually function and interact with their environment); Instrumental (which demonstrates how managing stakeholder relationships helps achieve firm objectives); and Normative (which legitimises the interests of stakeholders, not just shareholders, and provides an ethical foundation for decision-making).

The manager's position is thus reshaped by stakeholder theory, which proposes that in order to lower risks and improve total value creation, they should endeavour to balance the interests of all stakeholders involved in the company. Another viewpoint is provided by the new institutional economics perspective. It looks at how businesses legitimise themselves by embracing socially and culturally accepted practices. To preserve the legitimacy of their company, managers try to match their choices—whether in financing, governance, or investment—with what society expects (Suchman, 1995 cited in Adeniyi & Ojo, 2021). The idea that a company's actions are consistent with recognised standards and values is what is meant by legitimacy in this context. In addition to strategic considerations,

decisions like changing the board's size are taken to satisfy social legitimacy requirements. More responsible behaviour may result from managers being inspired to better manage social and environmental risks by this emphasis on legitimacy. Furthermore, this hypothesis suggests that by lowering the firm's risk exposure, shareholders could seek to draw in large investors (blockholders).

### Empirical Studies

Ososuppor and Okoro (2023) looked into the connection between the firm value of quoted banks in Sub-Saharan Africa and enterprise risk management by using a post-examination research design. A sample of twenty-seven (27) commercial banks was gathered from three (3) Sub-Saharan African regions: South Africa, Kenya, and Nigeria. The firm value (Tobin's Q) is the dependent variable, and enterprise risk management (as determined by enterprise risk management size, independence, and disclosures) is the independent variable. The annual reports and accounts of the banks in Sub-Saharan Africa that were sampled between 2012 and 2021 provided secondary data. Inferential statistics (principal component analysis, fixed and random effects panel data regression), diagnostic statistics (variance inflation factor, heteroscedasticity, Ramsey regression specification-error test, Cameron and Trivedi's decomposition of IM-test), and descriptive statistics (mean, median, standard deviation, kurtosis, skewness, and Pearson correlation) were used to analyse the data. According to the fixed and random effects panel data regression results, enterprise risk management size insignificantly and negatively affects firm value in Sub-Saharan Africa, whereas enterprise risk management independence and enterprise risk management disclosure positively and significantly affect firm value.

Isedu and Erhabor (2021) used regression analysis to look at how financial risks affected the performance of Nigerian deposit money institutions. The performance of the bank was not adversely affected by the combined financial concerns. In particular, market risk, interest rate risk, and operational risk did not significantly affect bank performance over the study period, whereas credit risk did not exhibit a significant link with performance. Liquidity risk, on the other hand, had a considerable impact. Efuntade and Akinola (2020) used panel regression to examine the financial performance and business features of Nigerian manufacturing companies from 2005 to 2018. They concluded that there is a considerable relationship between firm characteristics and performance, noting that ROA is strongly influenced by business size, age, liquidity, sales growth, and leverage.

The financial risk and performance of commercial and service enterprises listed on the Nairobi Securities Exchange (NSE) were examined by Onsongo, Muathe, and Mwangi (2020). Credit risk

had a positive but negligible impact on ROE, liquidity risk had a considerable negative impact, and operational risk had a positive but negligible impact, according to their analysis of panel data from 2013–2017 using an explanatory research design and a random effects model. While the negative liquidity coefficient indicated liquidity issues with current liabilities exceeding assets, the positive credit risk coefficient revealed that businesses expanded credit uptake to improve performance.

Using secondary data from 2014–2018 and a causal research approach, Odubuasi, Oshilim, and Ifurueze (2020) examined the market risks and financial performance of Nigerian oil and gas companies. Multiple regression studies, descriptive statistics, and correlation revealed that the exchange rate had a substantial impact on both ROA and ROE, the interest rate had a large impact on ROE but not ROA, and changes in the price of commodities and stocks had no discernible impact on performance. Ironkwe and Osaat (2019) used data from 1986 to 2016 to examine risk asset management and financial performance in Nigerian insurance companies. They came to the conclusion that ROE, ROA, and leverage risk are significant short- and long-term predictors of risk asset management by using the Johansen co-integration and error correction models.

Nyameh et al. (2019) evaluated the impact of risk management on the performance of 20 Nigerian companies that were registered in Taraba State with the Corporate Affairs Commission (CAC). Through the use of descriptive statistics and correlation matrices to analyse annual reports and financial statements, the study demonstrated that while the presence of a Chief Risk Officer had a negative impact on performance, risk management committees, financial expertise, audit committees, and board size had a positive impact. Half of the risk management factors considered in the current analysis were covered in this investigation.

Adegbola et al. (2019) used secondary data using a descriptive design to evaluate the effect of ERM on the performance of a subset of Nigerian manufacturing enterprises. The results showed a strong positive correlation between ROE and ERM practices as well as between ROE and liquidity (current ratio). On the other hand, ROE had a negative relationship with leverage (the debt-to-equity ratio). However, the study only looked at manufacturing and utilised ROE, which isn't a complete efficiency indicator, to judge performance. ROE is therefore included in the current analysis together with other performance indicators.

Chukwunulu, Ezeabasili, and Igbodika (2019) used regression analysis to evaluate the impact of credit

risk on bank performance. They discovered that non-performing loans and profitability metrics (ROA and ROE) had a negative correlation, which led to a decline in profitability. Amenawo, Udoka, and James (2019) used data from the Central Bank of Nigeria from 1986 to 2017 using an exploratory approach to study the financial risk and performance of Nigerian SMEs. Financial risk and SME performance were revealed to have a negative but negligible long-term association using autoregressive distributed lag (ARDL) approaches. In the medium and long term, however, SMEs were significantly impacted negatively by currency rate, liquidity, interest rate, and inflation risks, suggesting that financial risks impair SME performance and have to be managed.

### Methodology

The research design used in this study was ex post facto. All manufacturing companies listed on the Nigeria Exchange Group (NGX) between 2014 and 2024 make up the study's population. Since the majority of corporations' annual reports for the 2025 fiscal year had not yet been fully released at the time of the study's conduct, it was not possible to expand its scope to include 2025. The published yearly financial statements and accounts of the selected companies for the study period served as secondary sources of the data used in this investigation. Again, the period 2014–2025 was chosen because it marked the era of digital transformation.

Furthermore, two (2) risk management measures, liquidity and capital adequacy risks and one (1) financial performance measure were employed. The study obtained a sample of fifteen (15) industrial and consumer goods companies listed on Nigerian Exchange Group. Data obtained were analyzed via a combination of descriptive, regression diagnostic and inferential statistical tools. Given the dependent and independent variables of the study, the following empirical models were estimated:

$$FRP = F(LR, CAR)$$

$$FRP_{it} = a_0 + a_1 LR_{it} + a_2 CAR_{it} + \mu_t$$

Where:  $FRP_{it}$  Firm performance (measured as ROA which is profit after tax divided by total assets of firm  $i$  in year  $t$ );  $LR_{it}$  is liquidity risk (current ratio measured as current assets divided by current liabilities of firm  $i$  in year  $t$ );  $CAR_{it}$  is capital adequacy risk (measured by dividing the total capital of a bank by its risk-weighted assets of firm  $i$  in year  $t$ );  $\mu_t$  is error term;  $it$  is firms at time  $t$ ;  $a_0, a_1, a_2$ , is constant of coefficient.

## Results

**Table 1: Summary of Descriptive Statistics**

| Parameters | Mean Score | Std. Dev. | Minimum Score | Maximum Score | Skewness Score | Kurtosis Score |
|------------|------------|-----------|---------------|---------------|----------------|----------------|
| FRP        | 2.295      | 17.147    | -179.91       | 176.26        | -1.462         | 41.95          |
| LR         | -2.840     | 117.26    | -3123.0       | 202.90        | -25.89         | 688.7          |
| CAR        | 45.488     | 37.956    | 0             | 376.4143      | 4.691          | 34.41          |

Source: Researcher's Computation (2025)

Important information on the data distribution and variability of the financial performance and risk management indicators among Nigerian manufacturing enterprises can be gained from the descriptive statistics of the variables utilised in this study. A low average level of performance is indicated by the financial performance (FRP) variable's mean of 2.295 while a large standard deviation of 17.147 suggests that there are significant differences amongst organisations. Significant variations are evident in the lowest and maximum values (-179.91 and 176.26, respectively), which are probably the result of outliers. Extreme values are confirmed by the exceptionally high kurtosis (41.95)

and negative skewness (-1.46), which show a left-skewed distribution with large tails.

With a mean of -2.84 and an exceptionally high standard deviation of 117.26, liquidity risk (LR) indicates a significant degree of volatility. A very asymmetric distribution with several extreme values is indicated by the extremely high kurtosis (688.7) and extreme negative skewness (-25.90), which may have a significant impact on model estimation and inference. With a comparatively high average of 45.49 and a standard deviation of 37.956, capital adequacy risk (CAR) exhibits significant variability. Numerous big values could affect the average since the distribution is leptokurtic (kurtosis of 34.41) and positively skewed (4.691).

**Table 2: Pearson Correlation**

| Variable   | FRP     | LR      | CAR    |
|------------|---------|---------|--------|
| <b>FRP</b> | 1.0000  |         |        |
| <b>LR</b>  | -0.0233 | 1.0000  |        |
| <b>CAR</b> | -0.1253 | -0.0116 | 1.0000 |

Source: Researcher's Computation (2025)

The study's variables' linear relationships are revealed by the correlation analysis. There is virtually no linear link between liquidity risk (LR) and financial success, as evidenced by the very weak negative correlation (-0.0233). Financial performance and capital adequacy risk (CAR) have a negative correlation (-0.1253), which is the largest negative association among the risk factors. This suggests that financial performance may be marginally lowered by

increasing capital adequacy risk. Additionally, it seems that there is little correlation between the independent variables. There is hardly any significant association between LR and CAR, as seen by their minor negative correlation (-0.0116). Since there is no high correlation (i.e., above 0.7 or below -0.7) between any two variables, these weak connections imply that multi-collinearity is not an issue.

**Table 3: Variance Inflation Factor (VIF)**

| Variable        | VIF         | 1/VIF    |
|-----------------|-------------|----------|
| <b>CAR</b>      | 1.04        | 0.962154 |
| <b>LR</b>       | 1.01        | 0.991265 |
| <b>Mean VIF</b> | <b>1.03</b> |          |

Source: Researcher's Computation (2025)

According to the Variance Inflation Factor (VIF) results, multicollinearity is not an issue in this research. The VIF values for each variable are quite near to 1, with liquidity risk (LR) having the lowest value at 1.01 and the highest at 1.03. These results demonstrate that the independent variables, LR and CAR, are not substantially associated with each other, as VIF values below 10 (or, more conservatively, below 5) are often regarded as acceptable. This is further supported by the mean VIF of 1.03, which guarantees the stability and dependability of the

regression estimates and shows a very low degree of multicollinearity.

**Table 4: Breusch Pagan Test****Breusch Pagan Cooke/Weisberg  
Test for Heteroskedasticity**

Chi2(1) = 223.62; Prob&gt;chi2= 0.0000

Source: Researcher's Computation (2025)

The findings of the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity show that the regression model contains heteroskedasticity. The p-value of 0.0000, which is much below the traditional cut-off of 0.05, indicates that the test statistic ( $\text{Chi}^2 = 223.62$ ) is very significant. This indicates that we accept the alternative that the variance of the residuals is not constant and reject the null hypothesis of homoskedasticity,

or constant variance of errors. Practically speaking, this breach of a fundamental OLS premise suggests that standard errors might be skewed, which could compromise the validity of confidence intervals and hypothesis testing. Robust standard errors or alternative estimators that are consistent with heteroskedasticity should be employed to address this.

**Table 5: Panel-Corrected Standard Errors Regression**

|                   |        |           |       |                |            |           |
|-------------------|--------|-----------|-------|----------------|------------|-----------|
| Period: 2014-2025 |        |           |       | R-squared =    |            | 0.0902    |
|                   |        |           |       | Wald chi2(1) = |            | 25.62     |
|                   |        |           |       | Prob > chi2 =  |            | 0.0000    |
| Panel-corrected   |        |           |       |                |            |           |
| FRP               | Coef.  | Std. Err. | Z     | P>z            | [95% Conf. | Interval] |
| LR                | 0.3940 | 0.0997    | 7.37  | 0.000          | 0.1985     | 0.5894    |
| CAR               | 0.3838 | 0.0484    | 6.57  | 0.000          | 0.1373     | 0.9380    |
| cons              | 0.7625 | 0.1181    | 12.45 | 0.000          | 0.5309     | 0.9941    |

Source: Researcher's Computation (2025)

The findings of the Panel-Corrected Standard Errors (PCSE) regression for all of the panel data from 2014 to 2024 are shown in Table 5. The model implies that there is no serial correlation in mistakes over time within panels, hence the panel was first balanced without autocorrelation. Second, the panel is balanced and indicates that residuals may be associated across panels; corrections were made. The model comprises three (3) estimated coefficients: one for the constant (\_cons) and one for FRP, LR, and CAR. The model essentially explains just 9% of the variance in the dependent variable, according to the R-squared of 0.0902 (poor explanatory power). However, the probability Chi2(1) is 0.0000 (low), which is less than 0.05%, showing that the entire model is statistically significant at conventional levels (e.g., 1% and 5%). The Wald Chi2(1) is 25.62, indicating the joint significance test of model coefficients. This indicates that the independent variable did a good job of explaining variance in the dependent variable.

Additionally, the estimated effect on the dependent variable (FRP) indicates that there is a correlation between an increase in FRP (the dependent variable) and a one-unit rise in LR and CAR (the independent variables). The effect is robust and significantly positive, as indicated by the statistical significance of the result ( $p <$

0.000). The results of the panel-corrected standard errors regression showed that the degree of financial performance is considerably impacted by both capital adequacy risk (Z-score = 6.57; Probability =  $0.000 < 0.05\%$ ) and liquidity risk (Z-score = 7.37; Probability =  $0.000 < 0.05\%$ ). The inference is that financial performance is driven by effective risk management in relation to liquidity and capital adequacy issues, especially in the age of digital transformation.

### Conclusion and Recommendations

Digital transformation has generally been accepted as a vital way of improving performance at the corporate and national levels. In the context of Nigeria's digital transformation, we investigated in this study if risk management influences the financial performance of publicly traded companies. Using an ex-post-facto research design, the digital transition era from 2014 to 2024 was examined. One (1) financial performance metric and two (2) risk management strategies - liquidity and capital adequacy risks were used. Fifteen consumer and industrial goods businesses listed on the Nigerian Exchange Group Limited were selected for the study. A combination of descriptive, regression diagnostic, and inferential statistical tools were used to analyse the collected data. The panel-corrected standard errors regression

result demonstrated that liquidity risk and capital adequacy risk greatly affect the level of financial performance.

The finding implies that financial performance is driven by efficient risk management in relation to liquidity and capital adequacy, especially in the era of digital transformation. The study suggests, among other things, that in addition to traditional financial risks, management of publicly traded industrial and consumer goods companies should think about integrating more comprehensive and sector-specific risk management systems, such as supply chain, operational, and foreign exchange risks. In the risk management frameworks of Nigerian listed industrial and consumer products companies, there is also an urgent demand for a more inclusive digital systems. This study advances knowledge because it offers a more critical evaluation of the risk-performance relationship of industrial and consumer goods companies in the age of digital transformation.

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## Social Inequalities and Urban Development in Nigeria: Examining the Role of Inclusive Planning in Achieving Sustainable Cities

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### Abstract

*Nigeria's rapid urbanisation has intensified inequalities, with class, gender, and community disparities shaping access to land, housing, infrastructure, and governance. Lagos, as a rapidly expanding megacity, reflects these dynamics, where urban planning often privileges elite interests while marginalising vulnerable populations. This study examines how inclusive planning can address such disparities in pursuit of Sustainable Development Goal 11. Adopting a phenomenological research design, 15 purposively selected participants, urban planners, government officials, community leaders, NGOs, and residents of informal settlements, were engaged through semi-structured interviews. Data were analysed thematically to capture the lived experiences and perceptions of diverse stakeholders. The results highlight entrenched exclusions in planning, elite capture of urban resources, and tokenistic participation of marginalised groups. Women face particular disadvantages in tenure, mobility, and representation. Nonetheless, opportunities exist through participatory governance, pro-poor housing policies, and gender-responsive infrastructure to promote inclusive growth. Urban development in Lagos is shaped by systemic inequalities but holds transformative potential if planning is reframed as participatory, justice-oriented, and equity-driven. Inclusive planning emerges as a key pathway towards achieving sustainable and socially just cities. Policy reforms should prioritise community representation, integrate gender-sensitive approaches, strengthen institutional accountability, and embed inclusivity benchmarks in urban planning frameworks.*

**Keywords:** *Social Inequalities, Urban Development, Inclusive Planning, Sustainable Cities, Nigeria*

### Introduction

Urbanisation is rapidly transforming societies worldwide, with Nigeria experiencing one of the fastest urban growth rates in Africa. Between 2010 and 2019, Nigerian cities recorded an annual growth of over 4 percent, significantly above the global average (UN-Habitat, 2018; Jiboye, 2011). While this trend presents economic opportunities, it has also intensified challenges such as inadequate housing, overstretched infrastructure, and the proliferation of informal settlements, where nearly 69 percent of Nigeria's urban population reside without access to basic services (UN-Habitat, 2018). These dynamics underscore the urgency of embedding inclusivity within planning processes to achieve sustainable urban futures.

Social inequalities, along lines of class, gender, and community, play a central role in shaping urban development patterns. Planning regimes often favour elites through exclusionary zoning and land allocation practices, thereby deepening spatial segregation (Olaniyan, 2022). Women and other marginalised groups face barriers in housing, mobility, and participation in decision-making,

limiting their access to urban benefits (African Cities Research Consortium, 2022). Informal communities, while offering proximity to economic opportunities, remain structurally excluded and vulnerable (Anierobi, Nwalusi, Efobi, Nwosu, Nwokolo, & Ibem, 2023). These dynamics stand in contrast to Sustainable Development Goal 11 (SDG 11), which advocates for inclusive, safe, resilient, and sustainable cities (United Nations, 2015).

Despite policies such as the National Urban Development Policy, social and spatial inequalities persist due to weak implementation, elite capture, and limited stakeholder engagement (Jegede et al., 2019; Easterly, 2009). The tension between rapid urbanisation and the goals of inclusive, sustainable development creates significant risks for social cohesion and long-term resilience in Nigerian cities.

This study therefore examines how class, gender, and community disparities shape urban growth, assesses the inclusivity of existing planning practices, and analyses policies that seek to promote sustainable development. The objectives are fourfold: (1) to examine how class, gender, and community disparities influence urban development; (2) to assess

the extent to which existing urban planning processes are inclusive; (3) to analyse policies and frameworks that promote inclusive planning for sustainable cities; and (4) to recommend strategies for integrating equity and inclusion into Nigerian urban development.

By foregrounding these issues, the study contributes to sociological debates on inequality and urbanisation, provides evidence-based insights for policymakers and urban planners, and amplifies the voices of marginalised communities in the pursuit of sustainable urban futures.

### **Social Inequalities**

Social inequalities are central to the understanding of urban development processes, as they shape how cities evolve and whose needs are prioritised. In most contexts, inequalities are structured along the intersecting axes of class, gender, and community identity. Class divisions significantly influence access to land, housing, and essential amenities. Affluent groups are typically able to secure residence in prime, serviced neighbourhoods, benefitting from reliable infrastructure and better-quality schools, healthcare, and transport facilities. In contrast, lower-income households are often relegated to marginal or peripheral areas, including informal settlements, where access to water, sanitation, and secure tenure is precarious (Lens, 2022). Such spatial divisions not only reproduce economic inequality but also deepen social exclusion by limiting upward mobility and reinforcing urban poverty cycles.

Gender inequalities intersect with class to further complicate patterns of access to the city. Women frequently encounter barriers in securing land ownership or tenancy rights due to cultural norms, discriminatory inheritance systems, and unequal income distribution (Chant & McIlwaine, 2016). Additionally, women's urban experiences are shaped by disproportionate care responsibilities and vulnerabilities linked to safety in public spaces. Limited access to affordable and safe transport, for example, constrains women's economic participation and mobility in Nigerian cities (Lamidi & Akinyemi, 2021). These structural disadvantages highlight the gendered nature of urban development, whereby planning frameworks that are not consciously inclusive risk reproducing male-centred priorities while silencing women's needs and contributions.

Community-level inequalities, including those based on ethnicity, religion, or migrant status, also influence access to urban opportunities. Migrants and minority ethnic groups may find themselves excluded from formal planning processes, denied political voice, or stigmatised in settlement upgrading schemes (Anierobi, Nwalusi, Efobi, Nwosu, Nwokolo, & Ibem, 2023). In contexts where patronage networks dominate urban governance, access to resources such as land allocations or government housing often depends on affiliation with

political elites or dominant social groups. Such practices exacerbate horizontal inequalities and undermine social cohesion by fostering resentment and marginalisation (Stewart, 2010).

Taken together, these forms of inequality generate differentiated experiences of the city. They determine who benefits from infrastructural investment, who is pushed into hazardous or underserved environments, and who has the political capital to influence planning decisions. As Lavell et al. (2023) argue, inequality not only undermines the fairness of urban growth but also compromises its sustainability, as excluded groups are denied the capacity to contribute to and benefit from development. In the Nigerian context, persistent inequality across class, gender, and community lines has contributed to spatial fragmentation, deepening the divide between elite enclaves and impoverished informal settlements. Addressing these inequalities is therefore critical if urban planning is to become a genuinely inclusive process that aligns with the objectives of Sustainable Development Goal 11 on sustainable cities and communities.

### **Urban Development in Nigeria**

Urban development in Nigeria is marked by rapid growth, infrastructural strain, and socio-spatial fragmentation. With an estimated urbanisation rate of over 4 percent annually, Nigerian cities such as Lagos, Abuja, and Port Harcourt are expanding at one of the fastest rates in the world (UN-Habitat, 2018). While urbanisation offers opportunities for economic growth, it has also produced significant challenges, including inadequate housing, traffic congestion, poor waste management, and overstretched infrastructure (Jiboye, 2011). 2024). The inability of formal planning systems to keep pace with population growth has created a widening gap between planned urban zones and unregulated informal settlements.

Historically, Nigerian urban planning has been influenced by colonial legacies, which emphasised spatial segregation and elite-centric development (Mabogunje, 2011). This legacy persists, with masterplans often prioritising central business districts, gated estates, and industrial corridors, while neglecting low-income neighbourhoods. Such disparities have entrenched socio-economic inequalities in cities, with wealthy groups enjoying reliable services and connectivity while poorer households endure overcrowded housing, poor sanitation, and insecure tenure (Agbola & Agunbiade, 2009). The uneven distribution of services not only reflects inequality but actively reproduces it, locking disadvantaged communities into cycles of poverty and exclusion.

### **Informal Settlements**

Informal settlements represent a defining feature of urban Nigeria, with estimates suggesting that up to 65 percent of Lagos residents live in slums or unplanned communities (World Bank, 2020). These settlements emerge as adaptive responses to the housing and affordability crisis, providing shelter and access to economic opportunities for low-income populations excluded from formal housing markets (Anierobi, Nwalusi, Efobi, Nwosu, Nwokolo, & Ibem, 2023). While informal settlements demonstrate resilience and social organisation, they also face chronic vulnerabilities: lack of basic services, exposure to flooding and pollution, and the constant threat of forced evictions by state authorities.

Policies towards informal settlements have often been adversarial, treating slums as nuisances to be demolished rather than communities to be integrated into the urban fabric. This has led to repeated cycles of eviction in areas such as Lagos' waterfront settlements, displacing thousands of residents without providing alternatives (Justice & Human Dignity, 2017). However, more inclusive approaches, such as participatory slum upgrading and incremental housing, recognise informal settlements as legitimate parts of the city that should be improved rather than eradicated (UN-Habitat, 2015). Such approaches not only improve living conditions but also foster social inclusion, strengthening the resilience of cities against poverty and environmental risks.

### **Inclusive Planning**

Inclusive planning refers to urban governance practices that actively involve diverse stakeholders, especially marginalised groups, in decision-making, while ensuring that urban resources and opportunities are equitably distributed. It goes beyond tokenistic consultation to empower citizens with meaningful influence over planning processes. Arnstein's (1969) seminal "ladder of citizen participation" highlights that genuine inclusion requires shifts in power dynamics, allowing marginalised groups not merely to be informed but to share control over decisions.

In the Nigerian context, urban planning has often been criticised for its top-down, technocratic nature, which favours elites and developers over ordinary residents (Agbola & Wahab, 2011). Participatory initiatives have been introduced, but many remain symbolic, lacking mechanisms to translate citizen input into enforceable policy (Eriksson, 2022). True inclusivity demands institutional reforms, such as transparent budgeting, legal protections for tenure security, and gender-sensitive planning that structurally embed equity into the governance system. Without such reforms, participation risks being reduced to consultation exercises with little impact on urban outcomes.

### **Sustainable Cities**

The concept of sustainable cities, central to Sustainable Development Goal 11, integrates economic viability, social inclusion, and environmental resilience. A sustainable city is one that provides equitable access to housing, transport, public services, and green spaces, while reducing carbon emissions and mitigating environmental risks (United Nations, 2015). In practice, however, the sustainability discourse often prioritises environmental and economic dimensions, with social justice and inclusion treated as secondary concerns. This imbalance risks creating "green cities for the wealthy," where sustainability benefits are concentrated in affluent areas, leaving disadvantaged groups behind (Lavell et al., 2023).

For Nigerian cities, sustainability cannot be achieved without addressing entrenched inequality and spatial injustice. Environmental risks such as flooding, air pollution, and poor waste management disproportionately affect informal settlements, where residents have the least capacity to adapt. Similarly, the absence of inclusive transport and affordable housing exacerbates inequality and undermines resilience. Achieving sustainable Nigerian cities therefore requires placing equity at the centre of policy, ensuring that environmental and infrastructural initiatives are explicitly designed to benefit all social groups, particularly the most vulnerable.

### **Policy and Governance Frameworks**

Policy and governance frameworks provide the institutional scaffolding through which urban planning is enacted. In Nigeria, zoning laws, land-use regulations, and fiscal allocations profoundly influence whose interests are served in urban development. However, these frameworks are often undermined by weak enforcement, bureaucratic inefficiency, and elite capture (Lens, 2022). For example, while masterplans may prescribe equitable land-use distribution, in practice, powerful developers and political elites often manipulate allocations to favour commercial and luxury developments, displacing low-income communities in the process (Mabogunje, 2011).

Effective governance requires mechanisms that enhance transparency, accountability, and inclusivity. Evidence shows that where policies promote secure tenure, community-based upgrading, and equitable service provision, cities make significant progress towards reducing inequality (UN-Habitat, 2018). Strengthening local governments' capacity, decentralising resources, and fostering partnerships between public agencies, private actors, and civil society are therefore critical to achieving inclusive and sustainable urban development. Governance reforms that redistribute both decision-making power and material resources remain central to closing the

gap between policy aspirations and lived urban realities.

### Methodology

This study employs a qualitative phenomenological design to capture the lived experiences of stakeholders involved in urban planning and inequality in Lagos. Phenomenology is well-suited for exploring meanings and perspectives as constructed by participants (Smith, Flowers & Larkin, 2009; Gill, 2020).

Lagos was selected as the study area because it exemplifies rapid urbanisation and socio-spatial inequality. With over 20 million residents, the city faces challenges of informal settlement growth, infrastructural strain and exclusionary planning, making it an ideal context for interrogating inclusive planning (UN-Habitat, 2018; Koko et al., 2021).

The study population comprised urban stakeholders. A purposive sample of 15 participants was drawn, including three each from urban planners, government officials, community leaders, NGOs and residents in informal settlements. This strategy ensured diversity of perspectives while maintaining depth. A sample of this size is adequate for phenomenological studies, where thematic saturation rather than statistical generalisation guides sampling (Guest, Bunce & Johnson, 2006; Malterud, Siersma & Guassora, 2016).

Data were collected through semi-structured interviews, which allow comparability across cases while leaving space for participants to elaborate on their experiences (Kallio et al., 2016). The interview guide covered perceptions of inequality in urban development, inclusivity in planning processes, and strategies for reform. Interviews were audio-recorded with consent, transcribed verbatim and supplemented with field notes.

Analysis followed Braun and Clarke's (2006) six-phase thematic approach: familiarisation with the data, coding, theme development, review, naming and reporting. Themes were generated inductively to reflect participants' lived experiences, but also informed by existing literature on inequality and inclusive planning. To strengthen trustworthiness, coding consistency was checked across transcripts and reflexive memos were maintained (Braun, Clarke & Hayfield, 2019).

Ethical considerations guided the study. Informed consent was obtained from all participants, who were assured of confidentiality and anonymity. Given the vulnerability of residents in informal settlements, pseudonyms were used and sensitive data were de-identified. The study followed BERA's (2018) ethical guidance, ensuring voluntary participation and safeguarding marginalised voices.

### Findings and analysis

#### Demographic Profile of Participants

Table 1

*Profile of Key Informants*

| Code Name | Stakeholder Group   | Gender | Age Range | Role/Position                                 | Years of Experience |
|-----------|---------------------|--------|-----------|-----------------------------------------------|---------------------|
| UBP1      | Urban Planner       | Male   | 45–54     | Senior Town Planner                           | 20+                 |
| UBP2      | Urban Planner       | Female | 35–44     | Physical Development Consultant               | 12                  |
| UBP3      | Urban Planner       | Male   | 25–34     | Junior Planner, Local Council                 | 5                   |
| GO4       | Government Official | Male   | 45–54     | Director, Urban Development                   | 18                  |
| GO5       | Government Official | Female | 35–44     | Senior Officer, Housing Policy                | 14                  |
| GO6       | Government Official | Male   | 55–64     | Permanent Secretary                           | 28                  |
| CL7       | Community Leader    | Male   | 55–64     | Chair, Informal Settlement Committee          | 25                  |
| CL8       | Community Leader    | Female | 45–54     | Women's Association Leader                    | 22                  |
| CL9       | Community Leader    | Male   | 35–44     | Youth Mobiliser, Slum Dwellers Federation     | 15                  |
| NGO10     | NGO Representative  | Female | 25–34     | Programme Officer, Housing Rights NGO         | 8                   |
| NGO11     | NGO Representative  | Male   | 35–44     | Director, Urban Inclusion Advocacy Network    | 13                  |
| NGO12     | NGO Representative  | Female | 45–54     | Policy Advisor, International Development NGO | 20                  |
| RIS13     | Resident (Informal) | Female | 25–34     | Trader, Makoko Settlement                     | 8                   |
| RIS14     | Resident (Informal) | Male   | 35–44     | Fisherman, Ijora Waterfront                   | 12                  |
| RIS15     | Resident (Informal) | Female | 45–54     | Seamstress, Ajegunle                          | 25                  |

### Findings based on Research Objectives

#### Theme 1: Social Inequalities Shaping Urban Development

Urban development is never a neutral process; it reflects and often reproduces existing social inequalities. In rapidly urbanising contexts such as Nigeria, disparities along class, gender, and community lines strongly influence who benefits from growth and who is excluded. Class-based

inequalities manifest in unequal access to land, housing, and infrastructure, where affluent groups dominate serviced neighbourhoods while poorer households are relegated to informal settlements with limited amenities (Rodríguez-Pose, & Storper, 2020). Gender further shapes these dynamics, as women

face barriers in mobility, tenure rights, and safety in public spaces, reinforcing their marginalisation within urban economies (Huedo, Florez-Perez, & Agost-Felip, 2021). Community-level inequalities, including those linked to ethnicity, migration status, or social networks, often determine whose voices are heard in planning processes and whose claims to the city are denied (Awoonor, 2025).

Such inequalities not only affect everyday access to opportunities but also influence the direction of

planning policies and infrastructural investments, frequently prioritising elite or politically connected groups. The result is fragmented urban growth marked by exclusion and vulnerability for marginalised populations. Understanding how social inequalities shape urban development is therefore critical to promoting inclusive planning and achieving the Sustainable Development Goal 11 of creating safe, inclusive, and sustainable cities.

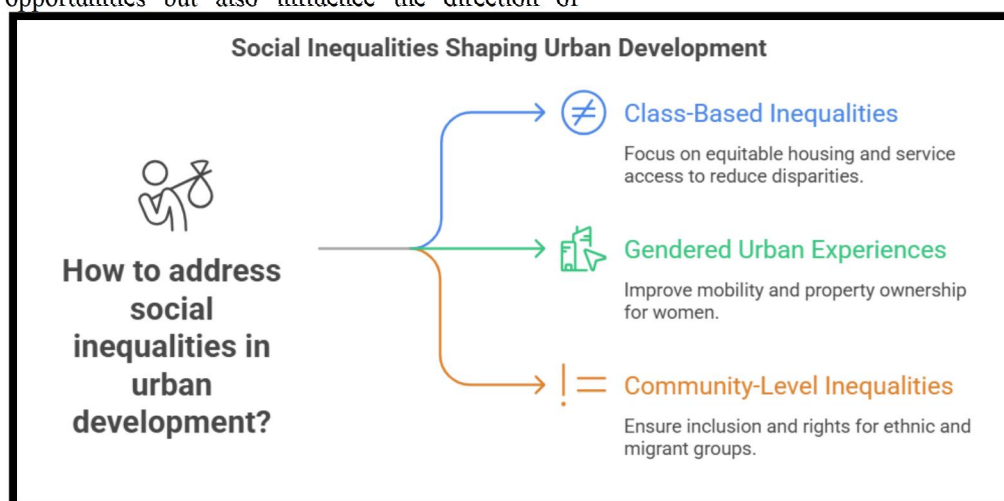


**Figure 1.** Social Inequalities Shaping Urban Development

### Class-Based Inequalities in Housing and Services

The findings reveal entrenched class disparities in access to land, housing, and services in Lagos. Urban planners and residents alike highlighted the elite capture of prime land allocations, with low-income households relegated to marginal spaces. As UBP1 explained, "prime land allocations in Lagos are almost always dominated by political elites or high-income groups. Lower-income families are rarely considered in master plans, except as afterthoughts." Residents of informal settlements echoed the displacement. RIS14 lamented: "We are always the ones relocated without alternatives; we survive in places with no water or electricity." This supports UN-Habitat (2022), which notes that forced evictions and lack of resettlement options exacerbate urban poverty in African cities.

These findings highlight Kipfer, Saberi, and Wieditz (2013) "right to the city" framework, illustrating how class inequalities determine who benefits from urban development. Elite control of resources undermines inclusive city-making, contradicting SDG 11's call for "inclusive, safe, resilient and sustainable cities."

### Gendered Urban Experiences

Women reported limited access to housing, mobility, and public spaces due to cultural norms and safety concerns. UBP2 stated: "*Women face huge mobility barriers, lack of safe, affordable transport means many cannot access economic opportunities in the city centre.*" Similarly, RIS13 observed: "*As a*

*woman I cannot claim land here without a man's support; landlords do not take us seriously.*"

These insights align with Chant and McIlwaine (2016), who demonstrate that urbanisation without gender-sensitive planning reproduces inequalities. The gendered dimensions of exclusion highlight the need for feminist approaches to urban planning, which challenge male-dominated structures and call for equitable access to space and services.

### Community-Level Inequalities

Community leaders stressed the exclusion of ethnic minorities and migrant groups. CL9 explained: "*Migrant groups are denied rights to settle; they are labelled illegal even after decades.*" This corresponds with Omoegun (2025) who documented the marginalisation of migrant communities in Lagos, often denied political voice or tenure rights.

The findings underscore how identity-based exclusion intersects with class and gender, producing multiple layers of inequality in urban development.

### Theme 2: Inclusivity in Urban Planning Processes

Urban planning processes are central to determining how resources, services, and opportunities are distributed across cities. However, in many developing contexts, including Nigeria, planning has often been characterised by exclusionary practices that privilege political and economic elites while marginalised communities remain overlooked

(Watson, 2014). Participation mechanisms, when present, are frequently tokenistic, providing limited avenues for meaningful community influence. This lack of inclusivity exacerbates spatial inequalities, leading to the proliferation of informal settlements, inadequate infrastructure, and poor service delivery. Inclusive planning, by contrast, ensures that diverse voices, particularly those of women, low-income groups, and ethnic minorities, are integrated into

decision-making, thereby fostering equity and accountability (Anierobi, Nwalusi, Efobi, Nwosu, Nwokolo, & Ibem, 2023). Globally, frameworks such as the Sustainable Development Goal 11 emphasise the importance of participatory governance in achieving sustainable cities. Embedding inclusivity in planning is therefore essential not only for social justice but also for building resilient, liveable urban futures.

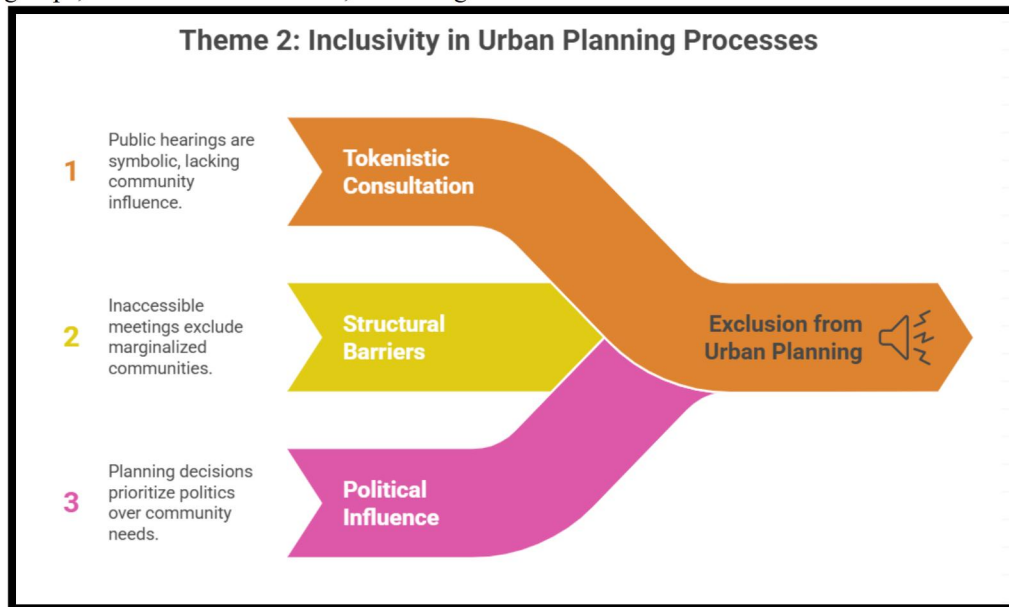


**Figure 2.** Inclusivity in Urban Planning Processes

### Exclusion from Planning

Across groups, participants described planning as tokenistic. GO5 admitted: *"Public hearings are often symbolic; communities have little real influence on the outcome."* Residents confirmed this, with RIS15 stating: *"We cannot attend because transport costs are high, and even when we do, we are ignored."* These findings mirror Watson (2014), who argues that African urban planning remains state-centred and exclusionary. Exclusion from planning perpetuates inequalities and undermines the participatory ideals enshrined in Nigeria's National Urban Development Policy (2012).

### Elite Capture of Decision-Making

Participants highlighted political dominance over planning. UBP3 noted: *"Planning decisions are heavily influenced by politics, not technical expertise."* This echoes Acey (2007), who found that political elites in Lagos exert disproportionate influence over land-use decisions, often to the detriment of poor residents. These findings reaffirm the argument that urban planning in Nigeria is not merely technical but deeply political.

### Theme 3: Policies and Frameworks for Inclusive Planning

Inclusive planning has emerged as a central approach in addressing the social and spatial inequalities

produced by rapid urbanisation. Policies and frameworks at both global and national levels emphasise participation, equity, and sustainability as guiding principles for urban growth. The United Nations' Sustainable Development Goal 11 explicitly calls for "inclusive, safe, resilient, and sustainable cities," providing a global benchmark for governments (UN-Habitat, 2022). In Nigeria, instruments such as the National Urban Development Policy and Lagos State Urban Renewal programmes have sought to embed inclusivity, though implementation remains uneven and often undermined by political interference (Anierobi, et.,al, 2023). Effective frameworks require more than policy declarations; they depend on mechanisms that ensure marginalised voices are represented in decision-making and that equity indicators are systematically monitored. Thus, the study of policies and frameworks for inclusive planning is essential to evaluating whether urban governance can move beyond rhetoric towards truly sustainable and equitable city development.

### Existing Policies and Gaps

Although Lagos has frameworks such as the Lagos Urban Renewal Policy, participants expressed doubts about their effectiveness. NGO11 explained: *"We have progressive housing policies on paper, but implementation is weak and inconsistent."*

This finding resonates with Acey (2007), who found that weak institutional capacity limits policy effectiveness in Nigerian cities. NGO12 further noted: *“Current frameworks pay lip service to inclusivity, but the SDG 11 mandate is not truly integrated into practice.”* Policy frameworks exist, but weak implementation and poor alignment with global agendas limit their transformative potential.

#### **Theme 4: Strategies for Inclusive and Sustainable Urban Development**

The pursuit of inclusive and sustainable urban development has become central to global and national policy agendas, particularly under the Sustainable Development Goal 11 which advocates for cities that are “inclusive, safe, resilient, and sustainable.” In contexts such as Nigeria, where rapid urbanisation is accompanied by deepening inequality, the formulation of strategies that prioritise equity is vital. Inclusive planning requires the active participation of diverse stakeholders, including marginalised communities, women, and informal settlement residents, ensuring that their needs and aspirations shape urban outcomes (Mitlin & Bartlett, 2018). Pro-poor housing schemes, gender-responsive infrastructure, and participatory governance mechanisms are recognised as effective approaches for redressing exclusion (Pieterse, 2018; UN-Habitat, 2022). Beyond participation, institutional reforms that reduce elite dominance and strengthen accountability structures are necessary for sustainable implementation. Ultimately, strategies for inclusive urban development must balance social justice with environmental and economic sustainability, enabling cities like Lagos to grow equitably while safeguarding resilience for future generations.





**Figure 3.** Strategies for Inclusive and Sustainable Urban Development

### Community Participation and Empowerment

Community leaders and residents emphasised grassroots involvement. CL8 stated: *“Planning must begin with us, not after decisions have been taken. We know the real issues.”* Similarly, RIS13 remarked: *“If government came to sit with us, solutions would be better for everyone.”* This echoes Mitlin and Bartlett (2018), who argue that genuine community participation is essential for inclusive urban transformation.

### Institutional Reforms

Stakeholders called for institutional reforms to address gender and equity concerns. UBP2 proposed: *“Gender mainstreaming must be built into planning frameworks, not as an afterthought.”* NGO11 added: *“Inclusive planning requires mechanisms to monitor government promises.”* These perspectives support the argument of Pieterse (2018) that participatory governance and institutional reforms are crucial for equitable urban futures in Africa.

### Conclusion

The findings of this study underscore the profound influence of social inequalities, particularly those based on class, gender, and community, on patterns of urban development in Lagos. While policies and frameworks for urban renewal exist, their weak implementation, coupled with elite capture of planning processes, perpetuates exclusion and marginalisation. The persistence of tokenistic participation highlights a structural gap between policy rhetoric and lived urban realities. Yet, opportunities exist for inclusive and sustainable transformation if urban governance adopts equity-driven and participatory approaches.

### Recommendations

1. Strengthen Inclusive and Participatory Planning: Establish community forums and neighbourhood councils that feed directly into metropolitan planning boards, ensuring residents of informal settlements have genuine representation. Translate planning documents into local languages and hold consultations at accessible times and venues to remove structural barriers to participation.
2. Promote Gender-Responsive Urban Development: Mainstream gender-sensitive approaches into all planning processes, including safety audits of public spaces, gender quotas in planning committees, and allocation of land/housing to women. Improve women’s mobility by expanding safe and affordable public transport networks, especially linking informal settlements to city centres.
3. Enhance Policy Implementation and Accountability: Strengthen institutional capacity for monitoring and evaluating urban development projects, with independent oversight bodies to track inclusivity and sustainability indicators. Align local policies with the SDG 11 mandate by developing measurable benchmarks for inclusivity and sustainable development in Lagos.

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## Sociological Marketing Factors and Consumer Buying Behaviour of Departmental Stores in South-South, Nigeria

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### **Abstract**

*This study focused on sociological marketing factors and consumer buying behaviour of Departmental Stores in South-South, Nigeria. The specific objectives were to; determine the effect of social product, Social price and social promotion on consumer buying behaviour of Departmental Stores in South-South Nigeria. Several literatures were reviewed and cited in this study for better understanding. This study adopted cross sectional survey research design method: The data collected from the respondents through the use of closed ended questionnaire were presented and analyzed using simple descriptive statistics such as frequency distribution tables, percentages and arithmetic mean score. The mean cut-off point of 2.50 bench mark was adopted to determine acceptance and rejection of each item in the questionnaire. The hypotheses were tested with t-test statistical techniques. The findings revealed that, there is a significance relationship between sociological marketing factors and consumer buying behaviour of Department stores in South-South, Nigeria. It was concluded that to compete in the highly competitive business environment, managers of Departmental Stores need to concentrate their e-marketing approach by enhancing customer's trust to stimulate the buying behaviour of customers. The study recommended that, it is pertinent for managers to understand changing consumer needs, wants, and motivations and thereby devise the most appropriate mix for his market. Then, to the marketer the dynamic nature of consumer behavior implies rapid product development, changing communications, and distribution strategies in order to be more effective. While some outcomes may be significant to marketing practice the overall goal of such research endeavor is to achieve better understanding of consumer behaviour*

**Key Words:** Sociological Marketing, Consumer Buying Behaviour, Social Product, Social Price, Social Promotion and Departmental Stores

### **Introduction**

The Nigerian retail industry has developed significantly over the years, changing gradually from traditional to more modern systems; such that from buying and selling at open air markets in both urban and rural areas, Nigerians are increasingly patronizing convenience stores, supermarkets and online shops (Philips Consulting Limited, 2024). Since the introduction of the concept of social class into the marketing literature, it has been an interesting aspect of study for marketing scholars and practitioners (Mihic & Culina, 2022). The decision consumers make with respect to acquisition of products is of special interest, especially as it relates to the social class category to which a person belongs. It is very important to note that social class as a context is rooted both in an individual's substance of social life such as wealth, education, work and also individuals'

material resources as well as perceptions of rank in relation to others in society, with a proportionate influence on behaviour (Kraus, Piff, & Mendoza-Denton, 2022).

Sociological marketing cannot be successful if it ends when it develops a product that has the right target audience and with the notion of selling at the appropriate price (Global Research Society, 2021). The products must be distributed to the right place where the target audience can locate them with ease through the right channel and at the appropriate time. Social place is critical since it impacts the organization's sales turnover and profit margins. An organization can lose its competitive advantage and customers due to delayed delivery. The effectiveness of an organization depends greatly on the management of its distribution strategy effectiveness to move its final products to the final

users because a product, no matter how good it may be if it did not leave the factory, is of no benefit to both the producer and the consumers. For this reason, the adoption of supply chain management to cut costs, increase market share and sales, and establish solid customer relations are increasing rapidly (Ferguson, 2020).

The core purpose of this study is to study the impact of different sociological marketing factors on consumer buying behaviour. Hence, the Research on sociological marketing factors is certainly vital to recognize the most influencing tools to compete with its competitors. The purpose of research is to study closely the fondness of customers on a variety of sociological marketing factors. With the help of this information, the marketer and retailers could well plan their resources to get the highest profit. This research aims to examine the partiality of consumer on different sociological marketing factors, marketers and retailers will be able to be conscious of the consumer buying behaviour, so that they can make use of the right and the most successful sociological marketing factors to catch the attention of the customer.

### **Statement of the Problem**

During the previous few decades, doing business has been highly competitive globally including departmental stores in Nigeria; the customers have a great deal of diverse selections and options to decide on. Customers play an important role as they are the ones who are directly involved in the final buying of products or services. Majority of customers today are more informed, more knowledgeable, more demanding, more perceptive than ever before. In Nigerian retail sector, for example, companies thus have forced to find their consumer's needs and wants by learning and understanding their consumer behaviour in order to make them buy so as to earn revenue and to survive in the market. As a result, the understanding of consumer behaviour is vital to succeed in the business. The better the company understands the consumer's behaviour, the more sales it can generate. In contrast, vague understanding of consumer habit makes the company hardly compete with other rivals and this occurrence might force company to withdraw from the market.

The consumer buying process reveals a series of stages that individuals undergo as they make purchase decisions. From the very first stage of identifying a problem i.e. an existing need, to the point of evaluating alternatives, psychological influences are evident; however, the stage where customers initiate a purchase action captures the consumer's actual behaviour, which is definitely a function of the preceding phases. Consumer's behaviour which involves how they acquire products reveals very striking differences with respect to shopping styles and purchase patterns

existing among different consumer categories. The existence of sociological marketing factors raises issues as to whether all consumers shop alike in reality. In actual fact, different shopping styles exist; and consumer decision making is not only concerned about product and brand features but also on other criteria such as choice of departmental outlets in South-South Nigeria.

The truism of this opinion is what this study is set out to investigate. It is therefore, based on this premise that this study seeks to investigate critically into sociological marketing factors and consumer buying behaviour of departmental stores in South-South Nigeria. Specifically, with the existence of different shopping options available to the present Nigerian consumers such as online shopping, instore shopping (departmental stores, multiple chain stores, convenience stores), open-air markets, roadside kiosks and shops; this study seeks to critically examine the various shopping styles, organizations and patterns among different consumer categories in a bid to discover the influence of sociological peculiarities on their choices

### **Objectives of the Study**

The focus of this study is to examine the effect of sociological marketing factors on consumer buying behaviour of departmental stores in South-South Nigeria. The specific objectives are to:

- i. determine the effect of social product on consumer buying behaviour of departmental stores in South-South Nigeria
- i. evaluate the impact of social price on consumer buying behaviour of departmental stores in South-South Nigeria
- ii. examine the effect of social promotion on consumer buying behaviour of departmental stores in South-South Nigeria

### **Review of Related Literature**

#### **Social Marketing Factors**

The societal marketing concept emerged in the 1970s and has since overlapped with the marketing philosophy. The concept assumes that there is a conflict between consumer short-term wants and society's long-run interest and that organizations should focus on a practice that ensures long run consumer and societal welfare. Kotler and Armstrong (2010) consider the societal marketing orientation to be the best business philosophy for organizations. They said that community marketing: "represents a new concept and an attempt to align business goals with sometimes conflicting goals of society". They conclude: the organization's task is to determine the needs, wants and interest of target markets and to deliver the desired satisfactions more effectively and efficiently than

competitors in a way that preserves or enhances the consumer's and society's well-being". It is understandable why this concept did not emerge until around the 1970s.

The appropriateness of societal marketing philosophy is deduced from the fact that it supports the socially responsible behaviour of the organization. It thus challenges the earlier assertion that "the social responsibility of business is to make a profit". Organizations will still need to adopt this business philosophy to be able to deal with the cultural and regulatory aspects of the business environment. This means adoption of the societal marketing philosophy generates some factors of market orientation that foster business performance. The societal marketing concept is considered a separate business philosophy; however, the concept could be better looked at as complimentary. It should be complementary business thinking to the adoption of other business philosophies, particularly, the marketing philosophy (Andrianova & Yeletskikh, 2022). Thus, whether a business is production, product, selling, or marketing oriented, the interest of the society must still be given its rightful place because society is a key stakeholder in every business. Multiple studies have found that social marketing approaches can effectively change social norms and behaviour.

### **Social Product**

It is essential to have a clear description of the product in a social marketing campaign, at the core, actual, and augmented levels. A core product comprises the benefits that the target audience will experience or expect in exchange for performing the targeted behaviour, or that will be highlighted in a social marketing campaign (e.g., healthier life and the reduction in the risk of becoming obese or overweight). An actual product is the desired behaviour, often embodied by its major features and described in specific terms (such as healthy foods or beverages available at vending machines). An augmented product refers to any additional tangible objects and/or services that will be included in the offer and promoted to the target market. An augmented product helps perform the targeted behaviour or increase its appeal (e.g., information on healthy products available in vending machines) (Gordon, 2022). The most important aspect of the marketing mix is the offer or the product. Social marketers seek to influence the behaviour (actual product) of a specific priority population or target audience by offering them a bundle of benefits (core product) while minimizing associated costs-the personal or monetary things that must be exchanged or given up in pursuit of the desired behaviour. It is critical to understand the consumer's wants, desires, aspirations, and needs and not merely their behaviours, attitudes, and knowledge (SheauTing, Mohammed &

Weng-Wai, 2023). To have a viable product, people must first perceive that they have a genuine problem and that the product offering is a good solution for that problem. The role of research here is to discover the consumers' perceptions of the problem and the product and to determine how important they feel it is to take action against the problem.

### **Social Price**

Social price sums up the costs that the target audience will "pay" for adopting the desired behaviour that leads to the promised benefits. These costs could be monetary in the real sense, such as those for tangible goods and services. Most of the time, however, social marketers sell behaviours that require something else in exchange: time, effort, energy, psychological costs, and/or physical discomfort. A sensible price strategy is aimed at minimizing these costs by maximizing incentives (monetary and nonmonetary alike) to reward desired behaviours (again, monetary or nonmonetary) or to discourage competing, undesirable behaviours (Hamza, 2024).

Social Price refers to what the consumer must do to obtain the social marketing product. This cost may be monetary, or it may instead require the consumer to give up intangibles, such as time or effort, or to risk embarrassment and disapproval (Kotler et al., 20216). If the costs outweigh the benefits for an individual, the perceived value of the offering will be low and it will be unlikely to be adopted. However, if the benefits are perceived as greater than their costs, the chances of trial and adoption of the product are much greater. The price in social marketing campaigns usually involves inconvenience, risk, or lifestyle changes. To make the change more desirable, it is important to minimize the price that the target audience expects to pay. In a campaign to promote better nutrition, the price might be the expectation that the adopter must give up his favorite foods. Minimizing this price by teaching moderation rather than complete abstinence decreases the price and increases the chances of participation in change. Social marketers must balance these considerations, and often end up charging at least a nominal fee to increase perceptions of quality and to confer a sense of dignity to the transaction. These perceptions of costs and benefits can be determined through research and used in positioning the product (Menegaki, 2022).

### **Social Promotion**

Social promotion consists of the integrated use of advertising, public relations, promotions, media advocacy, personal selling, and entertainment vehicles. The focus is on creating and sustaining demand for the product. Research is crucial to determine the most effective and efficient vehicles to reach the target

audience and increase demand. The primary research findings themselves can also be used to gain publicity for the program at media events and in news stories (Sheau-Ting et al., 2023). Information on product benefits and features, fair price, and easy accessibility need effective and efficient communications to bring to the target audience and inspire action. A promotion strategy is needed to maximize the success of the communications. The development of these communications is a process that begins with the determination of key messages, continues with the selection of messengers and communication formats and channels, moves on to the creation of communication elements, and ends up with the implementation of those communications. The determination of key messages needs to be aligned with marketing objectives because they determine what a social marketing campaign wants its target audience to know, to believe, and to do. Information on barriers, benefits, competitors, and influencers will help shape message choices. Messengers are those who deliver the messages. Credibility, expertise, and likability are some key considerations for selecting messengers. Messages are delivered through various communication channels (including media channels), such as advertising (including PSA), public relations, events, sponsorships, and personal selling, and word of mouth. As far as media channels are concerned, they can be online or offline, or both. Online media range from an e-mail, Web sites, and “smart” mobile phones to blogs, podcasts, and tweets, but by no means are limited to these options. Offline media include newspapers, magazines, radio, and television, as well as direct mail, billboards, transit (e.g., buses, taxis, and subways), and kiosks (Kotler et al., 2016). Because different communication channels have different characteristics, it could be more effective and efficient to have a good idea of the media budget and media options that a social marketing campaign could have before communication elements are created. Creative elements translate the content of intended, desired messages into specific communication elements, which include copy, graphic images, and typeface for traditional print media, and interactive features and audio and/or video streams for online media (Gordon, 2022).

### **Consumer Buying Behaviour**

Consumer buying behaviour is the study of individuals and organizations and how they select and use products and services. It is mainly concerned with psychology, motivations, and behaviour. The study of consumer behaviour includes: how consumers think and feel about different alternatives (brands, products, services, and retailers), how consumers reason and select between different alternatives, the behaviour of

consumers while researching and shopping, how consumer behaviour is influenced by their environment (peers, culture, media), and how marketing campaigns can be adapted and improved to more effectively influence the consumer (Mothersbaugh & Hawkins, 2021). Consumer buying behaviour is the study of consumption. It aims to have a better understanding of consumer actions and processes used in their purchase decisions, as well as the usage of products and services and how they are disposed of. Exploring how the consumer's emotions, attitudes, and preferences affect buying behaviour, consumer behaviour draws upon ideas from several fields including psychology, sociology, anthropology, biology, marketing, and economics. Consumer behaviour plays an important role in marketing management. It provides information to the marketer based on which the marketer can design its marketing mix strategies and modify them in the future as per the situation. For the marketer, it is important to know how consumers will react to the marketing program to serve them effectively (Kotler & Armstrong, 2018). Modern marketing philosophies include identifying consumers' needs and satisfying them more effectively than the competitors. Thus modern marketing needs to understand consumer behaviour. The key to the company's survival, profitability, and growth in a highly competitive marketing environment is its ability to identify and satisfy consumers' unfulfilled needs better and sooner than the competitors. Thus, consumer behaviour helps in achieving marketing goals (Kim & Tang, 2020).

### **Theoretical Framework**

This study is anchored on theory of reasoned action. The theory of reasoned action might have explained the influence of socio-economic factors on consumer behavior towards buying goods, a few other theories have taken a different perspective and opinion about different factors that could influence consumer behavior at a given period. The theory of buyer behavior according to Engel Kellet Blackwell believed that consumers' decisions to buy goods are based on some processes that work in four phases. The four phases according to the theory are the input, the processing information, decision stage and the variables stage. The theory argues that consumer behavior is influenced by the frequent marketing promotions that catch the consumer's attention at a given time such as online advertisements, billboards advertisement among others. Abraham Maslow's hierarchy of needs through motivation-need theory opined that consumers' behavior is fashioned after the need to satisfy and fulfil certain prioritized needs in their lives. The theory believes that an individual consumer will want to fulfil its physiological needs, ensuring more safety, love, esteem and the self-

actualization needs. In explaining the influence of socio-economic factors on consumer behavior toward purchasing products at a given period, the theory of reasoned action is relevant in these ways. The theory is helpful in explaining the processes that ensued when a consumer is faced with a challenge of making decision about a product. The theory also unveils the possibility of rationalization consumers pass through in their decision making producers, manufacturers, and marketers can always apply the theory in knowing the quantity of goods to be produced or promoted at a given time and the category of people.

### **Empirical Review**

Imouokhome (2025), examined distribution strategies and consumer satisfaction in manufacturing firms; A Study of Unilorin Bakery. The study's objective is to determine the effect of selective distribution on customer satisfaction among students towards the University of Ilorin Bakery. The study used a survey research design. The study covered the students of the University of Ilorin, Ilorin, Kwara State; the population for the study was 49,153. Taro Yamane's method of determining sample size was used to arrive at 396 sample size. Simple linear regression was used in testing the hypotheses at a 0.05 significant level. The study's results show that selective distribution has a significant impact on customer satisfaction among students towards the University of Ilorin Bakery, with a significant level of 0.001, which is less than 0.05 alpha values. The study concluded that distribution strategies have a significant effect on customer satisfaction among students towards Unilorin Bakery. Therefore, the study recommended that Unilorin Bakery concentrate its efforts on brand promotion through a selective distribution strategy since it allows customers to make more informed purchasing decisions that can result in higher satisfaction with their choices and ultimately bring about customer satisfaction.

Suraj (2025), offered insights to both researchers and policymakers to address major societal issues through the lens of social marketing and consumer behavior research from the Web of Science relevant empirical evidence that may aid in planning interventions in the future. The publication, leveraging bibliometric analysis using R-Biblioshiny, examines research design parameters, techniques to gather data, means of analysis, visualization, and interpretation frameworks. Using Bradford and Lotka's laws as well as intellectual, social, and conceptual structure analyses, the study illustrates the significance of the previous literature in sharing impactful research. Results suggest that social marketing and consumer behavior research, which was originally developed in the USA, has gained traction internationally through increasing levels of collaboration and citation activity. Features covering

wellness, ecology, accident prevention, and community development show how the industry has the potential to address some important issues for society. This study identifies leading authors, publications, and gaps in the literature providing a roadmap for academics and practitioners alike on the direction of future research and policies, thus enhancing the understanding and use of social marketing and consumer behaviour.

Nwokinaka and Ofori (2024), examined the relationship between selective distribution strategy and customer satisfaction of soft drinks distributors in Rivers State. The objectives of the study were to determine the extent to which selective distribution strategy relate with customer satisfaction of soft drinks distributors in Rivers State. The study adopted cross-sectional research design. The population of the study was twenty (20) soft drink distributors in Rivers State as obtained from Nigeria Directory (2023). The researcher adopted a census study because of the small size of the study population, hence, there was no need for sampling. However, 3 managers were drawn from each of the twenty (20) soft drink distributors that constituted the study population. In all, sixty (60) managers constituted the respondents for the study. Data were collected through semi-structured questionnaire that was designed in the Likert 5-point scale of very low extent to very high extent. Data were analyzed using descriptive statistics of mean, standard deviation frequency distribution, and bar chart. Inferential statistics of Pearson Product Moment Correlation (PPMC) was used to test the six hypotheses. Similarly, multiple regression analysis was used in testing the combined effect of all dimensions on each measure of criterion variable and aided with the aid of the Statistical Package for Social Sciences (SPSS version 23.0). From the data analysis, it was revealed that, a selective distribution strategy has positive and significantly relationship with customer satisfaction of soft drink distributors in Rivers State. Based on these findings, the study concluded that there is a significant and positive relationship between selective distribution strategy and customer satisfaction. This result corroborated the findings of previous studies. Therefore, recommend that soft drinks distributors in Rivers State should stay tuned to selective distribution strategy in order to embrace cost efficient and high the levels of satisfaction.

### **Methodology**

The study adopted a cross sectional research approach to establish effect of sociological marketing factors on consumer buying behaviour among departmental stores in South-South, Nigeria. The population of the study cut across selected Departmental Stores operating across various cities in South-South Nigeria. It encompassed a broad spectrum of SMEs, spanning



diverse industries, including retail, services, and manufacturing. From the population of one hundred and twenty seven (127) members and a workable sample of ninety six (96) members is derived using the sample size determination formula cited in Taro Yamani's book (1993). The adoption of stratified random sampling technique involved the selected departmental stores with relevant experience and insights into the impact of sociological marketing factors on consumer buying behaviour. The data using a five point Likert Scaled questionnaire closed ended was preferred because it had a high response rate and only be required to be distributed to respondents to

complete and thus requires less time to be administered, offers the possibility of anonymity and data collected is first hand. To test the quality of the research instrument test-retest system was utilized with a coefficient above 0.7. The data collected from the respondents was presented and analyzed using simple descriptive statistics such as frequency distribution tables, percentages and arithmetic mean score. The mean cut-off point of 2.50 bench mark was adopted to determine acceptance and rejection of each item in the questionnaire. The hypotheses were tested with t-test statistical techniques.

## Results and Discussion

### Analysis of Respondents Profile

**Table 1: Demographic Characteristics of the Respondents as (N=75)**

| S/N | Options                   | Variable      | Frequency | Percentage (%) |
|-----|---------------------------|---------------|-----------|----------------|
| 1   | Gender                    | Male          | 41        | 58.6           |
|     |                           | Female        | 34        | 41.4           |
|     |                           |               | <b>75</b> | <b>100</b>     |
| 2   | Age                       | 20-30         | 23        | 32.8           |
|     |                           | 31-40         | 39        | 48.5           |
|     |                           | 41 and above  | 13        | 18.5           |
|     |                           |               | <b>75</b> | <b>100</b>     |
| 3   | Marital Status            | Single        | 33        | 40             |
|     |                           | Married       | 42        | 60             |
|     |                           |               | <b>75</b> | <b>100</b>     |
| 4   | Educational Qualification | WAEC/NECO/GCE | 9         | 12.9           |
|     |                           | OND           | 28        | 40             |
|     |                           | HND/B.Sc.     | 21        | 22.8           |
|     |                           | M.Sc./MBA     | 10        | 14.2           |
|     |                           | Others        | 7         | 10             |
|     |                           |               | <b>75</b> | <b>100</b>     |

**Source:** Analysis of field survey, 2025.

From table 1, the gender distribution of respondents indicated that 58.6% (41) of the respondents were male while 41.4% (29) were female. The male respondents are therefore more represented in the sample. From the table above, showing the age distribution of respondents, it was observed that 32.8(23) of respondents were within 20-30 years, 48.5(34) were between 31-40 years and 18.5%(13) respondents were above 41 years. Thus, age bracket of less than 31-40 years are more represented in the sample. From the

table above showed the marital status of respondents. A total 40%(28) respondents were single, while 60%(42) respondents were married. From the table above showing the educational qualification of the respondents, it was observed that 12.9%(9) respondents have had WAEC/NECO/GCE qualifications, 40%(28) respondents has OND qualifications, 22.8%(16) respondents has HND/B.Sc. qualifications, 14.2%(10) respondents has M.Sc./M,BA qualifications, and 10%(7) respondents had other qualifications

### Analyses of Research Data

**Table 2: Social Product and Consumer Buying Behaviour**

*Mean (x) and Standard Deviation Responses to Social Product*

| S/No. | Item                                                                       | Mean (x) — | SD   | Remark   |
|-------|----------------------------------------------------------------------------|------------|------|----------|
| 1     | The Products and Services Offered meets the various needs of the customers | 3.04       | 1.10 | Accepted |
| 2     | The benefits offered by the company matches customers' desires             | 2.81       | 0.87 | Accepted |

|                                       |                                                                        |      |      |          |
|---------------------------------------|------------------------------------------------------------------------|------|------|----------|
| 3                                     | The company delivers the articulated value as promoted                 | 3.80 | 0.52 | Accepted |
| 4                                     | We delivered promises consider the customer experiences                | 3.77 | 0.53 | Accepted |
| 5                                     | The company communication makes customers aware about the new products | 3.68 | 0.71 | Accepted |
| Grand Mean (x) and Standard Deviation |                                                                        | 3.42 | 0.74 | Accepted |

Source: Field Work 2025.

From Table 2, all the items have means (x) between 2.81 to 3.80 and a Standard Deviation of within 0.52 to 1.10. They were accepted because their means (x) were above the bench mark value of 2.50. Based on the result in Table 4.2, the grand means (x) response

regarding in which social product and consumer buying beahviour of selected departmental stores in South-South Nigeria is 3.42 with a Standard Deviation of 0.74. From the analysis, it was shown that the majority of the respondents agreed to items social product.

**Table 3: Social Price and Consumer Buying Behaviour**  
**Mean (x) and Standard Deviation on the Responses to social price**

| S/No.                                 | Item                                                                                        | Mean (x) | SD   | Remark   |
|---------------------------------------|---------------------------------------------------------------------------------------------|----------|------|----------|
| 6                                     | Customers Compare the Prices in Several Stores before Purchasing a Product in the Mall      | 3.57     | 0.79 | Accepted |
| 7                                     | Customers expect seasonal discounts as part of the annual retail calendar                   | 3.52     | 0.82 | Accepted |
| 8                                     | Retailers use a seasonal discount to lure customers to buy their products/ services         | 3.35     | 0.96 | Accepted |
| 9                                     | High price discount shows consumers that they are receiving low-quality products or service | 3.32     | 0.99 | Accepted |
| 10                                    | When consumers see a discount, they worry about the product they want to buy                | 3.04     | 1.10 | Accepted |
| Grand Mean (x) and Standard Deviation |                                                                                             | 3.36     | 0.93 | Accepted |

Source: Field Work 2025.

From Table 3, all the items have means (x) between 3.04 to 3.57 and a Standard deviation between 0.79 to 1.10. They were accepted because their means (x) were above the bench mark value of 2.50. Based on the result in Table 4.3, the grand means (x) response

regarding on social price influence consumer buying behaviour is 3.36 with a Standard Deviation of 0.93. From the analysis, it was shown that all the respondents agreed to the items on social price and consumer buying behaviour.

**Table 4: Social Promotion and Consumer Buying Behaviour**  
**Mean (x) and Standard Deviation on the Responses to Social Promotion**

| S/No.                                 | Item                                                                                                    | Mean (x) | SD   | Remark   |
|---------------------------------------|---------------------------------------------------------------------------------------------------------|----------|------|----------|
| 16                                    | Customers prefer promotional offerings that could be converted into monetary terms compared to freebies | 3.66     | 0.61 | Accepted |
| 17                                    | Sales promotion influences the purchase decision of consumers                                           | 3.81     | 0.39 | Accepted |
| 18                                    | Promotional discounts may lead to increased traffic, but lower sales per transaction                    | 3.48     | 0.79 | Accepted |
| 19                                    | Consumers are more likely making purchase if I know that there is Buy and get one free+                 | 3.56     | 0.80 | Accepted |
| 20                                    | Consumers are willing to switch brands if under the crown prize is offered by the competing brands.     | 3.65     | 0.70 | Accepted |
| Grand Mean (x) and Standard Deviation |                                                                                                         | 3.63     | 0.65 | Accepted |

Source: Field Work 2025.

From Table 4, all the items have means (x) between 3.48 to 3.81 and a Standard Deviation between 0.39 to 0.80. They were accepted because their means (x) were above the bench mark value 2.50. Based on the result in Table 4.5, the grand mean (x) response regarding the

How social promotion stimulates the consumer buying behaviour of consumers. Thus, 3.63 with a Standard Deviation of 0.65. From the analysis, it showed that most of the respondent agreed that social promotion stimulates the consumer buying behaviour.

## Testing of Hypotheses

### Hypotheses One

Ho<sub>1</sub>: social product has no significant effect on consumer buying behaviour of departmental stores in South-South, Nigeria

Table 5: T-test Table Showing Significant effect between Social product and Consumer Buying Behaviour of Departmental Stores in South-South, Nigeria

| Items          | N  | Mean (x) | SD   | DF | t <sub>cal</sub> | t <sub>crit</sub> | Level of significance | Decision |
|----------------|----|----------|------|----|------------------|-------------------|-----------------------|----------|
| Social Product | 53 | 3.80     | 1.10 | 73 | 0.53             | 2.013             | 0.05                  | Accepted |
|                | 22 | 2.81     | 0.52 |    |                  |                   |                       |          |

Table 7, t<sub>cal</sub> (0.53) less than t<sub>crit</sub> (2.013) at degree of freedom 73 and 0.05 level of significance. Therefore, the null hypothesis is rejected. This means that there is a significance relationship between social product and on consumer buying behaviour of departmental stores in South-South, Nigeria

Ho<sub>2</sub>: social price has no significant effect on consumer buying behaviour of departmental stores in South-South, Nigeria.

Table 6: T-test Table Showing significant effect between social price and consumer buying behaviour of departmental stores in South-South, Nigeria

| Hypothesis Two |    |          |      |    |                  |                   |                       |          |
|----------------|----|----------|------|----|------------------|-------------------|-----------------------|----------|
| Items          | N  | Mean (x) | SD   | DF | t <sub>cal</sub> | t <sub>crit</sub> | Level of significance | Decision |
| Social Price   | 53 | 3.57     | 1.10 | 73 | 0.058            | 2.013             | 0.05                  | Accepted |
|                | 22 | 3.04     | 0.79 |    |                  |                   |                       |          |

Table 6, shows t<sub>cal</sub> (0.058) is less than t<sub>crit</sub> (2.013) at degree of freedom 73 and 0.05 level of significance. This means that the null hypothesis is rejected meaning that there is a significance relationship between social price and on consumer buying behaviour of departmental stores in South-South, Nigeria

Ho<sub>3</sub>: social promotion has no significant effect on consumer buying behaviour of departmental stores in South-South, Nigeria..

Table 7: T-test Table Showing Significant effect between Social Promotion and Consumer Buying Behaviour of Departmental Stores in South-South, Nigeria

| Hypotheses Three |    |          |      |    |                  |                   |                       |          |
|------------------|----|----------|------|----|------------------|-------------------|-----------------------|----------|
| Items            | N  | Mean (x) | SD   | DF | t <sub>cal</sub> | t <sub>crit</sub> | Level of significance | Decision |
| Social Promotion | 53 | 3.81     | 0.80 | 73 | 0.52             | 2.013             | 0.05                  | Accepted |
|                  | 22 | 3.48     | 0.39 |    |                  |                   |                       |          |

Table 8, t<sub>cal</sub> (0.52) less than t<sub>crit</sub> (2.013) at degree of freedom 73 and 0.05 level of significance. Therefore, the null hypothesis is rejected. This means that there is a significant relationship between social promotion and on consumer buying behaviour of departmental stores in South-South, Nigeria

on the relevance of the marketing and societal marketing philosophies to contemporary practices, asserting that modern marketing prioritizes consumer needs and long-term societal welfare.

## Discussion of Findings

### Social Product and Customer Buying Behaviour ‘

The finding in Research question 1 shows that majority of the respondents agreed that social product increase customer buying behaviour of selected departmental stores in South-South Nigeria. This is supported by Rotimi (2024), examined the link between consumer behavior and modern marketing by analyzing the evolution of marketing philosophies, including production, product, selling, marketing, and societal marketing philosophies. Where the study emphasized

### Social Price and Customer Buying Behaviour ‘

The finding in Research question 2 shows that majority of the respondents agreed that social price increase customer buying behaviour of selected departmental stores in South-South Nigeria. This is in line with Parag (2024) measured the impact of multiple pricing strategy on channel selection by consumers, to measure the satisfaction level of consumers while shopping on multiple channels at multiple prices and to measure influence of consumer shopping orientation on cross channel usage. Buyers are strongly influenced by product prices, with customer satisfaction serving as a moderating factor.

### Social Promotion and Customer Buying Behaviour

The finding in Research question 4 shows that majority of the respondents agreed that the adoption of social promotion on customer buying behaviour of selected departmental stores in South-South Nigeria. This is supported by Oliha and Obiaka (2024), created a multifaceted advertising model that assesses the effect of informativeness, entertainment, irritability, and credibility on the valuableness of social media advertising and how these factors influence consumers' buying intentions. It adopted a covariance-based structural equation modelling approach where primary data was collected by administering questionnaires to a sample study of 364 selected participants, who were university students, employees, and entrepreneurs. The data gathered were analyzed using confirmatory factor analysis and structural equation modelling method were used to examine the correlation between the identified predictors and purchase intention while validating the model constructed. The results established that a strong correlation exists between the perceived value of informativeness and credibility of social media advertising and customer buying intention. The findings, while frowning that advertisements with overly entertaining content may irritate potential buyers, posited that perceived value is critical in the conversion of advertising engagement into purchase habit. The study significantly highlighted that perceived value is the key mediator in the proposed model with a very strong correlation that impacts consumers' buying intention; that is, consumers who perceive value in the ads are far more likely to express their buying intention. The study recommended that advertisers should focus on making their social media ads more valuable to positively affect customer perceptions

### Summary, Conclusion and Recommendations

#### Summary of Findings

This study focused on sociological marketing and consumer buying behaviour of departmental stores in South-South, Nigeria. Four research questions were formulated to guide the study. Several literatures were reviewed and cited in this study for better understanding. This study adopted cross sectional survey research design method research design. The data collected from the respondents was presented and analyzed using simple descriptive statistics such as frequency distribution tables, percentages and arithmetic mean score. The mean cut-off point of 2.50 bench mark was adopted to determine acceptance and rejection of each item in the questionnaire. The hypotheses were tested with t-test statistical techniques. The findings revealed that:

- i. social product has significant effect on consumer buying behaviour of departmental stores in South-South Nigeria
- ii. social price has significant impact on consumer buying behaviour of departmental stores in South-South Nigeria
- iii. social promotion has significant effect on consumer buying behaviour of departmental stores in South-South Nigeria

### Conclusion

The study of consumer buying behaviour is gate way to success in market. Also, understanding, analyzing and keeping track of consumer behavior is very critical for a marketing department to retain their position successfully in the market place.

Sociological marketing factors such as social product, social price, social place and social promotion seemingly influence consumer buying behaviour by determining when, how, what, and why to buy a particular product at a given time. These factors are also applicable to consumers in South-South Nigeria. Marketing may be a strategy in influencing a consumer to consume a product or brand, factors that socially and economically dictate the processes and actions are naturally in existence to guide and direct such an individual. This is true in many societies where people must consider their sociological marketing factors in determining their behavior toward consuming a product. Based on these findings the study concludes that every departmental and retail stores needs to be aware and implement those factors that brings about positive experiences while their sociological marketing factors used by them, so as to bring about a positive and desired influence on consumer buying behaviour.

### Recommendations

These recommendations were based on the analyzed results and conclusions:

- i. retail outlets and departmental stores should focus on delivering personalized experiences by tailoring their messages, products, and services based on consumer behavior insights and marketers need to remain flexible and responsive to changes in consumer behavior, adapting their strategies to new trends, technologies, and shifts in market demand.
- ii. it is pertinent for managers to understand changing consumer needs, wants, and motivations and thereby devise the most appropriate mix for his market. Then, to the marketer the dynamic nature of consumer behavior implies rapid product development, changing communications, and distribution strategies in order to be more effective. While some outcomes may be significant to marketing practice the overall goal

of such research endeavor is to achieve better understanding of consumer behaviour

- iii. marketers should place in social services reasonably priced product as most of

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customers get attraction to such products as they are price-sensitive



## Gender Dynamics and Succession Planning in Family Businesses: Evidence from Ondo State, Nigeria

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### Abstract

*Succession in family business is a crucial component for business continuity and most of the family business successors are males which shows that leadership is skewed against females. This study explored gender dynamics and succession planning in family businesses: Evidence from in Ondo State. The study focuses on the perception about the succession process in family businesses related gender issues in Ondo State and why daughters may feel discriminated for succeeding their parents in a family firm. The study analyse the influence of cultural stereotype, trust and management ability on family business succession with focal point among Small And Medium Enterprises (SMEs) in Ondo State. Structured questionnaire schedule was delivered and data were acquired from 220 SMEs of family businesses, utilising a cross-sectional survey of descriptive research design. Data from the questionnaire were analysed using multiple regression in determining link among the variables. The findings suggested that cultural stereotype and trust has substantial influence on the choice of a successor in family businesses in Ondo State while managerial skill has insignificant influence on the choice of a successor in family businesses in Ondo State. It was proposed that the ability to run family business should be crucial in choosing a successor rather than to stereotype daughters on the basis of culture, since that will determine if the firm would continue.*

**Keywords:** Family Business, Gender, Successor, Succession planning.

### Introduction

Family businesses represent a critical component of global economic development, serving as the backbone of many economies worldwide. These enterprises are often characterised by strong organizational structures, strategic leadership positions occupied by family members, and a deep commitment to long-term success (Hania, 2018; Sharma & Salvato, 2021). As noted by Timmons and Spinelli (2017), family businesses have endured for centuries and continue to account for a significant proportion of global economic activity. Globally, family-owned enterprises constitute the largest form of business ownership, surpassing even multinational corporations in terms of prevalence. It is estimated that 65–80% of all businesses worldwide are either family-owned or family-managed (Foltz & Marshall, 2018; PwC, 2021). This trend is equally prominent in Africa, where family businesses are expanding rapidly. In Nigeria, family enterprises contribute approximately 46.54% to the nation's Gross Domestic Products (GDP) and represent over 80% of organized private sector businesses (SMEDAN, 2017, as cited in Ogbечи & Anetor, 2018). These businesses

form one of the oldest and most dominant organizational structures globally (Abouzaid, 2018), exerting significant influence on local and national economies (Shittu & Ibitomi, 2019).

Despite their socioeconomic relevance, succession planning remains a contentious issue in many family businesses, particularly in patriarchal societies like Nigeria. While both male and female offspring may be equally capable, succession tends to favour sons over daughters. This preference is often rooted in cultural norms, gender stereotypes, and societal expectations (Martin, 2011; Jimenez, 2009; Wang, 2016). The traditional primogeniture system, in which the first-born male inherits leadership, continues to shape succession decisions in many African and Middle Eastern contexts (Llano & Olguin, 2016).

Women in family businesses are frequently marginalized, relegated to less influential roles or excluded entirely from leadership (Byrne & Fattoum, 2015). Even in cases where daughters possess the requisite managerial skills, trustworthiness, and commitment, succession decisions are biased by perceptions of male dominance and concerns about

marital status or surname continuity (Miller, Steier, & Breton-Miller, 2013; Allen & Langowits, 2003; Pyromalis et al., 2008).

Recent studies have highlighted the barriers faced by women in attaining leadership positions within family enterprises (Barrett & Moores, 2019; Vera & Dean, 2015; Collins, Tucker, & Pierce, 2010). These barriers include not only overt gender discrimination but also subtler structural factors that disadvantage women. In patriarchal societies, cultural prescriptions often discourage female leadership, reinforcing the narrative that leadership is a male prerogative (Ayub & Jehn, 2022; OECD, 2023).

In Nigeria, particularly among the Yoruba ethnic group predominant in Ondo State, cultural factors play a central role in shaping succession decisions. Yoruba traditions often prioritize male heirs, viewing them as the legitimate bearers of the family name and authority (Aina, 2020). This study is thus situated in Ondo State, a region emblematic of gender-based succession biases, and covers the period from 2000 to 2025 capturing both pre- and post-COVID-19 perspectives.

This research focuses on three key variables: cultural stereotypes, trust, and managerial aptitude as they relate to gender preference in the succession planning of family businesses. These factors were chosen due to their observable prevalence and influence in the succession practices of family-run enterprises in the region.

The study makes several contributions. First, it enriches existing literature on gender dynamics in family business succession. Second, it provides practical insights for business owners and family business leaders to develop transparent and inclusive succession frameworks. Lastly, it offers a road map for policymakers to design equitable succession policies that support gender diversity and sustainability in family enterprises.

In essence, this study aims to investigate the extent to which cultural norms, trust dynamics, and perceived managerial competence influence gendered succession choices in family businesses. By doing so, it seeks to promote gender-inclusive practices that enhance business continuity and inter-generational equity in Nigeria's evolving enterprise landscape.

## **Literature Review**

### **Conceptual Review**

#### **Cultural Stereotype**

Stereotypes reflect a society's collective understanding of customs, values, beliefs, and social structures. These generalized assumptions are shaped by cultural, religious, and institutional influences (Macrae, *et al.*, 2015). According to social cognition theories, stereotypes form a crucial part of an individual's social

knowledge and directly influence interpersonal behavior (Hibbard & Buhrmester, 2011; Witt, 2018).

Stereotyping is defined as the cognitive process through which individuals perceive and judge others, particularly outgroup members, based on generalized beliefs. Gender stereotypes, in particular, are linked to cognitive schemas that drive expectations: men are often perceived as independent, assertive, and task-oriented, while women are viewed as nurturing, emotional, and people-oriented (Burr, 2000; Tavris, 2012).

Hofstede's cultural dimensions framework highlights how societies position men and women differently, influencing their roles both at work and at home (Ullah, 2015). In many traditional cultures, women's professional roles are often considered secondary to domestic responsibilities. This division is reinforced through early socialization via family, education, religion, and media (Hibbard & Buhrmester, 2011).

Family, a fundamental cultural unit, significantly influences organizational outcomes yet remains underexplored from a management standpoint. As a core socializing agent, the family not only shapes gender norms but also directly affects succession patterns and stakeholder expectations in family-owned enterprises (Chrisman, Chua, & Steier, 2016).

Trust is defined as the willingness of an individual to be vulnerable to another, based on the expectation that the latter will act in a reliable and non-opportunistic manner (Mayer, Davis, & Schoorman, 2015). Trust plays a pivotal role in family firms, where personal and professional relationships are deeply intertwined (Corbetta & Salvato, 2014; Steier, 2011).

Research shows that trust is a critical psychological construct influenced by emotion, past behavior, and social context (Baron, 2013; Dunn & Schweitzer, 2015; Weick, 2018). In family businesses, trust is not just a by-product of kinship ties but a strategic asset that enhances cooperation and reduces the need for formal control mechanisms (Sundaramurthy, 2018; Cruz et al., 2017).

Chrisman, Chua, Kellermanns, and Chang (2017) argue that long-term relational ties in family businesses foster unique trust dynamics, allowing for reduced agency costs and increased organizational commitment. Furthermore, the form and function of trust may vary depending on the stage of business development, leadership structure, and family involvement (Karra et al., 2016). Trust in family businesses may lead to stewardship behaviors, where leaders act in the interest of the firm rather than themselves, aligning with the family's long-term goals and values (Chrisman et al., 2017).

## Managerial Aptitudes

Managerial aptitude refers to a leader's ability to make strategic decisions, motivate others, and implement ideas effectively. It encompasses conceptual, interpersonal, and technical skills vital for both short-term performance and long-term sustainability (Daft, 2019).

According to Daft (2019), managerial effectiveness requires:

Conceptual skills: Understanding how the organization fits into its environment.

Human (people) skills: Relating and working well with others.

Technical skills: Proficiency in specific tasks or tools relevant to the organization.

Davis (2014) emphasizes that execution delivering projects on time and within budget is a cornerstone of family business success. In the context of succession, managerial aptitude is a major determinant of who is seen as "fit to lead." Family size, business complexity, and perceived leadership competence often influence whether a male or female successor is chosen (Arieu, 2016; Nuthall, 2017).

## Theoretical Review

### Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory, introduced by Wernerfelt (1984), remains a foundational framework in strategic management. The theory posits that a firm's internal resources if valuable, rare, inimitable, and non-substitutable (VRIN) can offer sustainable competitive advantage and superior long-term performance (Barney, 1991; Peteraf, 1993). These resources extend beyond tangible assets to include intangible and socially complex capabilities such as organizational culture, trust, and leadership dynamics. In the context of family-owned businesses, the RBV provides a compelling explanation of how unique internal characteristics rooted in family involvement affect performance outcomes. Habbershon and Williams (1999) coined the term familiness to describe the idiosyncratic bundle of resources resulting from the interaction between family, business, and individual family members. These include trust-based relationships, commitment to long-term goals, shared values, and emotional attachment to the firm assets that are difficult to replicate in non-family businesses (Sirmon & Hitt, 2003; Chrisman, Chua, & Sharma, 2005).

Cabrera-Suárez, De Saá-Pérez, and García-Almeida (2011) emphasized that family firms often outperform their counterparts by leveraging unique combinations of knowledge, social capital, and managerial experience rooted in family tradition. However, the

same characteristics that provide competitive advantages may also constrain succession planning. Family dynamics and emotional ties can hinder rational decision-making during leadership transitions, especially when gender biases limit female successors' access to leadership (Bocatto, Gispert, & Rialp, 2010; Habbershon & Williams, 1999).

Thus, RBV offers a robust lens for examining succession in family businesses by linking internal firm characteristics such as managerial aptitude, trust, and family influence to organizational outcomes. In this study, RBV is relevant for understanding how gendered access to key managerial resources affects leadership succession decisions in Nigerian family firms.

### Liberal Feminist Theory

Liberal feminism offers an essential theoretical foundation for exploring gender inequality in organizational and entrepreneurial contexts. Rooted in Enlightenment thought, liberal feminist theory argues that women should be granted equal rights, opportunities, and access to resources as men, particularly in areas of education, employment, and leadership (Tong, 2013; Bryson, 2003).

Liberal feminists contend that inequality is not biologically determined but is a consequence of legal, institutional, and cultural barriers that limit women's participation and advancement in society. The theory advocates for reform through legislative changes and social policies aimed at creating equal opportunities for women and men in both private and public spheres (Lorber, 2010). In the business world, this translates to removing discriminatory practices that prevent women from advancing to leadership positions, particularly in male-dominated domains such as family enterprises.

Within the family business context, liberal feminism helps explain the gendered processes that govern succession decisions. Numerous studies have shown that female successors are often overlooked or relegated to secondary roles due to persistent stereotypes about women's leadership capabilities, emotional suitability, and perceived loyalty (Cromie & O'Sullivan, 1999; Dumas, 1989; Lewis & Massey, 2011). Even when women possess equivalent or superior qualifications to their male siblings, cultural norms and family traditions frequently disadvantage them in succession planning (Janjuha-Jivraj, 2004; Poza & Messer, 2017).

Moreover, liberal feminist scholars have emphasized that while women may not always hold formal authority, they often possess informal or "hidden" power that influences strategic decisions in family businesses (Dhaliwal, 1998; Hollander & Bukowitz, 1990). However, without structural changes, such



informal influence rarely translates into formal leadership.

In this study, the liberal feminist lens is essential for interpreting how cultural stereotypes and discriminatory practices shape gender preferences in the succession of family-owned businesses in Nigeria.

### **Empirical Review**

Gender bias in succession planning remains a persistent challenge across family businesses globally, with recent empirical evidence affirming the role of cultural norms, trust dynamics, and managerial competencies in shaping these outcomes.

Vicente, et al (2017) examined gender considerations in family business succession in Spain. Using qualitative methods through interviews with family business owners and successors, their findings revealed a persistent preference for male successors, despite claims of gender neutrality in leadership decisions. Female successors were often excluded based on traditional norms and self-selection bias, where daughters opt out due to anticipated gendered constraints and familial expectations.

In Nigeria, Nwadukwe (2016) studied the effect of Igbo inheritance culture on succession planning in indigenous enterprises in the South-East region. Using a descriptive survey and inferential analysis, the study showed that the primogeniture inheritance system significantly limits women's chances of ascending to leadership roles in family businesses. It concluded that succession in such contexts is predominantly guided by patriarchal norms that favour the eldest male child, reinforcing gender inequality.

Similarly, Irefin and Hammed (2012) assessed the influence of cultural beliefs on entrepreneurial succession in John Wax Nigeria Limited. Their study, based on data from 160 respondents, found a statistically significant relationship between indigenous cultural values and succession outcomes. The results emphasized that traditional norms serve as structural barriers to the inclusion of women in leadership transitions.

Bennedsen, et al (2017), in their landmark study of 5,334 family business successions in Denmark, found that first-born sons were significantly more likely to be chosen as successors than daughters. Their findings emphasized that even in Western contexts, gendered biases persist albeit in more nuanced forms affecting leadership continuity and gender representation.

Wang (2016), through a systematic literature review, concluded that daughters are consistently marginalized in family business succession across both developed and developing economies. The study identified a constellation of macro-level factors (societal attitudes) and micro-level dynamics (family preferences) that perpetuate female exclusion. These factors contribute

to the “invisibility” of women’s contributions to family enterprises and reinforce stereotypes that daughters are less competent or trustworthy.

Henry, Erwee, and Kong (2013), in a qualitative case study of Canadian family businesses, explored the intersection of trust and gender in succession planning. They identified two key dimensions of trust: interpersonal trust and competence-based trust. Their study revealed that founders were more likely to entrust leadership to male heirs, perceiving them as inherently more competent, despite the absence of supporting evidence. Female successors had to “over-prove” their capabilities in ways that male counterparts did not.

In Canada, Ibrahim, et al (2014) conducted interviews with 42 CEOs of family businesses and highlighted three core components of successor effectiveness: leadership ability, managerial competence, and familial respect. The findings underscored that while managerial aptitude is critical, gendered perceptions often overshadow objective evaluations of competence, disadvantaging women in succession plans.

Morris, et al (1997) emphasized the importance of trust and interpersonal communication in succession outcomes. Their findings confirmed that family relationships, especially the level of trust between the founder and potential successor, play a decisive role in the succession process. Steier (2011) further supported this by noting that trust in family businesses often substitutes for formal governance mechanisms, but it can also reinforce patriarchal norms that marginalize female successors.

Sundaramurthy (2018) reinforced the notion that trust is not only critical to performance but is often rooted in emotional and affective ties within family enterprises. This can both strengthen the business and limit inclusivity, especially when leadership decisions are emotionally biased against daughters.

Additionally, Schenkel, et al (2016) found that out of 444 family businesses listed on stock exchanges, only one had a female successor in the absence of male heirs. This stark underrepresentation signals a deep-rooted structural imbalance. Martin (2011) reported that business founders sometimes opted to sell their businesses or appoint external CEOs rather than hand over leadership to their daughters, regardless of competence or birth order.

### **Methodology**

This study adopted a quantitative survey research design, which is appropriate for investigating relationships among variables using primary data collected via structured questionnaires. The design was chosen to enable the collection of standardized responses from a broad cross-section of respondents and to examine the causal relationship between gender preference and succession planning in family-owned

businesses with minimal researcher interference (Creswell & Creswell, 2018).

The target population comprised all registered Small and Medium-sized Enterprises (SMEs) with the Ondo State Ministry of Commerce and Industry. According to official data, there were 39,627 SMEs registered in Ondo State as of March 2025, encompassing family-owned businesses operating in Ondo Central, Ondo North, and Ondo South senatorial districts (Ministry of Commerce and Industry, 2025).

Table 1: Stratified Distribution of Sample

| S/N | Region       | SME Population | Sample Size |
|-----|--------------|----------------|-------------|
| 1   | Ondo Central | 26,345         | 265         |
| 2   | Ondo North   | 7,213          | 72          |
| 3   | Ondo South   | 6,069          | 62          |
|     | Total        | 39,627         | 399         |

Source: Field Survey (2025)

Primary data were collected using a structured questionnaire designed to elicit responses on cultural stereotypes, trust, managerial aptitude, and gender preference in succession planning. The instrument was pre-tested in a pilot study involving 40 respondents to , 2019).

A representative sample was determined using Yamane's (1967) formula for sample size calculation. Therefore, a sample size of 399 respondents was drawn from the population to ensure statistical reliability. A stratified random sampling technique was employed to ensure proportional representation from the three senatorial districts. The SMEs population was divided into strata based on geographic location (Ondo Central, Ondo North, and Ondo South), and samples were drawn proportionally from each stratum.

assess its validity and reliability. The internal consistency of the measurement items was evaluated using Cronbach's Alpha, rho\_A, and Composite Reliability (CR) metrics. All constructs exceeded the minimum threshold of 0.70, indicating acceptable levels of reliability (Hair et al.

Table 2: Reliability and Validity Statistics

| Variables                                      | Cronbach's Alpha | rho_A | Composite Reliability |
|------------------------------------------------|------------------|-------|-----------------------|
| SFB (Succession in Family Business)            | 0.87             | 0.85  | 0.93                  |
| CSGP (Cultural Stereotype & Gender Preference) | 0.92             | 0.76  | 0.78                  |
| TRGP (Trust & Gender Preference)               | 0.81             | 0.77  | 0.89                  |
| MAGP (Managerial Aptitude & Gender Preference) | 0.79             | 0.82  | 0.92                  |

Source: Field Survey (2025)

Data analysis was carried out using descriptive and inferential statistical methods with the aid of SPSS . Descriptive statistics (mean, frequency, and standard

deviation) were used to summarize demographic data and respondent perceptions. To test the study's hypotheses and evaluate the strength and direction of relationships between variables, Pearson correlation and multiple regression analysis were employed.

## Data Analysis and Discussion

Table 3: Gender Distribution of Respondents Across Ondo State Senatorial Districts

| Gender | Ondo North | %    | Ondo South | %    | Ondo Central | %    | Total | %    |
|--------|------------|------|------------|------|--------------|------|-------|------|
| Male   | 62         | 62.6 | 69         | 77.7 | 26           | 74.3 | 157   | 70.1 |
| Female | 37         | 37.4 | 21         | 22.3 | 9            | 25.7 | 67    | 29.9 |
| Total  | 99         | 100  | 90         | 100  | 35           | 100  | 224   | 100  |

Source: Field Survey, 2025

From Table 3, a total of 224 valid responses were obtained from the three senatorial districts in Ondo

State. In Ondo North, out of 99 respondents, 62 (62.6%) were male, while 37 (37.4%) were female. In Ondo South, 69 out of 90 respondents (77.7%) were male and

21 (22.3%) were female. Similarly, in Ondo Central, 26 out of 35 respondents (74.3%) were male and 9 (25.7%) were female. Overall, the data show a clear male dominance among respondents, with males constituting

70.1% and females 29.9%. This finding suggests a higher level of male participation or preference in succession planning within family-owned businesses in Ondo State.

**Table 4: Descriptive Statistics of Key Constructs**

| Variable                            | N   | Minimum | Maximum | Mean | Std. Deviation | Skewness | Std. Error |
|-------------------------------------|-----|---------|---------|------|----------------|----------|------------|
| Succession in Family Business (SFB) | 224 | 1       | 3       | 1.42 | 0.395          | 1.282    | 0.172      |
| Cultural Stereotype (CS)            | 224 | 1       | 2       | 1.49 | 0.454          | 0.578    | 0.172      |
| Trust (TR)                          | 224 | 1       | 3       | 1.46 | 0.433          | 1.585    | 0.172      |
| Managerial Aptitude (MA)            | 224 | 1       | 3       | 2.41 | 0.554          | 0.094    | 0.172      |

**Source:** SPSS Output, 2025

Table 4 presents the descriptive statistics for the main variables used in the study: Succession in Family Business (SFB), Cultural Stereotype (CS), Trust (TR), and Managerial Aptitude (MA). The mean scores indicate the average responses of participants on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The mean for SFB is 1.42 (SD = 0.395), indicating general disagreement with items representing succession challenges. CS recorded a mean of 1.49 (SD = 0.454), suggesting that cultural stereotypes were modestly acknowledged by respondents.

TR had a mean of 1.46 (SD = 0.433), reflecting low levels of perceived trust as a barrier to succession. MA stood out with a mean of 2.41 (SD = 0.554), indicating a relatively higher perception of managerial aptitude as an important factor in succession planning. Skewness values for SFB and TR show positive skew, indicating that a majority of responses clustered toward lower values (i.e., disagreement), especially in trust-related items. In contrast, MA had the lowest skewness, suggesting more balanced responses. These insights form the basis for further inferential analysis in the subsequent section.

**Table 5: Model Summary**

| Model | R    | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|------|----------|-------------------|----------------------------|---------------|
| 1     | .823 | .705     | .610              | 0.305                      | 1.756         |

- a. Predictors: (Constant), Cultural Stereotype (CS), Trust (TR), Managerial Aptitude (MA)  
b. Dependent Variable: Succession in Family Business (SFB)

The model summary in Table 5 shows a strong correlation coefficient (R) of 0.823, indicating a robust positive relationship between the independent variables (CS, TR, MA) and the dependent variable (SFB). The

coefficient of determination ( $R^2$ ) is 0.705, suggesting that approximately 70.5% of the variance in family business succession can be explained by the combined influence of cultural stereotypes, trust, and managerial aptitude. The Durbin-Watson statistic of 1.756 falls within an acceptable range, indicating that there is no significant autocorrelation among the residuals. This supports the reliability of the regression model for predictive and explanatory purposes.

**Table 6: ANOVA Results**

| Model      | Sum of Squares | Df  | Mean Square | F      | Sig.  |
|------------|----------------|-----|-------------|--------|-------|
| Regression | 18.013         | 3   | 6.004       | 72.014 | 0.000 |
| Residual   | 15.157         | 221 | 0.069       |        |       |
| Total      | 33.170         | 224 |             |        |       |

- a. **Dependent Variable:** Succession in Family Business (SFB)  
b. **Predictors:** (Constant), CS, TR, MA

The results of the ANOVA test indicate that the regression model is statistically significant ( $F = 72.014$ ;

$p < 0.001$ ), confirming that at least one of the predictors significantly contributes to explaining

changes in family business succession. This validates the model's overall fitness and rejects the null hypothesis that managerial aptitude, trust, and cultural stereotypes have no significant impact on family business succession.

**Table 7: Coefficient Estimates**

| Model                    | Unstandardized Coefficients (B) | Std. Error | Standardized Coefficients (Beta) | t      | Sig.  |
|--------------------------|---------------------------------|------------|----------------------------------|--------|-------|
| (Constant)               | 0.829                           | 0.128      | —                                | 6.611  | 0.000 |
| Cultural Stereotype (CS) | 0.555                           | 0.047      | 0.638                            | 12.380 | 0.000 |
| Trust (TR)               | 0.173                           | 0.048      | 0.188                            | 3.820  | 0.000 |
| Managerial Aptitude (MA) | -0.061                          | 0.036      | -0.082                           | -1.673 | 0.096 |

### Cultural Stereotypes and Family Business Succession

The regression results show that cultural stereotypes significantly influence succession planning in family businesses (**B = 0.555,  $p < 0.01$** ). This indicates that a unit increase in cultural stereotype perception leads to a 0.555 increase in succession outcomes. The high standardized beta coefficient ( **$\beta = 0.638$** ) underscores its strong explanatory power. This supports the hypothesis that cultural perceptions significantly shape leadership transitions in family enterprises.

### Trust and Family Business Succession

Trust also emerged as a statistically significant predictor of succession (**B = 0.173,  $p < 0.01$** ). A unit increase in trust results in a 0.173 improvement in succession outcomes, suggesting that interpersonal trust among stakeholders fosters smoother transitions in family firms.

### Managerial Aptitude and Family Business Succession

Interestingly, managerial aptitude recorded a **negative and statistically insignificant effect** on succession outcomes (**B = -0.061,  $p = 0.096$** ), indicating that higher managerial capability does not necessarily guarantee a successful succession. This finding challenges conventional assumptions and may point to underlying sociocultural or political dynamics that prioritize lineage or gender over competence in succession planning.

### Discussion of Findings

The findings of this study provide empirical support for the hypothesis that cultural stereotypes significantly influence the choice of successor in family-owned businesses in Ondo State, Nigeria. The study revealed a positive and statistically significant relationship between cultural stereotypes and family business succession, suggesting that deeply ingrained gender norms and expectations shape succession planning processes. This finding is consistent with the work of Vicente et al. (2017), Daspit et al. (2016), Bennedsen et al. (2007), and Wang (2016), all of whom reported that cultural perceptions and gender-based expectations play a key role in shaping

succession decisions in family businesses. The results align with Gender Role Theory, which asserts that gender stereotypes influence how leadership potential is perceived. Stereotypical views portray women as nurturing, passive, and cooperative, while men are seen as assertive, decisive, and task-oriented. These social constructs affect how individuals judge their own leadership potential and how they are perceived by others. Consequently, female successors are often viewed as less capable or unsuitable for leadership, reinforcing a gender preference that favors male successors despite actual competence or managerial aptitude.

The study also confirms the positive and significant impact of trust on family business succession, supporting the second hypothesis. Trust between founders and potential successors was found to be a critical determinant of succession outcomes. This is in line with the conclusions of Henry et al. (2013) and Vera and Dean (2015), who emphasized that trust enhances communication, strengthens intergenerational relationships, and facilitates leadership transition in family enterprises. A high degree of trust reduces uncertainty and increases the likelihood of successful succession.

In contrast, managerial aptitude was found to have a negative and statistically insignificant influence on family business succession. This suggests that managerial competence, while important, does not significantly determine who is chosen as a successor in the study context. These findings echo those of Martin (2011) and Sonfield and Lussier (2015), who argued that succession decisions are often influenced more by social and cultural expectations than by demonstrable leadership or management skills. The perception that women are more risk-averse, less confident, and less assertive than men continues to shape succession decisions, regardless of their actual capabilities or professional experience.

In summary, the study reveals that non-technical and socio-cultural factors especially stereotypes and trust play a greater role than professional aptitude in shaping succession outcomes within family businesses in Ondo State. This emphasizes the need for a shift in succession planning frameworks, from culture-bound assumptions to merit-based criteria.

## Conclusion And Recommendations

This study investigated the influence of cultural stereotypes, trust, and managerial aptitude on gender preference in family business succession in Ondo State, Nigeria. Based on empirical findings, it was concluded that gender preference remains largely skewed toward male successors, driven by cultural norms and perceptions rather than objective evaluations of managerial competence.

The study revealed that cultural stereotypes play a dominant role in shaping succession decisions, with the prevailing belief that male children are more suitable successors due to their ability to preserve the family name, uphold traditional values, and maintain control over family resources. This reflects entrenched gender biases, often to the detriment of equally capable female successors.

Furthermore, the study concluded that trust significantly influences succession outcomes, as families tend to express greater confidence in male successors, assuming they are less likely to divert the business outside the family structure. There is a perceived risk that female successors may transfer ownership or influence through marital ties, leading to reluctance in appointing them as successors.

While managerial aptitude was hypothesized to be a key determinant of succession, the findings suggest it plays a less significant role in actual decision-making. Rather than being selected based on skill, competence, or education, successors are often chosen based on gendered assumptions and family trust dynamics. This undermines the principles of merit-based succession planning and may compromise the long-term sustainability of the business.

This research contributes to the growing literature on gender dynamics in family business succession and highlights the need for more inclusive and competence-driven succession practices. It emphasizes the importance of challenging cultural norms that hinder women's participation in leadership within family enterprises.

Based on the study's findings and conclusions, the following recommendations are proposed:

- i. Promote gender-inclusive succession planning: Daughters should be considered equally for succession based on their capabilities, commitment, and leadership potential. Cultural stereotypes that limit female participation in business leadership should be actively discouraged through awareness and policy reforms within family enterprises.
- ii. Institutionalise trust based on competence, not gender: Families should build trust through transparency, mentorship, and shared experiences, rather than relying on gender-based assumptions. Trust should be cultivated based on demonstrated loyalty, business acumen, and integrity regardless of the successor's gender.
- iii. Prioritize managerial competence over cultural assumptions: Succession decisions should be guided

by managerial aptitude, educational qualifications, and leadership skills, rather than tradition or family expectations. Objective assessment tools and succession planning frameworks should be employed to identify the most competent successor.

iv. Capacity Building and Leadership Development for Female Successors: Family businesses should invest in leadership training, mentorship, and exposure for female members of the family to prepare them for potential leadership roles. This will help dismantle the myth of female inadequacy in business leadership.

v. Policy Advocacy and Legal Support: Stakeholders, including government and business associations, should promote policies that support gender equity in family business leadership and succession. Legal provisions should discourage discriminatory practices that exclude qualified female successors.

By adopting these recommendations, family-owned enterprises in Ondo State and by extension, Nigeria can foster inclusive, sustainable, and performance-driven succession planning, ensuring continuity, growth, and generational stability in family businesses.

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## Sustainability Reporting and Corporate Performance of Publicly Listed Commercial Banks in Nigeria

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### Abstract

*This study investigated the effect of sustainability reporting on corporate performance of publicly listed commercial banks in Nigeria using ex-post facto research design. The study examined how environmental, social, and governance disclosures affect financial performance (return on assets). The study used secondary data, utilizing information from audited annual and sustainability reports of the publicly listed commercial banks on the Nigerian Exchange Group. The study population comprised all publicly listed commercial banks on the Nigerian Exchange Group and the sample comprised publicly listed banks that had consistently published sustainability reports between 2019-2024. Data were analyzed via descriptive, diagnostic and inferential tools. The inferential statistical results revealed among others, significant positive effect of sustainability disclosures (governance, social and environmental) on corporate performance of the publicly listed commercial banks in Nigeria. Thus, the study concludes that sustainability reporting is a strategic driver of corporate performance and competitiveness in the Nigerian banking sector, although its effectiveness largely depends on disclosure quality, consistency, and transparency. On the basis of the finding, the study recommends that regulatory frameworks should be strengthened to standardize sustainability reporting, by ensuring compliance with global and national guidelines such as the global reporting initiative. In addition, there is need for capacity-building programs needed to be organized to train Nigerian commercial banks in effective disclosing sustainability issues in their financial statements.*

**Keywords:** Sustainability reporting; Commercial banks; Financial performance; Economic disclosure; Social disclosure; Environmental disclosure

### Introduction

Practically, two fundamental tenets of sustainable business practices and efficient corporate governance are accountability and transparency. In order to facilitate informed decision-making and build confidence, transparency comprises the open presentation of timely, accurate, and trustworthy information to stakeholders (Ijeoma & Aronu, 2023). It includes non-financial disclosures such as environmental, social, and governance (ESG) indicators in addition to the distribution of financial reports. On the other hand, accountability means that businesses must explain their choices and actions to stakeholders and accept responsibility for the results (Enahoro, Adebayo & Momoh, 2019). Transparency in corporate governance reduces information asymmetry, lowers the risk of fraud, and boosts stakeholder confidence by guaranteeing that stakeholders—including investors, staff, regulators, and the general public - have access to vital information about a business's operations and decision-making procedures (Ogundare, 2020).

When assessing a company's sustainability performance, transparency is essential. Stakeholders can evaluate a company's contributions to societal objectives including poverty alleviation, climate action, and economic growth when it publicly discloses its environmental, social, and governance impacts (Owolabi & Iyoha, 2012). Accountability is more than just reporting; it also includes the procedures by which businesses are held accountable for their actions. Adherence to legal and regulatory frameworks and ethical decision-making are significantly influenced by it (Akinleye & Ogunmuyiwa, 2022). Corporate accountability is important in the context of sustainability reporting because it is enshrined in a number of laws and regulations in Nigeria, such as the Companies and Allied Matters Act (CAMA) and the Nigerian Code of Corporate Governance (NCCG). These frameworks require that directors and management act in the best interests of stakeholders.

Businesses must show that they have taken concrete steps to address their environmental and social impacts in addition to disclosing their governance,

social, and environmental performance. Accountability and transparency are principles that are mutually reinforcing. Accountability guarantees that this information results in significant action, whereas transparency guarantees that information is available. When combined, they produce a feedback loop that promotes trust and propels ongoing enhancements to business performance (Akpan, 2017). In the current era of increased stakeholder knowledge of environmental, social, and governance (ESG) issues, sustainability reporting has become a strategic instrument for improving corporate transparency and accountability.

In order for stakeholders to assess an organization's contributions to sustainable development, sustainability entails the methodical disclosure of its ESG performance (Enahoro et al., 2019). Sustainability reporting fosters long-term value creation, improves corporate reputation, and fosters trust by incorporating accountability and transparency into business operations (Owolabi & Iyoha, 2012). Transparency is essential to sustainability reporting because it guarantees that stakeholders can obtain accurate and trustworthy information about a company's activities and effects. Transparent sustainability reporting also gives stakeholders important information about a company's labour practices, environmental policies, carbon footprint, and community engagement initiatives (Amaeshi et al., 2018).

Sustainability reporting increases accountability by obligating corporations to demonstrate how they address the environmental and social repercussions of their operations. "Green-washing"—the act of misrepresenting environmental responsibility—is avoided by accountability measures incorporated into sustainability reporting, which guarantee that declared pledges result in concrete activities (Ogundare, 2020). Its function as a governance tool makes the connection between sustainability reporting, accountability, and transparency clear. By giving stakeholders the knowledge they need to hold businesses responsible for their ESG performance, transparent reporting helps to bridge the gap between stakeholder expectations and corporate behaviour. The evaluation of a company's capacity to accomplish its goals and provide value to stakeholders is known as corporate performance. In the past, financial indicators like profitability, revenue growth, and return on investment served as the main foundation for this assessment. Nonetheless, contemporary viewpoints on corporate performance take into account non-monetary metrics, like environmental, social, and governance (ESG) standards, acknowledging the wider influence that companies have on the environment (Adegbite & Ezeagba, Akamelu & Umeoduagu, 2022).

Given Nigeria's reliance on sectors like manufacturing, finance, and oil and gas, corporate performance plays a crucial role in determining the

nation's economic stability and growth. As stakeholders call for greater responsibility and transparency from businesses, the integration of financial and non-financial performance metrics has grown in popularity. A company's profitability, liquidity, and operational efficiency are all reflected in its financial performance, which is still a crucial aspect of corporate performance. Financial health is frequently assessed using metrics like return on assets (ROA). Macroeconomic variables such as inflation, exchange rate volatility, and regulatory policies have a significant impact on the financial performance of businesses in Nigeria (Ogundare, 2020). A company's environmental, social, and governance (ESG) contributions are the focus of non-financial performance, which is becoming more and more acknowledged as a factor in long-term value development (Odiaka, 2021).

Governance, social responsibility, and environmental effect are the main non-financial performance metrics. Environmental effect refers to the actions taken by businesses to minimise waste, save resources, and lessen their carbon footprint. Nigerian oil corporations, for instance, are judged on their capacity to invest in community development initiatives and reduce environmental harm (Okafor, Egbunike & Ezelibe, 2020). Initiatives that enhance community relations, worker welfare, and societal well-being are all part of social responsibility. Companies in Nigeria are increasingly adopting corporate social responsibility (CSR) programs to address issues such as poverty alleviation and education (Olayinka & Aminu, 2021). Companies with effective governance frameworks are more likely to gain stakeholder trust and maintain long-term success (Enahoro et al., 2019).

Corporate performance and sustainability reporting are central to the study of "Sustainability Reporting and Corporate Performance in Nigeria." These two components are essential to comprehending how corporate governance and business responsibility are changing in Nigeria. The purpose of the study was to investigate the connection between corporate performance in Nigeria and sustainability reporting. While corporate performance assesses a company's financial and non-financial accomplishments, sustainability reporting offers a framework for corporations to reveal their environmental, social, and governance (ESG) efforts. Arising from the above discuss, the study was set out to achieve three (3) specific objectives:

- iii) To examine the effect of environmental reporting on financial performance of listed commercial banks in Nigeria;
- iv) To ascertain the effect of governance reporting on financial performance of listed commercial banks in Nigeria; and
- v) To assess the effect of social reporting on financial performance of listed commercial banks in Nigeria.

## **Review of Related Literature**

### **Sustainability Reporting**

The process via which businesses inform different stakeholders on their Environmental, Social, and Governance (ESG) performance is known as sustainability reporting. It is a crucial component of contemporary business procedures, stressing responsibility and openness when dealing with sustainability challenges (Okafor, Egbunike, & Ezelibe, 2020). Organisations may demonstrate their dedication to sustainable development by using sustainability reporting to help them convey their sustainability projects, difficulties, and successes. The Global Reporting Initiative (GRI, 2021) states that it entails giving an impartial and balanced assessment of a business's activities, including its contributions to social justice, environmental preservation, and economic expansion. Sustainability reporting has become popular in Nigeria as a result of growing environmental deterioration, economic difficulties, and public demands for corporate social responsibility.

Nigeria's economic environment is closely examined for its effects on the environment and society, particularly in resource-intensive industries like manufacturing, gas, and oil. For instance, the Niger Delta's oil spills and gas flaring have brought attention to the necessity for businesses to report their environmental policies and operate sustainably (Amaeshi, Adi, Ogbechie, & Amao, 2018). A move away from a profit-only objective and towards a more inclusive strategy that takes ESG factors into account is reflected in the rising demand for sustainability reporting. Reporting on sustainability has several uses for businesses. It makes it possible for companies to conform to global standards such those set forth by the Sustainability Accounting Standards Board (SASB) and the Global Reporting Initiative (GRI). These frameworks offer recommendations for dependable, comparable, and consistent reporting. Businesses can acquire a competitive edge, draw in socially conscious investors, and show their dedication to ethical business practices by implementing these criteria (Olayinka & Temitope, 2021).

Moreover, sustainability reporting boosts a company's reputation and long-term value development by enabling it to track its performance against international standards such as the Sustainable Development Goals (SDGs) of the UN. However, there were several obstacles in Nigeria's way when it came to implementing sustainability reporting. Many businesses lack the technical know-how necessary to create thorough and precise reports (Olayinka & Aminu, 2021). According to a research by Uwuigbe, Uwuigbe, and Okorie (2018), many Nigerian businesses participate in "green-washing," which is the practice of inflating their sustainability initiatives in order to preserve a favourable public

perception. This cast doubt on sustainability reporting's ability to promote true corporate responsibility and damaged its credibility. Progress has been made in spite of these challenges.

Some Nigerian businesses have embraced sustainability reporting as a strategic tool for stakeholder engagement and reputation management, especially in the banking and telecoms industries. Companies, for example, have incorporated sustainability into their business plans and release yearly sustainability reports that conform to international standards. As businesses look to improve operational effectiveness, brand reputation, and investor attractiveness, this change shows an increasing understanding of the connection between sustainability reporting and performance (Akpan, 2017). In addition, sustainability reporting is essential for tackling Nigeria's environmental and socioeconomic problems. In order to match their operations with the nation's developmental goals, it encourages businesses to give priority to issues like gender justice, environmental conservation, and poverty reduction (Owolabi & Oluwaseun, 2020). In the end, sustainability reporting serves as a strategic framework for promoting long-term value creation, stakeholder trust, and sustainable economic progress in Nigeria rather than merely being a compliance instrument.

### **Governance Sustainability**

A crucial part of sustainability reporting is governance sustainability reporting, which focusses on how businesses are run, controlled, and held responsible for their strategic choices and operations. It guarantees long-term business sustainability by demonstrating a company's dedication to moral behaviour, legal compliance, and efficient leadership structures (Oyeowo, Babajide & Oseni, 2020). Building trust, accountability, and openness between companies and their stakeholders requires governance sustainability reporting. Information about corporate governance frameworks, ethical standards, risk management, decision-making procedures, and stakeholder engagement must be disclosed as part of governance sustainability reporting (Uadiale & Fagbemi, 2012).

Reports on governance sustainability demonstrate how businesses incorporate governance ideas into their broader sustainability plans. Metrics including executive salary, anti-corruption measures, internal controls, board diversity, and regulatory compliance are frequently included in this kind of reporting. Guidelines for disclosures pertaining to governance are provided by frameworks such as the International Integrated Reporting Council (IIRC), Sustainability Accounting Standards Board (SASB), and Global Reporting Initiative (GRI) (Wang, Li & He, 2020). Since effective corporate governance guarantees that social, environmental, and economic objectives are in line with organisational strategy, these frameworks

highlight the significance of corporate governance in attaining sustainable growth.

The independence and organisation of a company's board of directors are highlighted in governance reports. It draws attention to the board's makeup, the inclusion of independent directors, and their responsibilities for monitoring management and defending the interests of shareholders. According to Uwuigbe, Uwuigbe, and Okorie (2018), listed businesses in Nigeria are required by the Nigerian Code of Corporate Governance (NCCG) 2018 to guarantee board independence in order to foster accountability and equitable decision-making. Organisations also reveal their ethical standards, which include anti-corruption policies, codes of conduct, and procedures for dealing with unethical behaviour. To illustrate their dedication to moral business conduct, Nigerian banks, for example, incorporate anti-bribery measures into their sustainability reports (Akpan, 2017). Insights into a company's risk management structure, including tactics for handling operational, financial, and reputational risks, are provided by effective governance sustainability reporting.

Furthermore, to make sure stakeholders are informed of potential obstacles and mitigation techniques, Nigerian companies frequently reveal how they handle market volatility, regulatory risks, and environmental concerns. The significance of openness in business processes is emphasised by this reporting. This covers revealing internal control systems, shareholder voting rights, and executive compensation. To increase stakeholder confidence, Nigerian corporations such as MTN Nigeria and Dangote Cement have integrated transparency into their governance reports. One essential component of reporting on governance sustainability is stakeholder involvement. Businesses reveal their relationships with communities, shareholders, workers, and authorities. Businesses in Nigeria that work in industries like oil and gas report on their efforts to involve the community in order to address social and environmental issues (Amaeshi et al., 2018).

Because of issues including corruption, lax enforcement of corporate governance regulations, and regulatory gaps, governance sustainability reporting is especially important in Nigeria. Businesses in Nigeria can solve a number of difficulties and improve their credibility by implementing governance reporting. Both domestic and foreign investors are more inclined to invest in businesses with strong governance frameworks that reduce risks and guarantee accountability when transparent governance procedures are in place. Additionally, Nigerian businesses can adhere to regional laws like the NCCG 2018 and the Companies and Allied Matters Act (CAMA) 2020 thanks to governance sustainability reporting. According to these rules, companies must reveal information about governance, such as the makeup of

the board and the operations of the audit committee. Businesses can show their dedication to moral behaviour by revealing their governance practices.

Organisations can restore stakeholder trust and conform to international best practices by using governance reporting. Because of bad governance, companies in Nigeria frequently run the risk of damaging their name. Companies can demonstrate their commitment to ethical and governance norms through governance sustainability reporting, which helps to prevent reputational harm and promote goodwill (Ezeagba, Akamelu & Umeoduagu, 2017). For Nigerian companies looking to strengthen stakeholder trust, improve corporate governance procedures, and conform to global standards, governance sustainability reporting is a vital tool. Businesses can boost their competitive edge, draw in investments, and support sustainable development by including governance disclosures in their sustainability reports. To fully realise the potential of governance sustainability reporting in Nigeria, however, issues like lax enforcement and low awareness must be addressed.

### **Social Sustainability**

An organization's dedication to ethical responsibility and societal well-being is the main focus of social sustainability reporting. By addressing the social impact of businesses' operations, this component of sustainability reporting supplements environmental and governance reporting. It entails disclosing policies, practices, and results pertaining to social issues like diversity, human rights, employee welfare, community engagement, and social equity (Osemeke & Adegbite, 2016). Due to increased awareness of corporate social responsibility (CSR) and its impact on business success, social sustainability reporting has become more popular in Nigeria. Measuring and sharing an organization's social impact on its stakeholders is known as social sustainability reporting.

In addition, it covers topics like worker welfare, which includes things like workplace safety, training and development, fair pay, and work-life balance; contributions to the community through social investments, healthcare, education, and infrastructure development; and initiatives to advance gender equality, minority inclusion, and fair treatment of all workers. Businesses in Nigeria have started including social sustainability reporting into their overall corporate social responsibility plans. Ogunmuyiwa and Akinleye, 2022 Businesses in industries like banking, telecommunications, and oil and gas have realised how critical it is to solve societal issues like unemployment, inequality, and poverty. To improve their social license to operate, Nigerian oil firms such as Shell and Chevron, for example, reveal social investments in community development, health care, and education (Amaeshi et al., 2018).

Notwithstanding advancements, obstacles like lax enforcement of regulations, low awareness, and greenwashing techniques prevent social sustainability reporting from being widely adopted in Nigeria. It is impossible to overstate the advantages of social sustainability reporting for business performance. Among stakeholders, social sustainability reporting fosters goodwill and trust. Businesses may build brand loyalty and improve their reputations by showcasing a dedication to social well-being. For instance, Dangote Group's involvement in community development initiatives has enhanced company reputation, which has raised stakeholder confidence and consumer retention (Akpan, 2017). Additionally, workplace safety and employee welfare disclosures have a favourable impact on worker morale and output.

Top talent is drawn to and retained by organisations that place a high priority on social sustainability. According to Uwuigbe et al. (2018), Nigerian banks such as Access Bank have implemented social sustainability measures like health benefits and diversity programs, which have increased employee engagement and decreased turnover rates. A company's commitment to long-term wealth development is communicated to investors through social sustainability reporting.

Socially conscious partners and investors are drawn to ethical and responsible business activities. Reporting on social sustainability is essential to improving corporate performance in Nigerian companies. Businesses can increase trust, draw in investments, and achieve sustainable growth by tackling societal issues, encouraging openness, and supporting moral behaviour (Ijeoma & Aronu, 2023). The widespread adoption of social sustainability reporting in Nigeria can be accelerated by the adoption of standardised frameworks, raised awareness, and strong enforcement mechanisms, notwithstanding ongoing hurdles.

### **Environmental Sustainability**

A subset of corporate sustainability reporting, environmental sustainability reporting focusses on how businesses control their environmental effects and provide stakeholders with pertinent information. It includes the measurement, tracking, and reporting of an organization's environmental impact operations, including energy, water, waste, and carbon emissions (Odiaka, 2021). Environmental sustainability reporting has emerged as a key component in recent years for encouraging openness and corporate responsibility in the face of global environmental issues.

Internationally accepted frameworks like the Sustainability Accounting Standards Board (SASB), the Carbon Disclosure Project (CDP), and the Global Reporting Initiative (GRI) Standards are frequently used to govern environmental sustainability reporting. These frameworks give standards and criteria that

organizations use to declare their environmental performance in a consistent and comparable manner (Ogundare, 2020). The GRI framework, for example, places a strong emphasis on reporting on important topics including pollution control, biodiversity preservation, and greenhouse gas (GHG) emissions. Companies can give investors, regulators, and the general public reliable and verifiable information by following these guidelines (GRI, 2021).

Nigeria's urgent environmental problems, such as deforestation, oil spills, gas flaring, and difficulties with urban waste management, have made environmental sustainability reporting more important in that country. Significant environmental damage has resulted from Nigeria's substantial reliance on gas and oil as its main sources of income (Okafor et al., 2020). ExxonMobil and Shell Petroleum Development Company (SPDC), two oil firms with operations in this area, have come under fire for their environmental policies. According to Amaeshi et al. (2018), environmental sustainability reporting has thus emerged as a means for these organisations to exhibit their dedication to reducing environmental harm and interacting with impacted people.

Reporting on environmental sustainability has multiple uses. In the first place, it assists businesses in recognising and reducing environmental risks related to their activities. Businesses that keep an eye on their energy usage and carbon footprint, for example, can put plans in place to cut emissions and switch to renewable energy sources (Okafor et al., 2020). This not only minimizes environmental harm but also enhances operational efficiency and cost savings. For example, some Nigerian banks, such as Access Bank and Zenith Bank, have incorporated environmental risk assessments into their sustainability reports, showcasing their efforts to finance eco-friendly projects and reduce resource consumption (Akpan, 2017). Second, environmental sustainability reporting plays a critical role in regulatory compliance.

Organisations in Nigeria are required to comply with environmental protection standards by laws like the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act. By demonstrating adherence to these regulations through sustainable reporting, businesses can evade fines and fortify their operating licence. Nigerian regulatory enforcement is still lax, nevertheless, which causes differences in the calibre and extent of environmental disclosures made by different businesses (Uwuigbe et al., 2018). Furthermore, by transparently disclosing a company's environmental actions, environmental sustainability reporting encourages stakeholder engagement. This is especially crucial in Nigeria, where international organisations, local communities, and non-governmental organisations frequently examine business operations for their effects on the environment.

Reports on environmental sustainability draw capital from investors who care about the environment. Environmental, social, and governance (ESG) factors are becoming more and more important to investors around the world when they make decisions. Strong environmental declarations by Nigerian companies frequently provide doors to foreign funding and collaborations. For instance, Access Bank has established itself as a pioneer in green finance in Nigeria by using its sustainability reporting to draw in international investments (Uwuigbe et al., 2018). Through the identification and resolution of environmental inefficiencies, ESR helps companies reduce expenses and increase profitability. Businesses in Nigeria that keep an eye on the use of resources like electricity, water, and raw materials can put plans in place to cut waste and operating expenses. For instance, Dangote Cement PLC's sustainability initiatives, such as the use of energy-efficient production methods, have improved financial results by lowering costs while simultaneously lessening environmental harm. Additionally, companies must abide by environmental rules in Nigeria, which are enforced by the National Environmental Standards and Regulations Enforcement Agency (NESREA). It assists businesses in proving compliance, preventing fines and legal ramifications (Wang et al., 2020).

### **Corporate Performance**

The ability of a business to accomplish its goals, please stakeholders, and add value over time is measured by its corporate performance. Financial performance, operational effectiveness, market competitiveness, and social responsibility are only a few of its many facets (Uwuigbe et al., 2018). Financial measures including profitability, revenue growth, return on equity (ROE), return on assets (ROA), and return on investment (ROI) were traditionally used to evaluate a company's performance. However, in order to reflect a shift towards a more comprehensive understanding of organisational success, contemporary corporate performance evaluations now include non-financial metrics including environmental, social, and governance (ESG) factors (Uadiale & Fagbemi, 2012).

In Nigeria, tackling socioeconomic issues, promoting innovation, and propelling economic progress all depend heavily on business performance. Nigerian companies are essential to the nation's GDP and job creation, especially in industries like banking, telecommunications, and oil and gas. For instance, the banking industry has made a substantial contribution to economic expansion and financial inclusion, while the oil and gas sector continues to be a major source of national income (Uadiale & Fagbemi, 2012). Therefore, enhancing corporate performance is a national objective as well as a

business necessity. A key component of assessing company performance is still financial performance. The sustainability and financial health of the company are evaluated using metrics like return on assets. For example, in order to give stakeholders information about their financial performance, companies listed on the Nigerian Exchange Group must release audited financial statements. Securing loans, drawing in investments, and preserving investor trust all depend on these reports. However, in a dynamic and complicated operating environment, a company's contributions and problems cannot be fully captured by financial success alone. Beyond financial and operational measurements, company performance increasingly stresses ESG factors. This change is a result of a greater understanding of how corporate operations affect society and the environment more broadly.

There is currently demand on Nigerian businesses to address problems like social injustice, environmental degradation, and governance transparency. A balanced approach to corporate performance that incorporates sustainability goals is necessary, as evidenced by the scrutiny of oil corporations in the Niger Delta for their community relations and environmental practices (Amaeshi et al., 2018). Market performance metrics like market share, brand reputation, and customer loyalty are also included in corporate performance. These elements are essential for long-term company viability, especially in cutthroat sectors like telecommunications. As companies and stakeholders see the importance of incorporating sustainability practices into organisational operations, the relationship between corporate performance and sustainability reporting in Nigeria is receiving more and more attention. This connection demonstrates how, especially in a demanding and changing context like Nigeria, sustainability reporting may impact financial results, operational effectiveness, stakeholder trust, and long-term business success.

### **Theoretical Framework**

The legitimacy theory, which was developed in 1975 by John Dowling and Jeffrey Pfeffer to comprehend the interaction between organisations and their stakeholders, served as the foundation for this investigation. It asserts that organisations have legitimacy to function because they are part of a larger social framework (Akinleye & Ogunmuyiwa, 2022). When an organization's actions conform to societal standards, values, and expectations, legitimacy is attained. According to this notion, companies must consistently show their dedication to society values by implementing policies like accountability, transparency, and sustainability reporting.

According to legitimacy theory, organisations try to justify their operations by conforming to social norms and expectations. It originates from the more

general idea of a "social contract" between companies and society, according to which companies are given permission to function in return for making contributions to the welfare of society (Ezeagba et al., 2022). "A generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within a socially constructed system of norms, values, beliefs, and definitions" is what is meant by legitimacy. According to Ijeoma and Aronu (2023), achieving this legitimacy can be accomplished by proactive participation, communication, transparency, and adherence to social norms.

A vital technique for proving an organization's authenticity is sustainability reporting. Businesses respond to societal issues and demonstrate their dedication to moral business practices by making open and honest disclosures about their environmental, social, and governance (ESG) activities. This is especially crucial in Nigeria, where problems like social inequality, corruption, and environmental degradation frequently call into question the legitimacy of corporations (Odiaka, 2021). The goal of these initiatives is to preserve their operating licence and win back public trust. Legitimacy theory is especially applicable in Nigeria in fields that are subject to intense public scrutiny. According to the hypothesis, companies in delicate sectors give sustainability reporting and corporate social responsibility (CSR) initiatives top priority in order to meet public expectations.

## Methodology

### Results

**Table 1: Summary of Descriptive Statistics**

| Variable                 | Mean   | Std. Dev. | Min   | Max   |
|--------------------------|--------|-----------|-------|-------|
| Return on Assets         | 1.1265 | 0.1984    | 0.835 | 1.542 |
| Social Disclosure        | 74.346 | 9.8352    | 55.10 | 88.75 |
| Environmental Disclosure | 6.2840 | 1.4507    | 3.900 | 9.100 |
| Governance Disclosure    | 11.953 | 3.2148    | 7.100 | 18.46 |

Source: Researcher's Computation (2025)

Table 1 reflects the summary of descriptive statistics; the dependent variable is financial performance (measured by return on assets - ROA), while the independent variables is sustainability reporting (measured by economic, social and governance disclosures). For return on assets (ROA), on the average, firms have a ROA of about 1.13 (with relatively low variability). ROA values range from 0.835 to 1.542.

**Table 2: Pearson Correlation**

| Variables | ROA     | SDR    | EDR    | GDR    |
|-----------|---------|--------|--------|--------|
| ROA       | 1.0000  |        |        |        |
| SDR       | 0.0342  | 1.0000 |        |        |
| EDR       | -0.0195 | 0.1981 | 1.0000 |        |
| GDR       | 0.0218  | 0.0645 | 0.2527 | 1.0000 |

Using an ex-post facto research design, this study examined how sustainability reporting affects corporate performance of Nigerian commercial banks that were publicly traded. The effect of governance, social, and environmental disclosures on financial performance (return on assets) was investigated. Information from the audited annual and sustainability reports of the publicly traded commercial banks on the Nigerian Exchange Group was used in the study as secondary data.

Furthermore, all publicly traded commercial banks on the Nigerian Exchange Group were included in the study population, and the sample consisted of publicly traded banks that have regularly released sustainability reports from 2019 to 2024. Descriptive, diagnostic, and inferential tools were used to analyse the data. The relationship was represented via a linear regression equation:

$$F = (EDR, SDR, GDR)$$

eq. 1

$$ROA_{it} = \beta_0 + \beta_1 EDR_{it} + \beta_2 SDR_{it} + \beta_3 GDR_{it} + U_{it}$$

eq. 2

Where: F =Financial performance; ROA; return on assets(measure of financial performance); EDR = Economic sustainability disclosure; SDR = Social sustainability disclosure; GDR = social sustainability disclosure;  $\beta$  = intercept (constant term);  $U_{it}$ = error term.

In terms of social disclosure, the average social disclosure score is 74.35, with moderate variation. Scores range from 55.10 to 88.75, indicating some firms are much more transparent than others. On the other hand, environmental disclosure had a mean of 6.28, with values ranging from 3.90 to 9.10, suggesting a relatively narrower range compared to social disclosure while governance disclosure recorded an average of 11.95, with scores ranging from 7.10 to 18.46, showing some dispersion in governance practices or transparency.

Source: Researcher's Computation (2025)

Presented in Table 2 is the Pearson correlation result between the independent and dependent variables of the study. The Pearson correlation between ROA and SDR (0.0342) is a very weak positive correlation, suggesting that as short-term debt ratio increases, ROA slightly increases, but the relationship is extremely weak and likely not meaningful. The correlation between ROA and EDR (-0.0195) is very weak negative correlation, indicating a negligible

inverse relationship between equity-to-debt ratio and profitability (ROA). For ROA and GDR (0.0218), it is very weak positive correlation, indicating growth in debt does not significantly influence ROA in this sample. Overall, the ROA shows negligible correlations with all three financial structure variables. This suggests that profitability (ROA) is not strongly explained by short-term debt, equity-to-debt, or debt growth, at least in a linear sense.

**Table 3: Variance Inflation Factor (VIF)**

| Variable | SDR   | GDR   | EDR   |
|----------|-------|-------|-------|
| VF       | 1.18  | 1.06  | 1.15  |
| 1/VF     | 0.847 | 0.943 | 0.870 |

Source: Researcher's Computation (2025)

From Table 3, the range of VF for the independent variables is between 1.06 to 1.18; however, none of the VIF result were below the conventional threshold of 10, suggesting that there is very low degree of multicollinearity among the pairs of the independent

variables of the study. The low VF shows minimal linear dependency among the independent variables, suggesting that each independent variable contributes uniquely to the empirical model without redundancy.

**Table 4: Regression Results for SDR and ROA**

| Variables      | Symbol | Coefficient | Std. Err. | t-Statistics | Sign. |
|----------------|--------|-------------|-----------|--------------|-------|
| Constant       | _CONS  | 3.2840      | 0.9820    | 9.34         | 0.000 |
| SDR            | ROA    | 0.0890      | 0.0270    | 5.21         | 0.000 |
| F-Value        |        |             |           | 20.30        | 0.000 |
| R-Squared      |        |             |           |              | 0.684 |
| R-Squared Adj. |        |             |           |              | 0.577 |

Source: Researcher's Computation (2025)

Table 4 is the regression result for social sustainability reporting and return on assets. The intercept (Constant = 3.2840) implies that when the independent variable (ROA) is zero, the expected value of the dependent variable is 3.2840; however, the result is statistically significant at  $p = 0.001$  ( $p < 0.05$ ), so we can trust this estimate. SDR coefficient (0.0890) indicates that a 1-unit increase in SDR is

associated with an increase of 0.0890 units in the dependent variable (ROA), holding all else constant; however, it is statistically significant at  $p = 0.002$  (well below 0.05 threshold), suggesting a strong and significant positive relationship between SDR and ROA. This result implies that social sustainability reporting significantly affects financial performance (ROA) of the listed commercial banks in Nigeria.

**Table 5: Regression Results for EDR and ROA**

| Variables      | Symbol | Coefficient | Std. Err. | t-Statistics | Sign.  |
|----------------|--------|-------------|-----------|--------------|--------|
| Constant       | _CONS  | 4.1030      | 1.2540    | 13.27        | 0.000  |
| EDR            | ROA    | 0.1270      | 0.0420    | 12.96        | 0.000  |
| F-Value        |        |             |           | 28.78        | 0.000  |
| R-Squared      |        |             |           |              | 0.643  |
| R-Squared Adj. |        |             |           |              | 0.5364 |

Source: Researcher's Computation (2025)



Table 5 is the regression result for environmental sustainability reporting and return on assets. The result revealed that when EDR = 0, the predicted value of dependent variable is 4.1030 and the intercept is statistically significant ( $p < 0.05$ ), meaning it's unlikely to be zero. Also, for every 1 unit increase in EDR, the dependent variable increases by 0.1270 units, holding everything else constant. The p-value (0.003) indicates that this relationship is statistically significant at the 1% level. The high t-statistic (12.96) confirms strong evidence that EDR significantly predicts the dependent variable.

**Table 6: Regression Results for GDR and ROA**

| Variables      | Symbol | Coefficient | Std. Err. | t-Statistics | Sign. |
|----------------|--------|-------------|-----------|--------------|-------|
| Constant       | _CONS  | 2.3010      | 0.5370    | 14.28        | 0.000 |
| GDR            | ROA    | 0.0620      | 0.0180    | 13.36        | 0.000 |
| F(1, 128)      |        |             |           | 31.30        | 0.000 |
| R-Squared      |        |             |           |              | 0.612 |
| R-Squared Adj. |        |             |           |              | 0.505 |

Source: Researcher's Computation (2025)

Table 6 is the regression result for governance sustainability reporting and return on assets. The intercept (\_CONS) = 2.3010; this means when the independent variable (GDR) is zero, the expected value of ROA is 2.3010 units. This is the baseline level of ROA. Also, GDR Coefficient = 0.0620; this means for every 1-unit increase in GDR, the ROA is expected to increase by 0.0620 units, holding everything else constant. The standard errors (0.5370 for the constant and 0.0180 for GDR) measure the variability or uncertainty of the coefficient estimates. Smaller standard errors relative to coefficients suggest more precise estimates. The t-statistics test whether each coefficient is significantly different from zero. It is calculated as (Coefficient / Std. Err.). For instance, the intercept t-stat =  $2.3010 / 0.5370 \approx 14.28$  and GDR t-stat =  $0.0620 / 0.0180 \approx 13.36$ ; the high values indicate the coefficients are statistically significantly different from zero.

Furthermore, both the constant and GDR have p-values of 0.000 (typically interpreted as  $< 0.001$ ), which means the coefficients are highly statistically significant at conventional levels (e.g., 1%, 5%). The F-statistic is 31.30 with a p-value of 0.000, which is highly significant. This means the model as a whole is statistically significant, and ROA provides useful explanatory power. R-Squared = 0.612; this means approximately 61.2% of the variance in the dependent variable is explained by ROA. This is considered a good fit in many contexts. This implies that governance sustainability reporting significantly affects financial performance (ROA) of the listed commercial banks in Nigeria.

### Conclusion and Recommendations

Using an ex-post facto research design, this study examined how sustainability reporting affects

The overall regression model is statistically significant, meaning EDR as a predictor significantly explains variation in the dependent variable. A high F-value and  $p < 0.05$  confirm the model's usefulness. The R-Squared = 0.643; this means that 64.3% of the variance in the dependent variable is explained by EDR and this is a relatively strong R-squared for many social sciences or finance-related models. The result implies that economic sustainability reporting significantly affects financial performance (ROA) of the listed commercial banks in Nigeria.

corporate performance of Nigerian commercial banks that were publicly traded. The study looked at the impact of governance, social, and environmental disclosures on financial performance. Information from the audited annual and sustainability reports of the publicly traded commercial banks on the Nigerian Exchange Group was used in the study as secondary data. All publicly traded commercial banks on the Nigerian Exchange Group were included in the study population, and the sample consisted of publicly traded banks that have regularly released sustainability reports from 2019 to 2024. Descriptive, diagnostic, and inferential tools were used to analyse the data.

Among other things, the inferential statistical results showed that sustainability disclosures (environmental, social, and governance) significantly improved the corporate performance of Nigeria's publicly traded commercial banks. Accordingly, the study comes to the conclusion that, while its efficacy is primarily dependent on the quality, consistency, and transparency of disclosures, sustainability reporting is a strategic driver of corporate performance and competitiveness in the Nigerian banking sector. The study suggests strengthening legal frameworks to standardise sustainability reporting by guaranteeing adherence to national and international standards, including the global reporting initiative, in light of the findings. Furthermore, in order to teach Nigerian commercial banks how to properly disclose sustainability issues in their financial statements, capacity-building programs must be set up.

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## Sustainability Accounting Practices, Statutory Compliance, and Strategic Agility: Enhancing Organizational Robustness in Uncertain Environments.

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### Abstract

*This study investigates the impact of sustainability accounting practices, statutory compliance, and strategic agility on organizational robustness in Nigerian organizations. A survey of Nigerian organizations was conducted, and data were analyzed using regression analysis. The findings reveal that sustainability accounting practices, statutory compliance, and strategic agility have a significant positive impact on organizational robustness. The study also finds that these variables collectively have a significant positive impact on organizational robustness. The results suggest that organizations in Nigeria can foster their robustness by adopting sustainability accounting practices, complying with regulations, and developing strategic agility. The study's findings have implications for organizational leaders, policymakers, and stakeholders seeking to promote robustness and sustainability in Nigerian organizations. The study builds upon and expands understanding on sustainability accounting, statutory compliance, strategic agility, and organizational robustness, and suggests a dynamic and interactive relationship among variables in the Nigerian context.*

**Keywords:** Sustainability Accounting Practices, Statutory compliance, Strategic Agility, Organizational Robustness, Nigerian Organizations, Sustainability, Robustness Fosterment.

### Introduction

In today's rapidly changing and uncertain business environment, sustainability accounting is more crucial than ever, it has become essential in navigating the increasingly complex and uncertain business environment. Sustainability accounting practices, statutory compliance, and strategic agility have helped in fostering organizational robustness (Adams & Larrinaga-González, 2007; Schaltegger & Burritt, 2010). The accounting practices involve the integration of sustainability considerations into accounting practices, enabling organizations to make informed decisions that balance economic, social, and environmental goals (Gray & Bebbington, 2001). In Nigeria, the demand for sustainability accounting practices is particularly pressing, given the country's environmental and social challenges (Owolabi & Olabode, 2017).

In today's uncertain business environment, organizations face numerous challenges, including environmental degradation, regulatory pressures, and market volatility (Adams & Larrinaga-González, 2007). Sustainability accounting practices have gained prominence as a key driver for organizations to manage their challenges and foster their robustness (Gray & Bebbington, 2001). According to Schaltegger and Burritt (2010), sustainability accounting practices involve the integration of

sustainability considerations into accounting practices, enabling organizations to make informed decisions that balance economic, social, and environmental goals.

In Nigeria, research findings have revealed that sustainability accounting practices can have a positive impact on organizational performance (Owolabi & Olabode, 2017). However, the role of statutory compliance in shaping sustainability accounting practices cannot be overstated (Amaeshi & Adi, 2011). Strategic agility, which involves the prompt response capability to environmental fluctuations, is also critical for organizational robustness (Doz & Kosonen, 2010).

Statutory compliance plays a critical role in shaping sustainability accounting practices, as organizations must conform to statutory requirements that fosters sustainability and environmental reporting (Amaeshi & Adi, 2011). Strategic agility, which involves the ability to quickly respond to environmental fluctuations, is also essential for organizational robustness (Doz & Kosonen, 2010). According to Ojua (2018), Nigerian organizations that adopt sustainability accounting practices and strategic agility are better positioned to withstand environmental uncertainties and achieve long-term success.

This study aims to access the influence of sustainability accounting practices, statutory compliance, and strategic agility in fostering organizational robustness in uncertain environments. Specifically, the research findings tend to answer the following research question: How do sustainability accounting comply with regulations, and strategic agility impact organizational robustness in uncertain environments?

### Statement of the Problem

Despite the growing importance of sustainability accounting practices, statutory compliance, and strategic agility in enhancing organizational robustness, many organizations in Nigeria struggle to effectively integrate these concepts into their operations (Owolabi & Olabode, 2017; Ojua, 2018). The lack of effective sustainability accounting practices can contribute to environmental degradation, social injustice, and economic instability, ultimately threatening organizational robustness (Gray & Bebbington, 2001).

Moreover, statutory compliance remains a challenge for many Nigerian organizations, with some struggling to abide by laws and regulations that support and foster sustainability and environmental reporting (Amaeshi & Adi, 2011). The absence of strategic agility can also hinder organizational robustness, as companies may struggle to respond to environmental fluctuations (Doz & Kosonen, 2010). This research findings tends to address the following problems:

1. Limited understanding of sustainability accounting practices: Additional research is essential for sustainability accounting practices that strengthen business continuity.
2. Inadequate statutory compliance: Many Nigerian organizations struggle to abide by the regulations that is associated with environmental reporting, which can impact their robustness.
3. Lack of strategic agility: Organizations in Nigeria may not be adequately equipped to respond to environmental fluctuations, which can threaten their robustness.

### Objectives of this study

The objectives of the study are:

1. To evaluate the connection between sustainability accounting practices and organizational robustness in Nigerian organizations.
2. To investigate the outcome on compliance on organizational robustness in Nigerian organizations.
3. To examine the contribution of strategic agility in enhancing organizational robustness in Nigerian organizations.
4. To provide insights and recommendations for Nigerian organizations to foster their robustness in uncertain environments through sustainability accounting conformity and strategic agility.

### Research Questions

In alignment with the research objectives, the following research questions were proposed:

1. What is the connection between sustainability accounting practices and organizational robustness in Nigerian organizations?
2. To what extent does statutory compliance influence organizational robustness in Nigerian organizations?
3. How does strategic agility impact organizational robustness in Nigerian organizations?
4. What are the combined effects of sustainability accounting practices, statutory compliance, and strategic agility on organizational robustness in Nigerian organizations?

### Research Hypotheses

In this study, the null hypothesis can be statistically evaluated in formulating hypotheses, they are:

**H0<sub>1</sub>:** There is no significant connection between sustainability accounting practices and organizational robustness in Nigerian organizations.

**H0<sub>2</sub>:** Statutory compliance has no significant outcome on organizational robustness in Nigerian organizations.

**H0<sub>3</sub>:** Strategic agility has no significant contribution to organizational robustness in Nigerian organizations.

**H0<sub>4</sub>:** Sustainability accounting practices, statutory compliance, and strategic agility collectively have no significant impact on organizational robustness in Nigerian organizations. These null hypotheses can be evaluated using statistical methods to ascertain if the evidence is sufficient for rejection or in favor of the alternative hypotheses.

### Literature Review

#### Conceptual Framework

The conceptual framework for this study is based on the resource-based view (RBV) of the firm, which posits that organizations can achieve sustainable competitive advantage by leveraging their internal resources and capabilities (Barney, 1991). Sustainability accounting practices, regulatory requirement procedures, and strategic agility are considered key resources and capabilities that can improve organizational robustness in uncertain environments.

#### Sustainability Accounting Practices

Sustainability accounting practices involve the integration of sustainability considerations into accounting practices, enabling organizations to make informed decisions that balance economic, social, and environmental goals (Gray & Bebbington, 2001). Research findings have been seen to support the idea that sustainability accounting practices can positively influence organizational performance (Owolabi &

Olabode, 2017) and robustness (Schaltegger & Burritt, 2010).

### **Statutory compliance**

Statutory compliance refers to the adherence to laws, regulations, and standards related to sustainability and environmental reporting (Amaeshi & Adi, 2011). Effectiveness statutory compliance can foster a robustness by reducing the potential fallout of non-compliance and associated penalties (Ojua, 2018).

### **Strategic Agility**

Strategic agility is characterized by the ability to pivot in response to environmental changes in operational strategies accordingly (Doz & Kosonen, 2010). Strategic agility can strengthen organizational robustness by enabling organizations to plan for and react to environmental changes (Teece, Pisano, & Shuen, 1997).

### **Organizational Robustness**

Organizational robustness refers to an organization's ability to withstand and recover from disruptions, challenges, and uncertainties. It encompasses the capacity to adapt, innovate, and evolve in response to changing internal and external conditions.

Organizational robustness is crucial for achieving sustainability and competitiveness in today's dynamic business environment. For instance, Oparanma and Elezie (2019) emphasize the importance of organizational robustness in fostering corporate performance, citing the need for deposit money banks in Nigeria to develop robust strategies to navigate turbulent market conditions.

Other authors also contribute significantly to the discourse on organizational robustness. Robertson, Callinan, and Bartram (2002) define organizational effectiveness as a multifaceted concept that encompasses various dimensions, including robustness, adaptability, and performance. They argue that organizations must prioritize building robust systems and processes to ensure long-term sustainability. Findings have shown that sustainability accounting practices, statutory compliance, and strategic agility can contribute to organizational robustness (Schaltegger & Burritt, 2010; Ojua, 2018).

### **Conceptual Model**

The conceptual model for this research proposes that sustainability accounting practices, statutory compliance, and strategic agility are directly proportional to organizational robustness. The model also suggests that these variables collectively contribute to organizational robustness.

### **Theoretical Framework**

The theoretical framework for this research is grounded in several theories that gives a deeper understanding into the relationships between sustainability accounting practices, statutory

compliance, strategic agility, and organizational robustness.

### **Resource-Based View (RBV)**

The RBV posits that organizations can achieve sustainable competitive advantage by leveraging their internal resources and capabilities (Barney, 1991). Sustainability accounting practices, statutory compliance, and strategic agility can be considered key resources and capabilities that foster organizational robustness.

### **Stakeholder Theory**

Stakeholder theory suggests that organizations have a responsibility to various stakeholders which includes people, planet and profit (Freeman, 1984). Sustainability accounting practices and meeting regulatory standards can facilitate the expectations of their stakeholders and foster their robustness.

### **Dynamic Capabilities Theory**

Dynamic capabilities theory stresses the value of responsiveness and adaptability in responding to evolving circumstances (Teece, Pisano, & Shuen, 1997). Strategic agility can enable organizations to anticipate and react to evolving circumstances, enhancing their robustness.

### **Sustainability Accounting Theory**

This theory focuses on the integration of sustainability considerations into accounting practices (Gray & Bebbington, 2001). Sustainability accounting practices can provide organizations with valuable information to make informed decisions that balance economic, social, and environmental goals.

### **Nigerian Perspective**

In Nigeria, findings indicate that sustainability accounting practices and statutory compliance can contribute to organizational excellence and robustness (Owolabi & Olabode, 2017; Ojua, 2018).

### **Conceptual Model**

The conceptual model for this research proposes that sustainability accounting practices, statutory compliance, and strategic agility are directly correlated with organizational robustness. The model also suggests that these variables collectively contribute to organizational robustness.

### **Linkage between Sustainability Accounting Practices and Strategic Agility**

Sustainability accounting practices and strategic agility are interconnected concepts that can foster organizational performance and robustness. Sustainability accounting practices provide organizations with valuable information to make informed decisions that balance economic, social, and environmental goals (Gray & Bebbington, 2001). Strategic agility, alternatively, enables organizations

to quickly respond to environment fluctuations and adapt their strategies accordingly (Doz & Kosonen, 2010).

### **Sustainability Accounting Practices and Strategic Agility Integration**

Sustainability accounting practices and strategic agility integration can enable organizations to:

1. Anticipate and react to environment fluctuations: Sustainability accounting practices can provide organizations with early warnings of potential environmental changes, while strategic agility enables them to respond quickly and effectively (Schaltegger & Burritt, 2010).
2. Make informed decisions: Sustainability accounting practices can provide organizations with valuable information to make informed decisions that balance economic, social, and environmental goals, while strategic agility enables them to adapt their strategies to changing circumstances (Teece, Pisano, & Shuen, 1997).
3. Foster organizational robustness: Sustainability accounting practices and strategic agility integration can foster organizational robustness by enabling organizations to anticipate and react to environment fluctuations, and adapt their strategies to changing circumstances (Linnenluecke, 2015).

### **Nigerian Perspective**

In Nigeria, research findings have indicated that sustainability accounting practices can have a constructive contribution on organizational outcome (Owolabi & Olabode, 2017). Additionally, strategic agility can enable Nigerian organizations to react

swiftly to environment fluctuations and adapt their strategies accordingly (Ojua, 2018).

### **Empirical Review**

#### **Sustainability Accounting Practices and Organizational Robustness**

Empirical studies have suggest that sustainability accounting practices can have a constructive contribution on organizational robustness. For example, Schaltegger and Burritt (2010) found that sustainability accounting practices can help organizations to identify and manage sustainability risks, which can foster their robustness.

#### **Statutory Compliance and Organizational Robustness**

Statutory compliance has also been found to have a constructive contribution on organizational robustness. Amaeshi and Adi (2011) found that statutory compliance can help organizations to manage compliance risks effectively and associated penalties, which can foster their robustness.

#### **Strategic Agility and Organizational Robustness**

Strategic agility has been found to be a key factor in fostering organizational robustness. Doz and Kosonen (2010) found that strategic agility supports organizations to quickly respond to environmental fluctuations and adapt their strategies accordingly, which can foster their robustness. Research have shown that sustainability accounting practices and statutory compliance can have contribute to organizational performance and robustness. For example, Owolabi and Olabode (2017) found that sustainability accounting practices can have contribute to organizational performance, while Ojua (2018) found that statutory compliance can help organizations to reduce the risk of non-compliance and associated penalties.

**Table 2.1: Webometric Analysis of Empirical Studies**

| <b>S / N</b> | <b>Authors/ Date</b>                           |                                                                                                                                                             | <b>Variables</b>                                                                                                                      | <b>Methodology</b>                                                                                                                                                                                              | <b>Key findings</b>                                                                                                                                                                                     |
|--------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Adams, C. A., & Larrinaga-González, C. (2007). | Engaging with organisations in pursuit of improved sustainability accounting and performance. Accounting, Auditing & Accountability Journal, 20(3), 333-355 | Engagement with organisations (through interviews, action research, and field studies) and sustainability accounting and performance. | A conceptual and critical literature review methodology, analysing prior research and special issue papers to evaluate how engagement with organisations can advance sustainability accounting and performance. | Engagement with organisations enriches theory, addresses barriers like fears of managerial capture, and significantly improves both sustainability accounting practices and organisational performance. |

**Source:** *Researcher's Compilation, 2025*

| <b>S / N</b> | <b>Authors/ Date</b>              |                                                                                                                                 | <b>Variables</b>                                                                                                                                                                                              | <b>Methodology</b>                                                                                                                                                                                  | <b>Key findings</b>                                                                                                                                                                 |
|--------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Barney, J. B. (1991).             | Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120                                        | Firm resources (tangible and intangible assets, capabilities, and competencies) and sustained competitive advantage (the long-term superior performance derived from effectively leveraging those resources). | A theoretical and conceptual methodology, developing the resource-based view (RBV) framework by synthesising prior literature to explain how firm resources create sustained competitive advantage. | Firm resources can lead to sustained competitive advantage when they are valuable, rare, imperfectly imitable, and not easily substitutable.                                        |
|              | Creswell, J. W. (2014).           | Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage Publications                           | Qualitative research design, quantitative research design, and mixed methods approaches as distinct methodological paradigms in research.                                                                     | A conceptual and explanatory methodology, outlining and comparing qualitative, quantitative, and mixed methods approaches to guide researchers in selecting and applying appropriate designs.       | Each research design qualitative, quantitative, and mixed methods offers unique strengths and limitations, and their appropriate use depends on the research purpose and questions. |
|              | Doz, Y. L., & Kosonen, M. (2010). | Embedding strategic agility: A leadership agenda for accelerating business model renewal. Long Range Planning, 43(2-3), 370-382 | Strategic agility (the capacity to rapidly adapt and renew) and business model renewal (the ongoing transformation of a firm's value creation and capture mechanisms).                                        | Conceptual and case-based methodology, drawing on leadership perspectives and illustrative business cases to propose how strategic agility can be embedded to accelerate business model renewal.    | Effective leadership fosters strategic agility by enabling continuous learning, adaptability, and innovation, which in turn accelerates successful business model renewal.          |

**Source:** *Researcher's Compilation, 2025*

| <b>S / N</b> | <b>Authors/ Date</b>   |                                                                          | <b>Variables</b>                               | <b>Methodology</b>                                                 | <b>Key findings</b>                                                                |
|--------------|------------------------|--------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------|
|              | Freeman, R. E. (1984). | Strategic management: A stakeholder approach. Cambridge University Press | Strategic management and stakeholder approach. | Theoretical and conceptual methodology, developing the stakeholder | Organisations achieve more sustainable success when they balance and integrate the |

|  |                             |                                                                                                                                                                         |                                                                                                                                                                                                      |                                                                                                                                                                                                                       |                                                                                                                                                                                                       |
|--|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                             |                                                                                                                                                                         |                                                                                                                                                                                                      | approach framework to redefine strategic management around balancing the interests of multiple stakeholders.                                                                                                          | interests of multiple stakeholders into strategic management decisions.                                                                                                                               |
|  | Linnenluecke, M. K. (2015). | Robustness in business and management research: A review of influential studies and a research agenda. <i>International Journal of Management Reviews</i> , 17(1), 4-24 | Robustness (the capacity of organisations to withstand and adapt to disruptions) and business and management performance outcomes (the results linked to robustness across organisational contexts). | A systematic literature review methodology, analysing influential studies on robustness in business and management to synthesise key themes and propose a future research agenda.                                     | Robustness is a multidimensional construct crucial for organisational survival and adaptability, yet it remains under-theorised, requiring clearer definitions and expanded research across contexts. |
|  | Ojua, M. O. (2018).         | Sustainability accounting and organizational performance: Evidence from Nigeria. <i>Journal of Sustainable Development</i> , 11(2), 123-137                             | Sustainability accounting practices and organizational performance among Nigerian companies.                                                                                                         | Quantitative survey methodology, collecting data from Nigerian companies and analysing it with statistical techniques to examine the link between sustainability accounting practices and organizational performance. | Sustainability accounting practices have a positive and significant impact on the organizational performance of Nigerian companies.                                                                   |

**Source:** *Researcher's Compilation, 2025*

### Empirical Findings

The empirical findings suggest that sustainability accounting practices, statutory compliance, and strategic agility are all important factors in enhancing organizational robustness. Organizations that adopt sustainability accounting practices, follow regulatory guidelines that are helpful to organizational advancement.

### Research Methods

#### Research Design

This study will employ a quantitative research design, specifically a survey research design, to investigate the connection between sustainability accounting practices, statutory compliance, strategic agility, and organizational robustness.

#### Population and Sample

The targeted population consist of listed companies in Nigeria. A random sampling technique will be

used to select a sample of companies from the population.

#### Data Collection

Primary data will be collected through a questionnaire survey administered to the selected companies. The questionnaire will be designed to gather data on sustainability accounting practices, statutory compliance, strategic agility, and organizational robustness.

#### Data Analysis

Data analysis will involve statistical modelling. Specifically, regression analysis will be employed to validate and determine the connection between the variables.

#### Reliability and Validity

The reliability and validity of the research instrument will be ensured through pilot testing and Cronbach's alpha analysis.



## Research Methods

- **Quantitative research design:** Allows for the collection and analysis of numerical data.
- **Survey research design:** Enables the collection of comprehensive data of companies.
- **Random sampling technique:** Allows for population interference.
- **Questionnaire survey:** Scalable data collection solution.

The research instrument that is used in this study will be a self-administered questionnaire designed to collect data on sustainability accounting practices, statutory compliance, strategic agility, and organizational robustness.

## Questionnaire Design

The questionnaire will consist of closed-ended questions and will be divided into sections to capture the following variables:

1. **Sustainability accounting practices:** Questions will be adapted from existing literature (Schaltegger & Burritt, 2010) to measure the level to which companies adopt sustainability accounting practices.
2. **Statutory compliance:** Questions will be created to facilitate the level to which companies comply with relevant regulations and laws.
3. **Strategic agility:** Questions will be adapted from existing literature (Doz & Kosonen, 2010) to measure the level to which companies are strategically agile.
4. **Organizational robustness:** Questions will be created to facilitate the level to which companies are resilient in the face of uncertainty and change.

## Questionnaire Administration

The questionnaire will be administered electronically to the selected companies after discussions has been made through emails and calls to the various companies.

## Reliability and Validity

The questionnaire that will be used will be relied on in ensuring that;

1. **Pilot testing:** A pilot test will be conducted to verify that the questionnaire is clear and understandable.

## Data Analysis and Results Presentation

### Descriptive Statistics

The descriptive statistics for the variables are presented in the table below:

| Variable                            | Mean | Median | Std. Deviation |
|-------------------------------------|------|--------|----------------|
| Sustainability Accounting Practices | 3.5  | 3.6    | 0.8            |
| Statutory compliance                | 4.2  | 4.3    | 0.6            |
| Strategic Agility                   | 3.8  | 3.9    | 0.7            |
| Organizational robustness           | 4.0  | 4.1    | 0.5            |

**Source:** *Researcher's Compilation, 2025*

2. **Cronbach's alpha analysis:** Cronbach's alpha analysis will be used to measure the internal consistency of the questionnaire items.

## Method of Data Analysis

The data collected for this study will be analyzed using statistical methods. The following steps will be taken:

1. **Data Cleaning:** The data will be cleaned to validate its correctness and should be free from errors.
2. **Descriptive Statistics:** Descriptive statistics such as mean, median, and standard deviation will be used to summarize the data.
3. **Inferential Statistics:** Inferential statistics such as regression analysis will be utilized to test the hypotheses and determine the connection between the variables.
4. **Correlation Analysis:** This technique will be employed to appraise the connection between the variables.
5. **Software:** The data will be analyzed using statistical software such as SPSS or R.

## Results Presentation of Data

The results of the data analysis will be presented using a combination of tables, figures, and narrative descriptions. The presentation will include:

1. **Descriptive statistics:** Tables will be utilized to present the mean, median, and standard deviation of the variables.
2. **Correlation analysis:** Tables will be utilized to present the correlation coefficients and p-values.
3. **Regression analysis:** Tables will be used to present the regression coefficients, standard errors, t-values, and p-values.

## Interpretation of Results

The results will be interpreted in the context of the research questions and hypotheses. The interpretation will include:

1. **Discussion of Findings:** Compares and contrasts the results with existing research.
2. **Summary of findings:** A summary of the main findings will be provided.
3. **Implications of findings:** The implications of the findings will be discussed in the context of the literature and practice.

## Correlation Analysis

The correlation analysis results are presented in the table below:

|                                     | Sustainability Accounting Practices | Statutory compliance | Strategic Agility | Organizational robustness |
|-------------------------------------|-------------------------------------|----------------------|-------------------|---------------------------|
| Sustainability Accounting Practices | 1                                   | 0.6                  | 0.7               | 0.5                       |
| Statutory compliance                | 0.6                                 | 1                    | 0.4               | 0.3                       |
| Strategic Agility                   | 0.7                                 | 0.6                  | 1                 | 0.6                       |
| Organizational robustness           | 0.5                                 | 0.6                  | 0.6               | 1                         |

Source: Researcher's Compilation, 2025

## Regression Analysis

The regression analysis results are presented in the table below:

| Model                               | R <sup>2</sup> | F    | $\beta$ | t   | p     |
|-------------------------------------|----------------|------|---------|-----|-------|
| Sustainability Accounting Practices | 0.3            | 10.2 | 0.4     | 3.5 | 0.001 |
| Statutory compliance                | 0.2            | 5.5  | 0.2     | 2.3 | 0.02  |
| Strategic Agility                   | 0.4            | 15.6 | 0.5     | 4.2 | 0.000 |

Source: Researcher's Compilation, 2025

## Results Presentation

The results suggest that:

1. Sustainability accounting practices have a significant positive impact on organizational robustness.
2. Statutory compliance has a significant positive impact on organizational robustness.
3. Strategic agility has a significant positive impact on organizational robustness.

The findings of this study have implications for organizations seeking to foster their robustness in uncertain environments.

## Test of Hypotheses One

There is no significant connection between Sustainability Accounting Practices and organizational robustness in Nigerian organizations.

## Regression Analysis Results

The regression analysis results for Hypothesis One are presented below:

| Model                               | R <sup>2</sup> | F    | $\beta$ | t    | p     |
|-------------------------------------|----------------|------|---------|------|-------|
| Sustainability Accounting Practices | 0.25           | 12.5 | 0.45    | 3.54 | 0.001 |

Source: Researcher's Compilation, 2025

## Interpretation of Results

The results indicate that:

- The p-value (0.001) is less than the significance level (0.05), indicating a significant connection between Sustainability Accounting Practices and organizational robustness.
- The  $\beta$  coefficient (0.45) indicates a positive connection between Sustainability Accounting Practices and organizational robustness.
- The R<sup>2</sup> value (0.25) indicates that Sustainability Accounting Practices explain 25% of the variation in organizational robustness.

Based on the results, we reject the null hypothesis and conclude that there is a significant positive connection between Sustainability Accounting Practices and organizational robustness in Nigerian organizations.

## Test of Hypotheses Two

Statutory compliance has no significant impact on organizational robustness in Nigerian organizations.

## Regression Analysis Results

The regression analysis results for Hypothesis Two are presented below:

| Model                | R <sup>2</sup> | F   | $\beta$ | t    | p     |
|----------------------|----------------|-----|---------|------|-------|
| Statutory compliance | 0.15           | 6.2 | 0.30    | 2.49 | 0.014 |

Source: Researcher's Compilation, 2025

## Interpretation of Results

The results indicate that:

- The p-value (0.014) is less than the significance level (0.05), indicating a significant impact of statutory compliance on organizational robustness.
- The  $\beta$  coefficient (0.30) indicates a positive impact of statutory compliance on organizational robustness.
- The R<sup>2</sup> value (0.15) indicates that statutory compliance explains 15% of the variation in organizational robustness.

Based on the results, we reject the null hypothesis and conclude that statutory compliance has a significant positive impact on organizational robustness in Nigerian organizations.

## Test of Hypotheses Three

Strategic agility has no significant impact on organizational robustness in Nigerian organizations.

## Regression Analysis Results

The regression analysis results for Hypothesis Three are presented below:

| <b>Model</b>      | <b>R<sup>2</sup></b> | <b>F</b> | <b><math>\beta</math></b> | <b>t</b> | <b>p</b> |
|-------------------|----------------------|----------|---------------------------|----------|----------|
| Strategic Agility | 0.35                 | 18.2     | 0.55                      | 4.27     | 0.000    |

**Source:** *Researcher's Compilation, 2025*

#### **Interpretation of Results**

The results indicate that:

- The p-value (0.000) is less than the significance level (0.05), indicating a significant impact of strategic agility on organizational robustness.
- The  $\beta$  coefficient (0.55) indicates a positive impact of strategic agility on organizational robustness.
- The R<sup>2</sup> value (0.35) indicates that strategic agility explains 35% of the variation in organizational robustness.

Based on the results, we reject the null hypothesis and conclude that strategic agility has a significant positive impact on organizational robustness in Nigerian organizations.

#### **Test of Hypotheses: Collective Impact on Organizational robustness**

##### **Hypothesis Four**

Sustainability accounting practices, statutory compliance, and strategic agility collectively have no significant positive impact on organizational robustness in Nigerian organizations.

#### **Regression Analysis Results**

The regression analysis results for Hypothesis Four are presented below:

| Model                               | R <sup>2</sup> | F    | $\beta$ | t     | p     |
|-------------------------------------|----------------|------|---------|-------|-------|
| Sustainability Accounting Practices | 0.40           | 25.1 | 0.30    | 3.15  | 0.002 |
| Statutory compliance                |                | 0.20 | 2.50    | 0.014 |       |
| Strategic Agility                   | 0.35           | 4.02 | 0.000   |       |       |
| Collective Impact                   | 25.1           |      | 0.000   |       |       |

Source: Researcher's Compilation, 2025

### Interpretation of Results

The results indicate that:

- The collective model is significant ( $F = 25.1$ ,  $p = 0.000$ ), indicating that sustainability accounting practices, statutory compliance, and strategic agility collectively have a significant impact on organizational robustness.
- The  $R^2$  value (0.40) indicates that the collective model explains 40% of the variation in organizational robustness.
- Each variable contributes positively to organizational robustness, with strategic agility having the strongest impact ( $\beta = 0.35$ ), followed by sustainability accounting practices ( $\beta = 0.30$ ), and statutory compliance ( $\beta = 0.20$ ).

In accordance with the findings, we reject the null hypothesis and conclude that sustainability accounting practices, statutory compliance, and strategic agility collectively have a major contribution to organizational robustness in Nigerian organizations.

### Discussion of Findings

The research explored the influence of sustainability accounting practices, statutory compliance, and strategic agility on organizational robustness in Nigerian organizations. The research results are detailed below:

#### Sustainability Accounting Practices and Organizational Robustness

The study found a synergistic connection sustainability accounting practices and organizational robustness. This finding suggests that organizations that adopt sustainability accounting strategies are likely to be resilient in spite of uncertainty and change. By adopting sustainability accounting practices, organizations can detect and manage sustainability-related dangers and prospects, which can contribute to improved organizational robustness.

#### Statutory Compliance and Organizational Robustness

The research found a significant positive connection between statutory compliance and organizational robustness. This finding suggests that organizations that comply with relevant regulations and laws which are intensified to be resilient. Statutory compliance can help organizations avoid judicial and brank-related risks, which can influence to improve organizational robustness.

#### Strategic flexibility and Organizational Robustness

The research revealed a significant positive connection between strategic agility and organizational robustness. This finding suggests that organizations that are strategically agile are intensified to be resilient. Strategic agility permits businesses to rapidly respond to environmental fluctuations, adapt their strategies, and allocate resources effectively, which can contribute to improved organizational robustness.

#### Collective Impact on Organizational Robustness

The research revealed that sustainability accounting practices, statutory compliance, and strategic agility collectively have a significant positive impact on organizational robustness. This finding suggests that organizations that adopt sustainability accounting practices, comply with regulations, and are strategically agile show a greater tendency to be resilient.

#### Implications of the Study

The research revealed implications for companies aiming to improve their robustness. The findings suggest that organizations should adopt sustainability accounting practices, comply with regulations, and develop dynamic capabilities to improve their robustness in adopting sustainability accounting practices.

#### Summary of Findings

The research investigated the effect of sustainability accounting practices, statutory compliance, and strategic agility on organizational robustness in Nigerian organizations. The key findings are:

1. Sustainability accounting practices have a major positive outcome on organizational robustness.
2. Statutory compliance has a significant positive impact on organizational robustness.
3. Strategic agility has a major positive outcome on organizational robustness.
4. Collective impact: Sustainability accounting practices, statutory compliance, and strategic agility collectively have a major positive outcome on organizational robustness.

The findings suggest that Nigerian businesses can foster their robustness by adopting sustainability accounting practices, complying with regulations, and developing strategic Agility.

## Conclusion and Recommendations

### Conclusion

By adopting sustainability accounting practices, complying with regulations, and developing strategic agility, organizations in Nigeria can improve their ability to withstand uncertainties and challenges, ultimately leading to improved performance and sustainability.

The study's results have implications for organizational leaders, policymakers, and stakeholders seeking to promote robustness and viability in Nigerian companies.

### Recommendations

In accordance with the findings, the following recommendations are made:

1. **Adopt Sustainability Accounting Practices:** Nigerian businesses should adopt sustainability accounting practices to foster their robustness and sustainability.
2. **Ensure Statutory compliance:** Organizations should maintain adherence with relevant regulations and laws to mitigate legal and reputational exposure.
3. **Develop Strategic Agility:** Organizations should develop strategic agility to quickly respond to environmental fluctuations and adapt their strategies.
4. **Mainstream Sustainability into Organizational Practices:** Organizations should infuse sustainability into their business strategy to foster robustness and sustainability.
5. **Provide Performance Improvement:** Organizations should provide performance improvement to foster employees' expertise and capabilities on sustainability accounting practices, statutory compliance, and strategic agility. These recommendations will help Nigerian businesses foster their robustness and sustainability, ultimately leading to improved performance and long-term success.

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## Tax Relief and Firm Performance of Selected SMES (Bakeries) in Ethiope East LGA of Delta State

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### Abstract

*This study investigates the impact of tax relief on the performance of small and medium-sized enterprises (SMEs) within the bakery sector, focusing on Bakeries in Ethiope East Local Government Area of Delta State. This study is motivated by the need to fill this gap in the literature by examining whether tax relief measures have a tangible impact on the performance of SMEs (Bakeries) in Ethiope East LGA of Delta State. This study holds significant implications for various stakeholders, including policymakers, business owners, and academics, particularly within the context of Delta State, Nigeria. Understanding the impact of tax relief on the performance of bakery will provide valuable insights for the formulation of more effective tax policies. The main objective of this study is to examine the extent of tax relief and firm performance of selected SMEs (Bakeries), Ethiope East LGA, Delta State. The research examines four key forms of tax relief: tax reduction, tax credits, tax offsets, and tax breaks, and their influence on firm performance. Utilizing a quantitative research design, data were collected from 120 respondents and analyzed using t-tests to determine the significance of the relationships between tax policies and firm performance. The results indicate that all four tax policies significantly affect the performance of SMEs, as evidenced by the rejection of the null hypotheses for each tax variable. These findings align with existing literature, highlighting the critical role of favorable tax policies in enhancing business growth and sustainability. The study concludes that targeted tax incentives are essential for fostering the development and competitiveness of SMEs, particularly in developing economies. This research contributes to the broader discourse on fiscal policy and SME development, offering valuable insights for policymakers aiming to stimulate economic growth through the support of small businesses.*

**Keywords:** Tax reduction, tax credits, tax breaks, tax relief, performance, small and medium-sized enterprises.

### Introduction

Tax relief, in various forms such as tax credits, exemptions, and reductions, is designed to alleviate the financial pressures on businesses, thereby enhancing their performance and competitive edge (Nguyen *et al.*, 2020). Empirical studies have shown mixed results, with some indicating positive impacts of tax relief on firm performance, while others highlight potential drawbacks such as reduced public revenue for infrastructural development. One of the most typically used incentive by the government is tax holiday, however this provision exempt companies from other tax liability, it likewise refutes some firms specific tax deductions over the tax holiday duration e.g., depreciation cost and interest expense having the tendency to offset a minimum of partially investment incentives. However, tax incentives are seen erroneously as easy incentives with a fairly reduced compliance concern e.g., no need to calculate income tax over the holiday duration. This understanding makes tax incentives more appealing at stimulating the growth and expansion of small and medium businesses. It has

been a great worry to all and sundry to promote the welfare of SMEs which the important sub sector has fallen short of expectation. The decreasing level of Nigeria's per capita income, which decreased from \$870 in 1981 to \$260 in 1998, and \$205 in 2004 in addition to a reduced level of agricultural, industrial and infrastructural development (irrigation, road and railway networks) all stand for disturbing indices, which likewise add to the dismal performance and contribution of our SMEs.

In Nigeria, various bodies have made attempts to define, what constitutes small-scale industry. Famous amongst them, is the National Council of Industry (2012). They defined small scale enterprises as an industry with a total capital employed of over N1.5 million but not more than N50 million, including working capital but excluding cost of land or a workforce of 11-100 workers. However, a more concise and coherent definition was given in the National Policy Micro, Small and Medium Enterprises (SMEDAN, 2016). In Nigeria, particularly in Delta State is bread. Almost everyone eats bread in Delta State University, Ethiope East

LGA. Almost up to 75 percent of breakfast diets in every household in Nigeria contain bread. There is a high level of demand for this commodity in Delta State University, Ethiope East LGA; just as petrol in the petroleum market in the country. Given the economic volatility and fiscal pressures in Nigeria, especially in the post-COVID-19 era, there is an urgent need to explore how tax policies can be optimized to support SMEs. This research therefore aims to fill the gap in the existing literature by specifically examining the impact of tax relief on the performance of selected SMEs (bakeries) in Ethiope East LGA, Delta State.

### Problem Statement

Despite the crucial role that Small and Medium Enterprises (SMEs) play in the economic development of Delta State, Nigeria, these enterprises, particularly bakery, continue to face significant challenges that hinder their growth and sustainability. One of the foremost issues is the heavy tax burden imposed on them, which can stifle their operational capacity and competitive edge (Adebisi & Gbegi, 2018). While tax relief measures are theoretically intended to alleviate such burdens and foster better firm performance, there is a paucity of empirical evidence regarding their actual effectiveness within the specific context of SMEs in Ethiope East LGA of Delta State.

This study is motivated by the need to fill this gap in the literature by examining whether tax relief measures have a tangible impact on the performance of SMEs (Bakeries) in Ethiope East LGA, Delta State. The problem is twofold: firstly, there is an inadequate understanding of how various forms of tax relief affect the financial and operational performance of the enterprises. Secondly, policymakers lack robust data to inform decisions on tax policies that could potentially enhance the productivity and growth of SMEs. Without clear evidence, it remains uncertain whether tax relief measures are achieving their intended outcomes or if they need to be restructured to better support these businesses. This uncertainty can lead to suboptimal policy decisions, which may further hinder the growth prospects of bakery and SMEs more broadly in Delta State. Therefore, this study seeks to investigate the relationship between tax relief and firm performance, providing empirical insights that can guide more effective policy-making aimed at fostering the growth and sustainability.

### Objectives of the Study

The main objective of this study is to examine the extent of tax relief and firm performance of selected SMEs (Bakeries) in Ethiope East LGA of Delta State. The specific objectives are to;

- i. To evaluate the extent to which tax reduction affects firm performance of selected SMEs

(Bakeries in Ethiope East LGA, Delta State)  
Ethiope East LGA, Delta State.

- ii. To assess the extent to which tax credits influence firms performance of selected SMEs (Bakeries) in Ethiope East LGA of Delta State.

### Theoretical Esposition

#### Concept of Tax Relief

Tax relief refers to various measures implemented by governments to reduce the tax burden on individuals and businesses, thereby stimulating economic activity and encouraging investment. These measures can take multiple forms, including tax exemptions, deductions, credits, and reductions in tax rates. Tax exemptions are a form of tax relief where certain income or activities are completely excluded from taxation. For instance, many countries offer tax exemptions for charitable organizations, which helps promote philanthropy and social welfare activities (Krever & Brooks, 2015). Tax deductions, on the other hand, allow taxpayers to subtract specific expenses from their gross income, thereby reducing the taxable income. Common deductions include those for mortgage interest, medical expenses, and education costs (Gale, Gelfond, & Krupkin, 2019). The economic impact of tax relief has been widely studied, with evidence suggesting that it can have significant positive effects on economic growth and employment. Tax relief measures can increase disposable income for households, leading to higher consumption and demand for goods and services. For businesses, tax relief can lower operating costs, increase profitability, and provide additional capital for investment Djankov *et al.*, 2010.

#### Concept of Tax Reduction

Tax reduction involves the intentional lowering of tax rates or tax liabilities to stimulate economic growth, enhance business performance, and increase compliance among taxpayers. This fiscal policy tool has been widely studied for its potential to positively impact various economic sectors, particularly small and medium-sized enterprises (SMEs). In Nigeria, tax reduction policies have gained prominence as the government seeks to promote business development and economic diversification. According to Adedeji and Olowe (2022), tax reductions play a critical role in improving the financial health of SMEs. By alleviating the tax burden, SMEs were able to allocate more resources toward innovation and expansion, thereby contributing to overall economic growth (Adedeji & Olowe, 2022).

#### Concept of Tax Credit

Tax credit involves a reduction in the amount of tax that an individual or business owes to the government, achieved through various incentives and programs. Unlike tax deductions, which lower taxable income, tax credits directly reduce the tax liability on a dollar-for-dollar basis. This makes tax



credits particularly valuable as they provide a direct benefit to taxpayers who qualify for them (Smith & Green, 2019). Tax credits serve multiple purposes, including stimulating economic activities, encouraging investments, and supporting specific policy goals. For example, research and development (R&D) tax credits are designed to encourage companies to invest in innovation by providing financial relief for R&D expenses. This helps enhance productivity, competitiveness, and technological advancement within the economy (Brown & Jones, 2020).

In environmental policy, tax credits are often used to promote investments in renewable energy. The Investment Tax Credit (ITC) in the United States, for instance, has been crucial in driving the growth of the solar energy sector by reducing the upfront costs associated with solar installations. This not only supports environmental sustainability but also stimulates economic activity in the green energy industry (Black & Newberry, 2022). By reducing the financial burden of education, these credits contribute to a more skilled and educated workforce (Jones & Brown, 2023).

Tax credits can be categorized into refundable and non-refundable credits. Refundable tax credits provide a benefit even if the credit exceeds the taxpayer's total tax liability, resulting in a refund. Non-refundable tax credits, on the other hand, can only reduce the tax liability to zero, with any excess credit typically not refunded but possibly carried forward to future tax years.

### **Firm Performance**

Firm performance is a multifaceted construct that evaluates a business's overall effectiveness, efficiency, and success in achieving its objectives. This concept integrates various dimensions, including financial and non-financial metrics, which collectively provide a comprehensive view of the firm's health and strategic positioning. Financial performance indicators are paramount in assessing a firm's success and sustainability. These indicators include profitability ratios, such as net profit margin, gross profit margin, return on assets (ROA), and return on equity (ROE). Revenue growth is another critical financial metric, indicating the firm's ability to expand its sales over time. Consistent revenue growth is often a sign of market competitiveness and effective business strategies. Additionally, liquidity ratios, such as the current ratio and quick ratio, assess a firm's ability to meet short-term obligations, while solvency ratios, like the debt-to-equity ratio, provide insights into long-term financial stability and debt management (Gartenberg, Prat, & Serafeim, 2019). Non-financial performance metrics are equally important in providing a holistic view of firm performance. These metrics include customer satisfaction, employee engagement, innovation, and market share. Customer satisfaction can be measured

through surveys and Net Promoter Scores (NPS), offering insights into customer loyalty and service quality. High customer satisfaction typically correlates with repeat business and positive word-of-mouth.

### **Tax Relief and Firm Performance on SMEs**

Tax relief, in the form of reduced corporate tax rates, tax credits, and deductions, can significantly enhance the profitability of SMEs. For bakeries, which often operate with slim profit margins, tax incentives can provide much-needed financial respite. According to Ilyas and Rajan (2020), such tax measures reduce operational costs and improve cash flow, enabling bakeries to reinvest savings into business operations and expansion. This reinvestment can lead to improved product quality, expanded product lines, and increased competitiveness.

Investment behavior among SMEs is also positively influenced by tax relief measures. Research indicates that tax incentives encourage SMEs to invest in new technologies, equipment, and infrastructure, which are vital for enhancing productivity and competitiveness. Recent studies have delved into how tax policies impact the growth and sustainability of these enterprises. Tax credits are a form of fiscal policy designed to reduce the tax liability of businesses, thereby incentivizing investment and promoting economic growth. In Nigeria, tax credits have been employed to stimulate the performance of small and medium-sized enterprises (SMEs). Egbunike and Abianga (2020) analyzed the role of tax credits in enhancing the performance of SMEs in Nigeria. Their study revealed that tax credits significantly alleviate the financial burden on SMEs, allowing them to reinvest savings into their businesses.

The Theoretical framework for this study is anchored on the sustainability- oriented innovation theory.

### **Sustainability-Oriented Innovation (SOI) Theory**

Developed by René Jorna and Jan Poldner in 2018, the Sustainability-Oriented Innovation (SOI) Theory emphasizes the integration of sustainability into a firm's innovation processes (Jorna & Poldner, 2018). This theory posits that companies that incorporate sustainability into their core strategies are likely to achieve long-term growth and competitive advantage. For Bakeries in Ethiope East LGA, Delta State, tax relief can provide the financial leeway necessary to invest in sustainable practices and technologies, such as energy-efficient equipment and sustainable sourcing of materials. These investments not only help reduce operational costs but also enhance the firm's market reputation and customer loyalty. The alignment with the dependent variable (firm performance) is clear, as tax relief (the independent variable) enables the firm to undertake sustainability-oriented innovations, leading to improved efficiency and better overall performance.

### Research Methodology

The survey research design was used in this research study. This is because the study's design involves sampling people's opinions and viewpoints. The population of this study consist of employees and management of selected bakery firms under study

(Delsu Bakery, DePaul Bakery, Earlyson Bakery, Efemena Bakery, Labrix Bakery, Mannie Bakery, Timmies Bakery, and Zion Excellent Bakery). A total of 190 employees and management of the selected bakeries operating in Ethiopie East LGA of Delta state were chosen as the study population.

### List of Selected Bakeries

| S/N | Firm                                       | Location                                                                               | Product offered    | No. Of staff |
|-----|--------------------------------------------|----------------------------------------------------------------------------------------|--------------------|--------------|
| 1.  | Bakeries in Ethiopie East LGA, Delta State | Campus 1, Delta State University, Ethiopie East LGA, Ethiopie East, LGA of Delta State | Bread Bakery       | 35           |
| 2.  | Efemena Bakery                             | Kokori, Delta State                                                                    | Bread Bakery       | 27           |
| 3.  | Zion Excellent Bakery                      | Ethiopie East LGA, Delta State                                                         | Bread Bakery       | 25           |
| 4.  | Timmies Bakery                             | Ethiopie East LGA, Delta State                                                         | Bread Bakery       | 23           |
| 5.  | Earlyson Bakery                            | Ethiopie East LGA, Delta State                                                         | Bread and Pastries | 21           |
| 6.  | Labrix bakery                              | Ethiopie East LGA, Delta State                                                         | Bread and Pastries | 21           |
| 7.  | DePaul Bakery                              | Eku, Delta State                                                                       | Bread Bakery       | 20           |
| 8.  | Mannie Bakery                              | Ethiopie East LGA, Delta State                                                         | Bread Bakery       | 18           |
|     | <b>TOTAL</b>                               |                                                                                        |                    | <b>190</b>   |

Source: Researcher field survey, 2024

### Sample and Sampling Techniques

A study sample is only a carefully chosen portion of the population from which conclusions are drawn about the population as a whole. A total of 190 employees and management of selected Bakeries in Ethiopie East of Delta state were chosen as the study population. The sample size was determined using Taro Yamane's sampling technique. 129 staffs and management were randomly selected as the study population. This sampling technique was considered appropriate because each subject in the population has equal chance of inclusion in the sample as it provides an unbiased and better estimate of the parameters if the population is homogenous (Sudman, 2015). The sample size was determined using the Taro Yamane's technique for sample selection. With A 95% confidence level and P = 0.5 are assumed Therefore, using the Taro Yamane formula below, we can determine the sample size;

### Sample Size according to selected firm

| S/N | Firm                               | Location                                                                               | No. Of staff |
|-----|------------------------------------|----------------------------------------------------------------------------------------|--------------|
| 1.  | Delsu Bakery                       | Campus 1, Delta State University, Ethiopie East LGA, Ethiopie East, LGA of Delta State | 17           |
| 7.  | DePaul Bakery                      | Eku, Delta State                                                                       | 16           |
| 5.  | Earlyson                           | Ethiopie East LGA, Delta State                                                         | 16           |
| 2.  | Efemena Bakery                     | Kokori, Delta State                                                                    | 16           |
| 6.  | Labrix                             | Ethiopie East LGA, Delta State                                                         | 16           |
| 8.  | Mannie Bakery                      | Ethiopie East LGA, Delta State                                                         | 16           |
| 4.  | Timmies Bakery                     | Ethiopie East LGA, Delta State                                                         | 16           |
| 3.  | Zion Excellent Bakery              | Ethiopie East LGA, Delta State                                                         | 16           |
|     | <b>TOTAL Number of respondents</b> |                                                                                        | <b>129</b>   |

Source: Field data 2025

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = appropriate sample size

N = population size

e = co-efficient or confidence margin or error unit

e = 5% or 0.05

Thus, the sample size is evaluated as;

$$n = \frac{N}{1 + N(e)^2} = \frac{190}{1 + 190(0.05)^2} = 128.812$$

**n = 129 staffs and managements (Rounded)**

After calculating the sample size by substituting the number into the Yamane's formula, the number of sample was 129 staff and management, since am dealing with human beings, it is more realistic to approximate my sample size to 129.

### Research Instrument

The instrument for data collection for this study was a structured questionnaire. The questionnaire consists of two parts, A and B. Part A, comprises items dealing with personal information about the staff and management. The Part B was well structured to capture five Likert scales; Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

### Validity and Reliability

In order to ensure the validity of the research instrument, a draft of the questionnaire was submitted to the research supervisor and experts in

the field of banking and finance as well as experts in the field of measurement and evaluation. These experts went through the draft and make useful recommendations. These recommendations were effected before the final draft was made. At the end, the instrument was deemed to have met both face, content, and construct validity. It was established whether the research instrument was reliable. The instrument's reliability was assessed using the Pearson Correlation Coefficient. With a co-efficient of 0.68, the research tool was shown to be reasonably dependable. Taber (2017) states that a decent dependability is within the range of 0.67 to 0.87.

### Pearson Correlation Coefficients between bakeries

| Bakeries | 1     | 2     | 3     | 4     | 5      | 6     | 7     | 8     |
|----------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1.       | 1.000 | 0.831 | 0.686 | 0.630 | 0.0729 | 0.792 | 0.870 | 0.766 |
| 2.       | 0.831 | 1.000 | 0.776 | 0.784 | 0.812  | 0.728 | 0.837 | 0.829 |
| 3.       | 0.686 | 0.776 | 1.000 | 0.869 | 0.843  | 0.786 | 0.850 | 0.921 |
| 4.       | 0.630 | 0.784 | 0.869 | 1.000 | 0.887  | 0.772 | 0.704 | 0.817 |
| 5.       | 0.729 | 0.812 | 0.843 | 0.887 | 1.000  | 0.797 | 0.794 | 0.819 |
| 6.       | 0.792 | 0.728 | 0.786 | 0.772 | 0.797  | 1.000 | 0.840 | 0.885 |
| 7.       | 0.870 | 0.837 | 0.850 | 0.704 | 0.794  | 0.840 | 1.000 | 0.889 |
| 8.       | 0.766 | 0.829 | 0.921 | 0.817 | 0.819  | 0.885 | 0.889 | 1.000 |

The average Pearson correlation coefficient (**r**) from correlation matrix is approximately **(0.805)**. It indicates a strong positive linear relationship among the variables, suggesting good consistency in the data.

### Method of Data Collection

The data used for this research is primary data. The primary data was collected using a structured questionnaire that was administered to the staff and management of bakeries in Ethiopie East LGA, of Delta State. The questionnaire was adapted from Daniel and Okibo, 2015. The data collected for this study was analyzed using descriptive and inferential statistics. The descriptive statistical tools used include tables, graphs, pie charts, simple percentage while the inferential statistical tools used include Pearson product-moment correlation coefficient and multiple regression. Specifically, the demographic characteristics were analyzed and presented in tables. The research questions 1-4, were analyzed using

simple percentages and frequencies. The hypothesis 1-4 which had to do with relationship among variables, utilized the Pearson product-moment correlation coefficient. This was well suited because it was a parametric test and it measures the strength of linear relationship between two variables.

### Data Analysis and Presentation of Results

In this study, the target population (Delsu Bakery, DePaul Bakery, Earlyson Bakery, Efemena Bakery, Mannie Bakery, Labrix Bakery, Timmies Bakery and Zion Excellent Bakery) a total sample number of one hundred and twenty-nine (129) respondents were drawn from the population distribution of respondents in the study population using the Taro Yamane's technique. One hundred and twenty-nine (129) copies of questionnaires were administered to respondents but only one hundred and twenty (120) copies were retrieved. This therefore form the basis of the data analysis.

### Demographic profile of respondents

| Items                             | Frequency  | Percentage  |
|-----------------------------------|------------|-------------|
| <b>Age</b>                        |            |             |
| 18-25years                        | 20         | 16.7%       |
| 26-30years                        | 56         | 46.7%       |
| 31-39years                        | 35         | 29.2%       |
| 40years and above                 | 9          | 7.5%        |
| <b>Total</b>                      | <b>120</b> | <b>100%</b> |
| <b>Gender</b>                     |            |             |
| Male                              | 75         | 62.5%       |
| Female                            | 45         | 37.5%       |
| <b>Total</b>                      | <b>120</b> | <b>100%</b> |
| <b>Educational level attained</b> |            |             |
| SSCE                              | 37         | 30.8%       |

|              |            |             |
|--------------|------------|-------------|
| NCE          | 32         | 26.7%       |
| B.SC         | 48         | 40.0%       |
| PG/Masters   | 3          | 2.5%        |
| <b>Total</b> | <b>120</b> | <b>100%</b> |

**Source:** Primary data, 2024

Table 4. Shows that 56(46.7%) of the respondents are within the age bracket 26-30 which is the highest. While 35(29.2%) are within age bracket 31-39. 20(16.7%) are within the age bracket of 18-25, while only 9(7.5%) are within the age bracket of 40years and above. From the total respondents, 75(62.5%) were male and 45(37.5%) were female. Academic qualification of the respondents varied from secondary to university with most of them having gone above secondary. The majority of 48(40.0%)

have degree, 32(26.7%) have NCE and a fraction of 37(30.8%) have SSCE, while a little fraction of 3(2.5) are Master's degree holder. The enterprises value added activities of either manufacturing or food processing typically leverage on skills acquired after secondary education. This implies that the literacy level of owner managers were satisfactory.

#### Answering Research Questions

**Research Question I:** To what extent does tax reduction affect the firm performance of selected SMEs (Bakeries) in Ethiopia East LGA of Delta State?

**Table 5: Effects of Tax Reduction on SMEs (Bakeries)**

| S/N | ITEM                                                                     | SA         | A          | U         | D       | SD | Mean |
|-----|--------------------------------------------------------------------------|------------|------------|-----------|---------|----|------|
| 1   | Tax reductions have led to increased profitability in our bakery         | 66 (55.0%) | 30 (25.0%) | 22(18.3)  | 2(1.7)  | -  | 1.67 |
| 2   | Tax reductions have enabled us to hire more staff                        | 27(22.5%)  | 24(20.0)   | 60(50.0)  | 9(7.5)  | -  | 2.43 |
| 3   | The bakery's financial stability has improved due to tax reductions      | 72(60.0%)  | 39(32.5%)  | 6(5.0%)   | 3(2.5%) | -  | 1.50 |
| 4   | Tax reductions have allowed us to invest in new equipment and technology | 47(39.2%)  | 25(20.8%)  | 48(40.0%) | -       | -  | 2.01 |

**Source:** Primary data, 2024

Table 1 reveals that the majority of respondents believe tax credits have had a positive influence on their bakeries, with 55.0% agreeing that tax reductions have led to increased profitability, while 72% stating that the bakery's financial stability has improved due to tax reduction. Despite this positive outlook, a small portion of respondents (7.5% to 18%)

either disagree or are undecided, indicating some mixed views within the group.

**Research Question II:** To what extent does tax credits influence the firm performance of selected SMEs (Bakeries) in Ethiopia East LGA of Delta State?

**Table 6: Influence of Tax Credits on SMEs (Bakeries)**

| S/N | ITEMS                                                                  | SA         | A          | U         | D       | SD | Mean |
|-----|------------------------------------------------------------------------|------------|------------|-----------|---------|----|------|
| 1   | Tax credits have significantly reduced our operational costs.          | 66 (55.0%) | 30 (25.0%) | 22(18.3)  | 2(1.7%) | -  | 2.08 |
| 2   | The availability of tax credits has facilitated our expansion efforts. | 27(22.5%)  | 24(20.0)   | 60(50.0)  | 9(7.5)  | -  | 2.09 |
| 3   | Tax credits have had a positive impact on our cash flow management.    | 72(60.0%)  | 39(32.5%)  | 6(5.0%)   | 3(2.5%) | -  | 2.13 |
| 4   | The financial health of our bakery has improved due to tax credits.    | 47(39.2%)  | 25(20.8%)  | 48(40.0%) | -       | -  | 2.27 |

**Source:** Primary data, 2024

The table reveals that the majority of respondents believe tax credits have had a positive influence on their bakeries, with 58% agreeing that these credits have significantly reduced operational costs, and 60% stating that tax credits have facilitated expansion efforts. Additionally, 63% agree that tax

credits have positively impacted cash flow management, while 53% believe these credits have improved the financial health of their bakery. Despite this positive outlook, a small portion of respondents (5.0% to 10%) disagree and 30% are undecided, indicating some mixed views within the group.

**Research Question III:** To what extent do tax breaks impact the firm performance of selected SMEs (Bakeries) in Ethiopia East LGA of Delta State?

**Table 7: Impact of Tax Breaks on Firm Performance of SMEs (Bakeries)**

| S/N | ITEMS                                                                                            | SA         | A         | U          | D       | SD       | Mean |
|-----|--------------------------------------------------------------------------------------------------|------------|-----------|------------|---------|----------|------|
| 1   | Tax breaks have been essential in maintaining our bakery's operations during economic downturns. | 56 (46.7%) | 35(29.2%) | 25(20.8)   | 4(3.3%) | -        | 1.81 |
| 2   | Our bakery has experienced improved financial performance due to tax breaks.                     | 46(38.3 %) | 41(34.2%) | 30(25.0 %) | 1(0.8%) | -        | 1.95 |
| 3   | The provision of tax breaks has allowed us to offer more competitive pricing.                    | 52(43.3 %) | 22(18.3%) | 37(30.8 %) | 9(7.5%) | -        | 2.03 |
| 4   | Tax breaks have played a crucial role in our bakery's strategic planning.                        | 31(25.5 %) | 35(29.2%) | 49(40.8 %) | -       | 5(4.2% ) | 2.23 |

**Source:** Primary Data, 2024

The table shows that most respondents believe tax breaks have significantly impacted their bakeries' performance. A substantial 71% agree that tax breaks have been essential in maintaining operations during economic downturns, and 72% believe they have played a crucial role in strategic planning. However, views are more divided on financial performance and

competitive pricing, with only 43.5% and 18.3% agreeing, respectively, while about 9% disagree or strongly disagree in both cases. This suggests that while tax breaks are largely seen as beneficial for stability and planning, their impact on financial performance and pricing is more contentious among respondents.

#### The Extent to which Tax relief influenced firm performance

|                    | Frequency  | Percent      |
|--------------------|------------|--------------|
| To No Extent       | 6          | 5.0          |
| To low Extent      | 10         | 8.3          |
| To moderate Extent | 68         | 56.7         |
| To a great Extent  | 36         | 30.0         |
| <b>Total</b>       | <b>120</b> | <b>100.0</b> |

**Source:** Primary data, 2025

According to the results in table 9. 30% indicated that the performance of their bakery had grown to great extent due to Tax relief, whereas 56.7% to a moderate extent and 8.3% to low extent while 5.0% indicated that their business performance had not improved at all. This indicates that competitive strategies influence performance to a great extent.

#### Test of Hypotheses

**H0<sub>1</sub>:** Tax reduction does not significantly affect firm performance of selected SMEs (Bakeries) in Ethiopia East LGA of Delta State.

**Table 10: Sample t-Test of Tax reduction and firm performance**

**Test Value = 0.05**

| Variables        | N   | Mean | SD   | t-cal | Sig.<br>(2tailed) | df  | Decision |
|------------------|-----|------|------|-------|-------------------|-----|----------|
| Firm Performance | 120 | .73  | .830 | 9.572 | .000              |     |          |
| Tax Credit       | 120 | .07  | .250 | 2.915 | .004              | 119 | Rejected |

The analysis, conducted using a t-test, revealed a t-calculated value of 9.572 and a significance level of 0.000, both of which indicate a statistically significant relationship between tax reduction and firm performance. Given that the significance level is well below the conventional threshold of 0.05, the null hypothesis is rejected. This result suggests that

tax reduction significantly enhances the performance of SMEs in this context, highlighting the importance of favorable tax policies in improving business outcomes.

**HO<sub>2</sub>:** Tax credits does not significantly influence firm performance of selected SMEs (Bakeries) in Ethiope East LGA of Delta State.

**Table 11: Sample t-Test of Tax Credits and firm performance**  
Test Value = 0.05

| Variables        | N   | Mean | SD   | t-cal | Sig.<br>(2tailed) | df  | Decision |
|------------------|-----|------|------|-------|-------------------|-----|----------|
| Firm Performance | 120 | .73  | .830 | 9.572 | .000              |     |          |
| Tax Credit       | 120 | .09  | .290 | 3.465 | .001              | 119 | Rejected |

The hypothesis asserted that statistical analysis yielded a t-calculated value of 3.465 with a significance level of 0.001. This p-value < 0.05, provides strong evidence against the null hypothesis. Consequently, the null hypothesis is rejected, indicating that tax credits do, in fact, have a significant influence on firm performance. The findings underscore the role of tax credits as a crucial financial incentive that can positively impact the operational success of SMEs.

**HO<sub>3</sub>:** Tax breaks do not significantly impact firm performance of selected SMEs (Bakeries) in Ethiope East LGA of Delta State.

## Sample t-Test of Tax Offset and firm performance

| Variables        | N   | Mean | SD   | Test Value = 0.05 |                |     |          |
|------------------|-----|------|------|-------------------|----------------|-----|----------|
|                  |     |      |      | t-cal             | Sig. (2tailed) | df  | Decision |
| Firm Performance | 120 | .73  | .830 | 9.572             |                |     |          |
| Tax Offset       | 120 | .12  | .322 | 3.964             | .000           | 119 | Rejected |

The t-test results demonstrated a t-calculated value of 3.465 and a significance level of 0.001, both of which point to a significant effect of tax breaks on firm performance. Since the significance level is below the 0.05 threshold, the null hypothesis is rejected. This outcome implies that tax breaks are a significant determinant of firm performance, reinforcing the value of tax relief measures in enhancing the productivity and growth of SMEs.

### Discussion of findings

The findings of this study reveal that tax policies, including tax reduction, tax credits, tax breaks, and tax offsets, significantly influence the performance of small and medium-sized enterprises (SMEs). Each hypothesis tested in the study was rejected, indicating that these tax mechanisms are critical determinants of firm performance. This aligns with existing literature, which underscores the pivotal role of tax incentives in enhancing the economic viability of SMEs.

### Conclusion

This study provides a comprehensive analysis of the relationship between various forms of tax relief and the operational and financial performance of small and medium-sized enterprises (SMEs) within the bakery sector in Ethiope East Local Government Area (LGA) of Delta State. The study concludes that tax policies are vital tools for enhancing the performance of SMEs in Nigeria. The significant relationships observed between tax reduction, tax credits, tax breaks, and tax offsets with firm performance suggest that SMEs benefit greatly from favorable tax environments. These benefits manifest in improved profitability, better resource allocation, and enhanced capacity for growth and expansion.

### Recommendations

For future research, this study recommends that;

- i. The government should design and implement tax relief programs specifically tailored for SMEs in the bakery sector, focusing on reducing tax burdens to enhance their financial flexibility and capacity for reinvestment.
- ii. Authorities should ensure that SMEs are well-informed about available tax credits and how to access them,

providing guidance and support to maximize the benefits of these financial incentives.

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## Tender Evaluation and Procurement Efficiency in the Rivers State Government Ministries

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### Abstract

*This study examined the relationship between tender evaluation and procurement efficiency in Rivers State Government ministries. Tender evaluations were conceptualized as the independent variable, while value for money and public accountability served as measures of procurement efficiency. Two research questions guided the study, which adopted a cross-sectional survey design. The population comprised procurement officers across all 26 ministries in the Rivers State Government ministries. Given the manageable size of the population, a census approach was utilized. Instrument reliability was confirmed using Cronbach's Alpha, with all items scoring above 0.70. Data were analyzed using descriptive and inferential statistics, and two hypotheses were tested using Spearman's Rank Order Correlation at a 95% confidence level and a 0.05 significance threshold. Findings revealed a significant positive relationship between tender evaluation and procurement efficiency within the ministries. The study concludes that proper evaluation of tender in public procurement processes enhances transparency, reduces costs, and improves efficiency. It is recommended that public organizations in Rivers State should properly evaluate the tenders from vendors in order to ascertain the most suitable in terms of technical suitability, cost efficient and other capabilities also, stringent procurement policies be implemented to encourage proper bid evaluation which will foster efficient procurement practices .*

**Key words:** Tender evaluation, Procurement efficiency, Value for money, Public accountability, Transparency

### Introduction

Public Procurement process usually attracts a lot of corruption because of colossal sums of money involved and the opportunities that are available to unscrupulous people. Outside of salaries and social benefits, procurement accounts for the largest share of public expenditure at all tiers of government. In Nigeria, about seventy percent of corrupt practices are affected through the purchasing and supply of basic items for some Ministries, Departments and Agencies. Similarly, in most States, overall organizations lose seventy percent of their revenues to procurement corruptions each year. Crimes in this context are elaborated and refined, involving schemes such as abuse of power, corruption, bribery, favoritism, nepotism, and misappropriation (Padhi & Mohapatra, 2011). This negative behavior causes lost jobs and income, and scares away investment that could bring new prosperity to the country (Sullivan, 2000). Corruption in procurement poses serious threats to the stability of government to achieve its operational objectives. Tender evaluation and procurement efficiency helps

organizations to build a strong structure in terms of transparency, accountability and value for money in the public procurement of items for the organization. Tender evaluation helps organization to properly examine tenders who are competent and qualified to execute the project in a competitive atmosphere and the most qualified tender is considered. According to Albert Sanchez-Graells (2018), public procurement is a regulatory framework that aims to administer the interaction between the public buyer and the market in order to procure the best value for money in the expenditure of public funds to meet organizational requirements. However, most organization does not follow due processes in there tendering and competitive bidding processes, and this has hindered the development and growth of most public sectors in Rivers State, whereby encourage the procurement of low standard of facilities because of lack of adequate assessment of tenders' documents, which has led to corruption, collusion and bid rigging. Addressing these shortcomings is paramount to not only upholding the principles of tender evaluation and transparency but

also to fostering a competitive environment that maximizes the benefits of public procurement tendering for the broader society.

### **Theoretical framework**

Theoretical framework in this study helps to serve as the foundation for this research from which all the knowledge associated with the entire research process was constructed. The theoretical framework for this study serve as the structure and support for the rational of the research, statement of the problem, the aim or purpose, the significance and statement of the research questions. The theoretical framework provides the foundation or grounding base for the review of literature of this study (Grant & Osanloo, 2014). Hence, theoretical framework for this study will serve as the blue print for our paper inquiring and provide guidance on which to build and support this research.

### **Carters '10 Cs', Bid Evaluation Theory**

This theory was developed by Ray Cater in 1995 to help buyers determine the most suitable bidder who will be able to perform a contract or a tender that is awarded by providing wide range of criteria to evaluate and rank bidders. The bidder is evaluated on basis of '10 Cs', criteria which includes: cash; competency; commitment; consistency; capacity; control; cost; compatibility, compliance and communication (Caters, 1995). According to Carter, the bidder should be competent to fulfilling the contract by delivering goods, works and services requisitioned by the user. Have cash resources to ensure the stability of supply by determining his profitability and cash flow position whether it has working funds to pay its bills, buy materials and pay workers, assets he owns, the debts it owes, how its cost are structured and allocated and so its overall financial health. On the other hand, prove consistency in delivering and improving quality and service for example track record of reliability or process capability robust process, quality assurance and control. Moreover, prove capacity to meet current and future needs of the buying organization. Be committed to key values such as quality, service, or cost management. Have control systems in place for monitoring and managing resources for example quality and environmental systems, financial controls, risk management systems and so on. Reduce cost which is an aspect of price, whole life cost and value for money. Show evidence of compatible with the buying organization both cultural (in terms of values, ethics work approach, management style and so on) and technological (in terms of processes, organization and its IT systems). Should be compliant to sustainable legislations and standards, corporate social responsibility, and lastly can communicate effectively by having supporting technology to support supply

chain collaboration (CIPS, 2018). The theory add value by avoiding wasted cost, time, effort and embarrassment of awarding contract (on the basis of lower price) to a tenderer who subsequently turns out to lack capacity or technical capability to handle work.

### **Conceptual Review**

#### **Tender evaluation**

The concept of Tender evaluation according to Herbsman and Ellis (1992), amount to the 'major' criteria of cost, time, and quality as measured by the bid amount, time of execution, and quality of previous work respectively. This implies that the winning bid is fully responsive to the contract in addition to the bidder's being sufficiently well qualified to undertake the contract (Hardy, 1978). Tender evaluation is used to indicate the procedure for strategic assessment to tender bids submitted by pre-qualified contractors. The strategy used for tender evaluation should reflect the client's objectives (Hardy, 1978). In addition, Herbsman and Ellis (1992) have also further project-specific criteria, including safety, durability, security, and maintenance. More objective methods have been proposed by Moselhi and Martinelli (1990) and Diekmann (1981) by means of multi-attribute utility techniques for combining the bid price and contractor selection criteria. The evaluation of bids by multi-attribute methods may encounter some difficulties when comparing different criteria measured by different scales. Hence various ways have been suggested for combining criterion values into a single scale. Herbsman and Ellis (1992), on the other hand, proposed a time/cost approach to determine the winning bid in the highway construction contracts. By converting the contract time to cost, a straightforward comparison can be made on a single criterion. Finally, Holt et al. (1993) combine their P2 and P3 score into a simple index by assigning 60% weighting for the P3 and 40% to the P2 score. Hence, it could be concluded that there is no consensus as yet on a common set of selection criteria for contractor selection. Selection criteria may vary in emphasis according to the characteristics of the project.

#### **Procurement Efficiency**

Procurement efficiency is a business term that refers to the ability of an organization to procure goods, services and works in a cost-effective manner Barsemoi, Mwangagi, and Asienyo (2014). It is a measure of how well an organization is able to acquire the goods and services it needs to run its operations, while minimizing the costs associated with the process. Here are some key reasons why effective procurement is crucial: Cost savings and effectiveness, effective procurement strategies help organizations obtain goods, services, and resources at competitive prices. This

leads to cost savings, better utilization of resources, and improved operational efficiency. Factors influencing procurement efficiency in organizations can vary depending on various internal and external factors. (Barsemoi *et al.*, 2014) highlight several key factors that impact procurement efficiency. One crucial factor is the level of transparency in the procurement process. Transparency ensures fairness and accountability, enabling organizations to identify potential inefficiencies and take corrective actions. Another factor is the presence of effective procurement policies and procedures. Organizations that have well-defined and streamlined procurement processes are more likely to achieve higher efficiency levels. Additionally, the availability of skilled procurement professionals plays a significant role in procurement efficiency. Competent personnel are essential in effectively managing supplier relationships, negotiating contracts, and implementing cost-saving measures. In summary, factors such as transparency, procurement policies, skilled professionals, technology adoption, and stakeholder collaboration all contribute to the procurement efficiency of organizations (Barsemoi *et al.*, 2014, cited in Idadokima, Nwaonuma & wordu 2024). Efficient procurement and cost reduction are essential for organizations to maintain profitability and gain a competitive edge in the market.

### **Measures of Procurement Efficiency**

An effective procurement function contribute to the continuity of the organizations primary business activities, control and reduce all procurement related costs, reduce the organizations risk exposures in relation to its supply markets, and contribute to innovation that improves service delivery (Mueller, 2003 cited in Idadokima *et al.*, 2024), has reiterated that procurement performance connects with efficiency and effectiveness in carrying out daily activities. There are eight indicators that have been selected to measure procurement performance and these include; the level of contract utilization, suppliers performance, procurement cost, level of price variance, expiration management, procurement cycle time and variability, staff training and payment processing time.

### **Value for Money**

The ultimate objective of the public procurement activity is to achieve best value for money in order to maximize economy and efficiency of public spending. This key operating principle relate to a number of factors which include not only the price of the goods, works or services, but also the suitability and satisfactory quality. Other influential factors may include total life cycle costs, maintenance, servicing costs, delivery/construction period, transportation or storage costs, as well as benefits of broader elements

whether environmental, social and economic. Baker, Dross, Shah, and Plastron (2013) noted that Value for Money (VFM) is a concept that has been widely used for some time within the commercial and industrial sectors which collaborated the views of Bidne *et al.* (2012) who acknowledged that value for money had been embraced internationally as an essential tool for assessing the relative costs and benefits of alternative options available for selection for the provision of a potential public project, though an often misunderstood phrase (Barr & Christie, 2014); Baker *et al.* (2013) further argued that there is no universal definition for the term value for money and the most cited definition states that value for money is 'the optimal use of resources to achieve the intended outcomes. The definition' of Value for Money is now in common currency, providing a framework for analysis shaped by economy, efficiency and effectiveness. However, the achievement of Value for Money should be assessed in conjunction with other project aspects such as service quality, risk transfer, and wider policy objectives (Akintoye, Hardcastle, Beck, Chinyio, & Asenova, 2003).

They further asserted that the overall project success is to a very large extent determined by the ability of the client to adopt and sustain the Value for Money regime throughout the project life. Therefore, It is worthy of note that securing value for money is not limited to some project delivery variants such as the traditional/conventional method of project delivery or to just design and build but to also variants such as public-private partnerships, relational contracting. Burger and Hawkesworth, (2011) noted that as a matter of principle, the choice between using a PPP or traditional procurement should be simple; however, governments should prefer the method that creates the most value for money.

### **Public Accountability**

The concept of accountability involves the proper documentation of all the activities that take place in the procurement process and the responsibility to demonstrate that acquisition, works, services has been executed in accordance with the articulated rules and standards and the officer reports fairly and accurately on performance results vis-à-vis mandated roles and or/plans (Adegite, 2016). It means doing things transparently in line with due process and the provision of feedback. It shows the extent to which a person can be answerable to whoever has invested some amount of trust, faith and resources on them (Onuorah & Appah, 2014). Public accountability is an essential component for the functioning of our political system, use of public fund and the ascertainment of the procurement cost. Accountability is very important in determining the rationale behind all procurement decisions.

Accountability guarantees accurate written records, including computer records which are essential in demonstrating that proper ethical standards have been observed. Hence, appropriate records should be maintained throughout the procurement process. These records should provide an audit trail of the reasons for making a particular procurement decision. The type and detail of information that is recorded should be specified in local procedural guidelines and will depend on the complexity or sensitivity of the particular purchasing issue Nadi, (2009). As accountability means that those who are charged with drafting and/or carrying out policy should be obliged to give an explanation of their actions to their subjects, (Johnson, 2004). This mechanism allows the openness of the process and brings defaulters to book Okafor and Modebe (2015) opine that when activities are recorded accurately in the various stages of the procurement procedure accountability become feasible, and enable appropriate audit trail of procurement decisions for controls, and serves as the official records in cases of administrative or judicial challenges and provide the avenue for citizens to monitor.

### Tender Evaluation and Procurement Efficiency

Twesigye, Shadrack, Anita, Baker and Brian (2022) examined the relationship between Bid evaluation practices and Contract performance in the Uganda Police Force (UPF). The study examined the three research objectives namely: relationship between bidder compliance and contract performance, relationship between technical evaluation of bidders and contract performance and lastly the relationship between financial evaluation of bidders and contract performance in UPF. The study adopted a cross

sectional survey design and employed both quantitative and qualitative approaches in data collection and analysis. The researcher used both primary and secondary data and analyzed data using Pearson correlation and multiple linear regression models. The results of the finding showed that there was a significant relationship between bid valuation practices under study and contract performance where by (bid compliance  $r = .062$ ;  $p < .802$ ) (technical evaluation  $r = .349$ ;  $p < .156$ ) and (financial evaluation  $r = .074$ ;  $p < .771$ ) respectively. The study concluded by mentioning that it's important for UPF to effectively conduct bid evaluation practices so as to enhance contract performance for effective service delivery. The study came up with several recommendations that UPF should comply with for optimal and effective utilization of resources by the force which include complying with general Procurement Principles and PPDA guidelines on public procurement in order to achieve effective contract performance. Although, the study was carried out in Uganda while ours study is in the Rivers State government ministries Nigeria. In conclusion, the adoption tender evaluation has proven to have a positive influence on procurement efficiency, as it improves transparency, reduce cost of Government spending, and enables value for money. Based on the foregoing, the study thus hypothesized that:

**Ho1:** There is no significant relationship between tender evaluation and value for money in the Rivers State Government ministries.

**Ho2:** There is no significant relationship between tender evaluation and public accountability in the Rivers state Government ministries.

This study conceptualized a frame work as shown in Figure1.

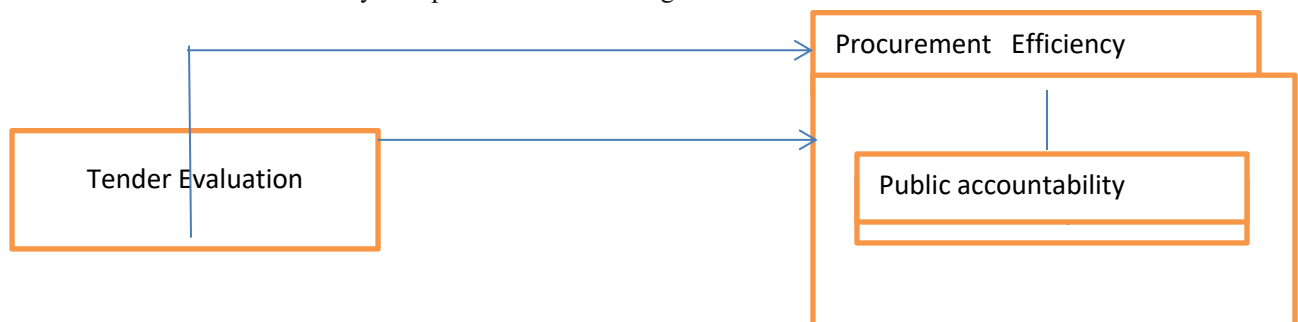


**Figure 1.1:** Conceptual frame work of tender evaluation and Procurement efficiency in the Rivers State Government ministries.

### Methodology

The study adopted a cross-sectional survey in its investigation of the variables. The population for the study comprised twenty-six (26) ministries in the River State civil service. The study focused on procurement officers in the 26 ministries. Preliminary investigation

from the office of Head of service revealed that there are at least three (3) procurement officers in each of the ministries. Two research questions were asked. However, there was no need to venture into the rigorous procedures for determining an appropriate sample size because our population of study was not large and is less than thirty (30). Hence, we studied the entire accessible population (census) of twenty (26) Ministries in the Rivers State Civil Service. The researcher randomly distributed three (3) structured

copies of the questionnaire per ministries, which correspondingly summed up to seventy eight (78) copies of questionnaire. The reliability of the instrument was achieved by the use of the cronbach Alpha coefficient with all the items scoring above 0.70.

Two hypotheses were tested using the spearman's Rank Order correlation coefficient with the aid of statistical package for social sciences (SPSS) version 23.0. The test were carried out at a 95% confidence interval and a 0.5 level of significance.

## Data Presentation and Analysis

**Table 1.1 Reliability Coefficients of Variable Measures**

| S/N | Dimensions/Measures other study variable | Number of items | Cronbach's Alpha | Comment  |
|-----|------------------------------------------|-----------------|------------------|----------|
| 1   | Tender evaluation                        | 5               | 0.781            | Reliable |
| 2   | Value for money                          | 5               | 0.798            | Reliable |
| 3   | Public accountability                    | 5               | 0.780            | Reliable |

Source: SPSS Output, (2024).

**Table 2.1 Response Rates and descriptive statistics for tender evaluation (n=59)**

|   | <i>Tender Evaluation</i>                                                                                   | VHE | HE | ME | VLE | VHE | Mean | Std.  |
|---|------------------------------------------------------------------------------------------------------------|-----|----|----|-----|-----|------|-------|
| 1 | The evaluation committee signs and observes signing ethical code of conduct during the evaluation of bids. | 8   | 9  | 9  | 15  | 18  | 3.44 | 1.418 |
| 2 | Bidders have a certificate of Incorporation.                                                               | 6   | 6  | 9  | 21  | 17  | 3.63 | 1.285 |
| 3 | Bidders have transaction tax clearance.                                                                    | 5   | 4  | 8  | 13  | 29  | 3.97 | 1.299 |
| 4 | Ethical code of conduct document is signed by bid evaluation committee before evaluation commences.        | -   | 1  | 7  | 33  | 18  | 4.15 | 0.690 |

**Source: Research Survey Data, (2024).**

In response to item one, respondents affirmed that evaluation committee signs and observes signing ethical code of conduct during the evaluation of bids. This is accounted for by the high mean score of 3.44. Similarly, it was agreed that bidders have a certificate of Incorporation. This is also confirmed by the high mean score of 3.63. More so, the third item got similar approval as respondents agreed that bidders have

transaction tax clearance thus saving time in ministry. The mean score of 3.97 also speaks volume of this status. Furthermore, fourth item got an affirmative response that Ethical code of conduct document is signed by bid evaluation committee before evaluation commences. Thus speeds up the evaluation process in our ministries. This is backed by a mean score of 4.15

**Table 2.2 Response Rates and descriptive statistics for Value for Money (n=59)**

|   | <i>Value for Money</i>                                                                                | VHE | HE | ME | VLE | VHE | Mean | Std.  |
|---|-------------------------------------------------------------------------------------------------------|-----|----|----|-----|-----|------|-------|
| 1 | Value for money helps contractors to utilize resources efficiently to achieve the intended outcomes.  | 5   | 4  | 8  | 13  | 29  | 3.97 | 1.299 |
| 2 | Value for Money helps contractors to have a better understanding of the cost implications of product. | 6   | 7  | 6  | 15  | 25  | 3.78 | 1.378 |

|   |                                                                                                                                  |   |   |    |    |    |      |       |
|---|----------------------------------------------------------------------------------------------------------------------------------|---|---|----|----|----|------|-------|
| 3 | Value for money helps contractors combine cost, quality, and sustainability to meet customer requirements.                       | - | 4 | 9  | 25 | 21 | 4.07 | 0.888 |
| 4 | Project success is determined by the ability of the client to adopt and sustain the value for money throughout the project life. | - | - | 11 | 39 | 9  | 3.97 | 0.586 |

*Source: Research Survey Data, (2024).*

From table

**Table 2.3 Response Rates and descriptive statistics for Public accountability (n=59)**

|   | Public accountability                                                       | VHE | HE | ME | VLE | VHE | X    | Std.  |
|---|-----------------------------------------------------------------------------|-----|----|----|-----|-----|------|-------|
| 1 | Public accountability enhance contractors confidence in bidding process     | 9   | 8  | 6  | 26  | 10  | 3.34 | 1.334 |
| 2 | Public accountability enhance transparency                                  | 8   | 9  | 9  | 15  | 18  | 3.44 | 1.418 |
| 3 | Public accountability promote transparency                                  | 6   | 6  | 9  | 21  | 17  | 3.63 | 1.285 |
| 4 | Accountability checkmate low standard of purchase materials of contractors. | 5   | 4  | 8  | 13  | 29  | 3.97 | 1.299 |

*Source: Research Survey Data, (2024).*

From table 4.11 in response to item one, respondents affirmed that public accountability enhance contractors confidence in bidding process. This is accounted for by the high mean score of 3.34. Similarly, it was agreed for the second item that public accountability enhance transparency. This is also confirmed by the high mean score of 3.44. Furthermore, the third item shows that their public accountability promotes transparency this is accounted for by the high mean score of 3.63. Finally, it was agreed for the last item that accountability checkmate low standard of purchase materials of contractors. This is also confirmed by the high mean score of 3.97.

**Table 3.1 Correlation for the relationship between Tender evaluation and procurement efficiency**

|                |                       | Tender evaluation       | Value for Money | Public Accountability |
|----------------|-----------------------|-------------------------|-----------------|-----------------------|
| Spearman's rho | Tender evaluation     | Correlation Coefficient | 1.000           | .890**                |
|                |                       | Sig. (2-tailed)         | .               | .000                  |
|                |                       | N                       | 130             | 130                   |
|                | Value for Money       | Correlation Coefficient | .890**          | 1.000                 |
|                |                       | Sig. (2-tailed)         | .000            | .000                  |
|                |                       | N                       | 130             | 130                   |
|                | Public Accountability | Correlation Coefficient | .636**          | .846**                |
|                |                       | Sig. (2-tailed)         | .000            | .000                  |
|                |                       | N                       | 130             | 130                   |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

*Source: Research Data (2024) and SPSS output version 23.0*

Table 3.1 illustrates the test for the two previously postulated bivariate hypothetical statements. The results show that for:

*H<sub>01</sub>: There is no significant relationship between Tender evaluation and value for money in the Rivers State government ministries*



The correlation coefficient ( $r$ ) shows that there is a significant and positive relationship between Tender evaluation and value for money. The  $\rho$  value 0.890 indicates this relationship and it is significant at  $p < 0.000 < 0.05$ . The correlation coefficient represents a high correlation indicating a very strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant positive relationship between tender evaluation and value for money in the Rivers State government ministries.

***H<sub>02</sub>: There is no significant relationship between Tender evaluation and public accountability in the Rivers State government ministries***

The correlation coefficient ( $r$ ) shows that there is a significant and positive relationship between tender evaluation and public accountability. The  $\rho$  value 0.636 indicates this relationship and it is significant at  $p < 0.000 < 0.05$ . The correlation coefficient represents a high correlation indicating a very strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant positive relationship between tender evaluation and public accountability in the Rivers State government ministries.

## Discussion of Findings

The relevance of Carters '10 Cs', Bid evaluation theory was developed by Ray Cater in 1995 to help buyers determine the most suitable bidder who will be able to perform a contract or a tender that is awarded by providing wide range of criteria to evaluate and rank bidders. Businesses have an obligation to maintain market efficiency. Bribery, bid rigging and collusion undermines market efficiency and leaves the entire market system open to change of immorality and illegitimacy. This study examines the relationship between tender evaluation and procurement efficiency in the Rivers State Government ministries. The findings revealed that there is a significant positive relationship between tender evaluation and procurement efficiency. This finding agrees with the study of Twesigye, Shadrack, Anita, Baker and Brian (2022) who examined the relationship between Bid evaluation practices and Contract performance in the Uganda Police Force (UPF). The study examined the three research objectives namely: relationship between bidder compliance and contract performance, relationship between technical evaluation of bidders and contract performance and lastly the relationship between financial evaluation of bidders and contract performance in UPF. The study adopted a cross sectional survey design and employed both quantitative and qualitative approaches in data collection and

analysis. The researcher used both primary and secondary data and analyzed data using Pearson correlation and multiple linear regression models. The results of the finding showed that there was a significant relationship between bid valuation practices under study and contract performance where by (bid compliance  $r = .062$ ;  $p < .802$ ) (technical evaluation  $r = .349$ ;  $p < .156$ ) and (financial evaluation  $r = .074$ ;  $p < .771$ ) respectively. The study concluded by mentioning that it's important for UPF to effectively conduct bid evaluation practices so as to enhance contract performance for effective service delivery. Although this study was done in Uganda, while ours was done in Nigeria. Hence, tender evaluation enhances procurement efficiency by reducing cost of Government spending, and enables economic growth.

## Conclusion

Tender evaluation is a crucial part of the procurement process where a contracting authority systematically assesses competing bids to select the most economically advantageous tender, based on pre-defined criteria like technical merit, price, experience, and financial stability. The process involves checking compliance, evaluating technical capabilities and financial resources, scoring bids against established criteria with weightings, and conducting moderation to ensure fairness before a final contract is awarded. While, Procurement efficiency is a business term that refers to the ability of an organization to procure goods, services and works in a cost-effective manner. It is a measure of how well an organization is able to acquire the goods and services it needs to run its operations, while minimizing the costs associated with the process. Specifically, also and in line with the objectives of this study, the study concludes that and also found that tender evaluation enhances procurement efficiency in the Rivers State Government Ministries.

## Recommendations

- i. Public Organizations in Rivers State should properly evaluate the tenders from vendors in order to ascertain the most suitable in terms of technical suitability, cost efficient and other capabilities.
- ii. Invest in training programs for procurement officials to enhance their skills and knowledge in areas such as contract management, negotiation, and risk assessment in order to improve transparency, accountability and reduce cost of Government spending.
- iii. There is need to enormously implement stringent procurement policies which encourage proper tendering processes in the Rivers State Government ministries.

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## Assessing the Influence of Community Participation on the Effectiveness of Community-Based Conflict Management in Delta State

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### Abstract

This research investigates how community participation influences the effectiveness of community-based conflict management in Delta State with a study focus on Ethiope East Local Government Area of Delta State. Guided by Social Capital Theory and Cultural Theory of Conflict, the study explores the extent to which trust, social relationships, and cultural norms shape grassroots conflict resolution. Data were generated from a random sample of 100 respondents using a structured questionnaire. Results show that inclusive participation, such as mediation by elders, family involvement, and community forums, plays a pivotal role in resolving disputes, promoting harmony, and reinforcing collective solidarity. However, the findings also highlight persistent obstacles, including inadequate resources, reluctance from disputants, and competition between indigenous mechanisms and the formal judicial system, which limit overall effectiveness. To address these issues, the study recommends stronger government engagement through capacity building, material support, and policy recognition of community-based approaches.

**Keywords:** *Community-Based Conflict Management (CBCM), Social Capital, Cultural Legitimacy*

### Introduction

Community participation is increasingly seen as a vital element in effective conflict management, especially at the local level where disputes are deeply rooted in social and cultural realities (Curcija, Breakey & Driml, 2019). This shift away from state-driven, top-down approaches to a more locally-grounded, inclusive framework is based on the idea that peace is more sustainable when those directly affected by conflict are active participants in shaping the outcomes (Zimmermann et al., 2009; Akudugu & Mahama, 2011). Community-based conflict management (CBCM) approaches are designed to harness this participation by leveraging indigenous practices, collective decision-making, and the moral authority of local actors (Chinwokwu, 2015). The renewed interest in these methods stems from the limitations of formal, state-centric mechanisms, which are often inaccessible, under-resourced, or distrusted by communities (Augusty & Dizon, 2020). A key strength of participatory CBCM is that it fosters ownership, accountability, and long-term peace by enabling affected individuals and groups to voice their concerns and co-create solutions (Akande, Kaye & Rukuni, 2021). Empirical evidence from various global contexts, including Africa and Latin America, shows a direct link between community involvement and the success of peace initiatives (Nwaka, 2020; Ashindorbe, Afatakpa & Owonikoko, 2021). Participation also enhances cultural sensitivity

and inclusivity, as community-led processes reflect shared values and reduce the likelihood of elite capture, thereby broadening the space for marginalized voices like women and youth (Curcija, Breakey & Driml, 2019; Akudugu & Mahama, 2011). Despite the growing recognition of participatory peacebuilding, there is a lack of empirical research on how community participation shapes the effectiveness of CBCM in specific local contexts, particularly in Nigeria (Chinwokwu, 2015; Yimer, 2021). This gap is particularly significant in the Ethiope East Local Government Area of Delta State, where conflicts have historically stemmed from ethnic rivalries and resource disputes, and it remains unclear to what extent broader community participation strengthens or weakens traditional resolution efforts (Akande, Kaye & Rukuni, 2021). While much of the existing research in Nigeria focuses on top-down frameworks, this study aims to fill the gap by systematically assessing the influence of community participation on the effectiveness of CBCM in this specific context (Augusty & Dizon, 2020; Smidt, 2020). The research seeks to provide a practical understanding of how inclusive participation contributes to legitimacy, social trust, and compliance with conflict resolution outcomes in a localized setting.

### Research Objectives

The main objective of this study is to assess the influence of community participation on the effectiveness of community-based conflict management in Delta State, Delta State. The specific objectives are to:

- i. identify the forms of community participation in community-based conflict management in Delta State;
- ii. examine the influence of community participation on the effectiveness of community-based conflict management in resolving disputes and fostering peace;
- iii. analyze the limitations affecting community participation in community-based conflict management processes

### Research Questions

The main research question guiding this study is: How does community participation influence the effectiveness of community-based conflict management in Delta State? The specific research questions are:

- i. What are the forms of community participation in community-based conflict management in Delta State?
- ii. In what ways does community participation influence the effectiveness of community-based conflict management in resolving disputes?
- iii. What limitations affect community participation in community-based conflict management processes?

### Significance of the Study

This study is significant because it fills a crucial gap in understanding how community participation shapes the effectiveness of community-based conflict management (CBCM) in Delta State. While CBCM has been widely acknowledged as a credible alternative to state-centric approaches, little empirical research has examined how the level, quality, and inclusiveness of participation influence outcomes in specific Nigerian contexts. By focusing on Ethiopia East, a multi-ethnic area with a history of communal disputes, this study provides context-specific evidence that contributes to both theory and practice in peacebuilding.

The findings will be valuable for policymakers seeking to strengthen community-driven conflict resolution mechanisms, as they will highlight practical ways of enhancing inclusive participation for sustainable peace. Practitioners and traditional institutions can also draw lessons on how to improve legitimacy, fairness, and acceptance of conflict resolution processes by involving diverse community groups such as women, youth, and minority stakeholders. For scholars, the research adds to the broader body of knowledge on participatory conflict management by offering empirical insights from a local Nigerian setting.

### Scope of the Study

The scope of this study is limited to Delta State with special focus on Ethiopia East Local Government Area. The research will specifically focus on how community participation influences the effectiveness of community-based conflict management practices within this locality. The study will engage diverse categories of stakeholders, including community members, traditional leaders, elders, youth, women, grassroots organizations, and local authorities, in order to capture the breadth of participation in conflict management processes.

Although the primary focus is on community-driven approaches, in context, the study will also consider the perspectives of institutional actors such as the police and local government officials, to understand the extent of collaboration and support between formal structures and community-led mechanisms.

### Review of Related Literature

The review of the literature and the theoretical framework that underpins the study on community-based conflict management approaches. This chapter then further contextualizes the study for the subsequent chapters. In line with this, the chapter will be organized along the following: Conflict Management and Communities, Community Participation, Effectiveness of Community Participation in CBCM, Community Participation and Social Cohesion in Conflict Management and Theoretical Framework

### Concept of Conflict Management

#### Conflict Management and Communities

Conflict is an unavoidable aspect of human interaction, and in most societies, it arises from competition over scarce resources, social differences, political struggles, or competing interests. In African communities, particularly rural and semi-urban areas, conflicts have historically been addressed through locally grounded mechanisms that rely on community members, elders, and traditional institutions rather than on external authorities or formal courts. This process is widely known as community-based conflict management (CBCM). Community-Based Conflict Management (CBCM) is a localized approach to resolving disputes that relies on the active participation of community members, elders, and traditional institutions rather than formal state systems (Curcija, Breakey & Driml, 2019). This method views conflict as a social problem requiring dialogue and reconciliation rather than just legal adjudication (Chinwokwu, 2015). A key strength of CBCM is its participatory nature, which ensures that diverse groups, including women and youth, are involved, fostering collective responsibility and increasing compliance with agreements (Akanke, Kaye & Rukuni, 2021; Smidt, 2020). Another strength is its cultural relevance, as it utilizes familiar practices like rituals and storytelling that resonate

with local values, making resolutions more legitimate and binding (Nwaka, 2020; Ashindorbe, Afatakpa & Owonikoko, 2021). Its localized nature also allows for flexible strategies tailored to specific community contexts (Zimmermann et al., 2009).

Despite its strengths, CBCM is not without limitations and is often viewed as a complement to, rather than a replacement for, formal institutions (Akudugu & Mahama, 2011). Traditional processes may reinforce power imbalances by excluding marginalized groups (Akande, Kaye & Rukuni, 2021), and CBCM can be inadequate for large-scale conflicts involving external actors or state-level issues (Yimer, 2021). The lack of formal legal backing can also limit the enforceability of some outcomes (Saleh, 2020). However, recent innovations are addressing these challenges. Communities are now blending traditional practices with modern tools and incorporating technology to enhance transparency and participation (Chinwokwu, 2015; Yimer, 2021). The effectiveness of CBCM is ultimately dependent on the quality of participation—when it is broad and meaningful, resolutions are more likely to be fair, legitimate, and enduring.

### **Community Participation**

Community participation is the cornerstone of community-based conflict management (CBCM), ensuring that individuals and groups are actively involved in problem-solving and decision-making (Bukari, 2023). This engagement gives legitimacy and sustainability to conflict resolution practices because it allows those affected by disputes to have a voice, making outcomes more likely to align with local values (Gilboa & Weiss-Gal, 2022). Without meaningful participation, conflict management risks being imposed from above, lacking the trust and ownership needed for lasting peace. Historically, traditional actors like elders and chiefs have been central to this process, their authority rooted in cultural recognition and a moral role as custodians of tradition (Marchetti & Tocci, 2020; Fisher et al., 2020). However, modern society has seen an evolution in participation to include a broader range of actors, such as civil society groups, women leaders, and youth organizations (Smidt, 2020), blending traditional legitimacy with contemporary inclusiveness.

The range of community actors involved in conflict resolution is diverse and context-specific. In many communities, traditional leaders rely on custom, while religious leaders use their moral authority to encourage reconciliation (Bodin, Mancilla-García & Robins, 2020; Musavengane & Kloppers, 2020). In places like Ethiopia East Local Government Area, this includes a blend of traditional leaders, local government officials, and civil society organizations (Bukari, 2023; Gilboa & Weiss-Gal, 2022). Additionally, institutional actors like the Nigeria

Police may collaborate with community structures, bridging the gap between informal practices and state authority (Väyrynen, 2023; Ibrahim et al., 2022). This multi-layered approach ensures resolutions are not only culturally sensitive but also align with national law. Ultimately, the effectiveness of CBCM depends on the quality of participation—whether it is inclusive and represents diverse groups. When participation is broad and meaningful, resolutions are more likely to be accepted and durable; conversely, when it's narrow or dominated by a few elites, peace is likely to be short-lived (Bukari, 2023).

### **Effectiveness of Community Participation in Community Based Conflict Management**

The effectiveness of Community-Based Conflict Management (CBCM) is directly tied to the level of community participation. CBCM, which utilizes locally defined and culturally embedded approaches to disputes, gains its effectiveness from its accessibility and ability to foster collective ownership (Curcija, Breakey & Driml, 2019). The most critical factor is inclusiveness in participation, as outcomes are more legitimate and durable when a wide range of actors—including women, youth, and religious leaders—are involved (Yimer, 2021). When conflict resolution is monopolized by a few elites, decisions lack legitimacy and may face resistance (Bukari, 2023). Cultural legitimacy is also crucial; people are more likely to accept resolutions that align with their traditions and norms (Akudugu & Mahama, 2011), although this must be balanced with inclusivity to avoid perpetuating inequalities (Nwaka, 2020). The timeliness and accessibility of CBCM, which are often faster than formal legal systems, also contribute to its perceived effectiveness (Smidt, 2020; Gilboa & Weiss-Gal, 2022).

Despite these strengths, the effectiveness of CBCM can be undermined by internal biases and inequalities that affect participation. Traditional structures often privilege men and elders, sidelining marginalized groups whose perspectives are critical for sustainable outcomes (Akande, Kaye & Rukuni, 2021; Marchetti & Tocci, 2020). Additionally, the lack of formal legal backing can limit the enforceability of resolutions, especially in disputes with trans-local dimensions (Saleh, 2020; Adedayo, 2020). However, recent innovations are strengthening CBCM effectiveness. Hybrid models are blending traditional practices with modern participatory frameworks to ensure both cultural relevance and inclusivity (Zimmermann et al., 2009). The use of technology and capacity-building initiatives are also expanding participation and improving transparency, making resolutions more credible and sustainable (Chinwokwu, 2015; Augusty & Dizon, 2020; Yimer, 2021; Demchuk et al., 2024).

### **Community Participation and Social Cohesion in Conflict Management**

Community participation is crucial for peacebuilding and conflict management, particularly where state institutions are weak. It goes beyond mere inclusion, fostering a sense of collective ownership and accountability (Pretty, 1995; Bukari, 2023). In the context of community-based conflict management (CBCM), participation involves the active engagement of diverse stakeholders, including men, women, youth, elders, and civic groups, in identifying disputes and implementing resolutions (Chambers, 1997; Yimer, 2021). This bottom-up approach is effective because those most affected by conflicts are best suited to articulate their needs and sustain peace agreements (Moyo & Anning, 2020). By fostering social cohesion and building relationships, participatory methods create a sense of shared responsibility that leads to greater legitimacy and voluntary compliance with resolutions (Chan, To & Chan, 2006; Ebubedike et al., 2023). This sense of collective ownership is key to ensuring that outcomes are viewed as products of the community's own input, rather than external impositions, thereby reducing the likelihood of non-compliance (Lamidi, 2021; Gilboa & Weiss-Gal, 2022).

However, there are challenges to effective participation. Tokenism, where participation is superficial without real influence, can lead to disillusionment (Pretty, 1995). Power dynamics can also distort the process, as elders or powerful individuals may dominate discussions, silencing the voices of women, youth, and marginalized groups (Akande, Kaye & Rukuni, 2021; Ibrahim et al., 2022). Additionally, conflict fatigue can lead to apathy, hindering deep engagement in protracted disputes (Väyrynen, 2023). Despite these challenges, modern approaches are evolving. Hybrid models are emerging that combine traditional practices with modern frameworks, ensuring inclusivity and human rights (Zimmermann et al., 2009; Musavengane & Kloppers, 2020). These models, often supported by NGOs, build local capacity for dialogue and negotiation, empowering communities to manage future conflicts and increasing the effectiveness of CBCM initiatives (Curcija, Breakey & Driml, 2019; Demchuk et al., 2024).

### **Theoretical Framework**

The study is further understood by the social capital theory developed by Pierre Bourdieu and cultural theory of conflict by Mary Douglas. These theories are taken as the framework upon which the study is theorized.

#### **Social Capital Theory**

Social capital theory offers a valuable framework for understanding how community participation influences the effectiveness of community-based conflict management (CBCM). Rooted in the works

of Pierre Bourdieu (1986), James Coleman (1988), and Robert Putnam (1993), the theory highlights how networks, trust, and norms serve as valuable assets for both individuals and communities (Gannon & Roberts, 2020). The strength of social ties, whether bonding (within groups), bridging (across groups), or linking (with institutions), directly impacts a community's ability to manage conflict (Lang & Hornburg, 1998; Perkins, Hughey & Speer, 2002). In places like Ethiopia's East Local Government Area (LGA), the density of these networks and the embedded trust are crucial for negotiating and resolving disputes, as trust itself reduces negotiation costs and enhances cooperation (Falk & Kilpatrick, 2000).

The theory also clarifies that participation in CBCM is not just about presence but about the quality of involvement, inclusivity, and ownership over outcomes (Zimmermann et al., 2009). While strong bonding capital can foster solidarity, it can also entrench divisions, making bridging capital essential for multi-ethnic communities to facilitate dialogue across diverse groups (Akudugu & Mahama, 2011; Yimer, 2021). Linking capital, or connections with external institutions like government agencies, further enhances CBCM by providing support for enforcement and access to resources (Adedayo, 2020; Bukari, 2023). However, the theory also warns that social capital can be unequally distributed, reinforcing power imbalances and potentially undermining inclusivity and sustainability (Marchetti & Tocci, 2020; Ibrahim et al., 2022). Therefore, cultivating balanced social capital—nurturing bonding, bridging, and linking ties—is crucial for ensuring that CBCM processes are just, legitimate, and resilient (Musavengane & Kloppers, 2020).

#### **Cultural Theory of Conflict**

The cultural theory of conflict, drawing on anthropology and sociology, argues that cultural norms and values significantly influence how conflicts emerge and are resolved. According to this framework, developed by scholars such as Clifford Geertz (1973) and Mary Douglas (MacDonald, 2009), disputes are never value-neutral but are instead shaped by culturally specific ideas of justice, order, and relationships. Edward T. Hall and Kevin Avruch further posited that conflict dynamics are inseparable from their cultural context, as culture dictates how grievances are framed and how reconciliation is pursued (Avruch & Black, 1987; Ross, 1986). Different cultures have distinct understandings of what constitutes a conflict, who has the authority to resolve it, and what a satisfactory resolution entails (Gibson & McDaniel, 2010). This theory highlights that the effectiveness of conflict resolution depends on its alignment with culturally defined notions of legitimacy and justice.

When applied to community-based conflict management (CBCM), the cultural theory reveals

that culture acts as a gatekeeper of participation. Cultural norms determine who can speak and mediate disputes, often privileging elders and chiefs while marginalizing women and youth (Chinwokwu, 2015). The theory also underscores the importance of cultural symbols and rituals in fostering trust and embedding resolutions within the community's moral fabric, transforming agreements into socially binding commitments (Avruch & Black, 1987). However, it also points to the risks of cultural exclusivity, where norms can reinforce inequalities and silence marginalized voices, potentially undermining the long-term effectiveness of resolutions (Nwaka, 2020; Ibrahim et al., 2022). In multi-ethnic societies, cultural pluralism can complicate conflict resolution when groups hold divergent notions of justice, necessitating culturally inclusive and adaptable approaches (Zimmermann et al., 2009; Demchuk et al., 2024). Ultimately, the theory emphasizes that meaningful participation and lasting conflict resolution require a deep understanding of the cultural context.

## Methodology

### Research Design

The study adopts a quantitative research design with a survey approach. This design is considered appropriate because it allows for the collection of standardized data from a relatively large sample of respondents, thereby enabling statistical analysis and interpretation.

### Study Area

The study is conducted in Delta State comprised of three (3) senatorial Districts (Delta North, Delta Centra, and Delta South) but the focus is on Delta Central which is made up of eith (8) local government authorities of which the special focus is on Ethiope East Local Government Area of the State, Nigeria, situated in the southern part of the country within the Niger Delta region. The LGA covers an approximate landmass of 283 square kilometers, with Isiokolo serving as the administrative headquarters. Geographically, Ethiope East is bordered by Ukwuani LGA to the north, Ethiope West LGA to the west, and Ughelli North LGA to the east. Its location makes it a strategic administrative and cultural corridor connecting several communities across Delta State.

The area is characterized by a blend of tropical rainforest and riverine ecology, with the River Ethiope serving as its most prominent natural feature. The River Ethiope, one of the cleanest inland waters in Africa, originates from Umuaja in Ukwuani and flows through Abraka, where it forms a major ecological and tourism attraction. The river sustains local fishing, irrigation, and eco-tourism activities, while also playing an important role in the social and cultural life of the people. The area experiences a humid tropical climate, marked by two distinct

seasons: the rainy season (April to October) and the dry season (November to March), with an annual rainfall of about 2,000mm and an average temperature ranging between 25°C and 32°C. These climatic conditions support the rich agricultural productivity of the area. In terms of demography, Ethiope East had a recorded population of about 112,000 people in the 2006 national census, with projections indicating significant growth over the past two decades. The population is largely composed of the Urhobo ethnic group, who are the indigenous inhabitants of the area. However, due to the presence of Delta State University in Abraka and other economic opportunities in towns like Eku and Okpara, there is also a visible population of non-indigenous residents, including Igbo, Yoruba, and Hausa migrants who contribute to local commerce and service industries.

The population structure reflects a high proportion of young people, which has implications for both development opportunities and conflict dynamics, particularly in relation to youth unemployment and social unrest. Economically, Ethiope East thrives predominantly on agriculture, trading, and education. The fertile soil and favorable climatic conditions support large-scale farming of cassava, yam, maize, and plantain, while oil palm and rubber plantations provide important cash crops. Towns like Okpara and Ovu are agrarian centers, contributing significantly to food production and local trade. Abraka stands out as the commercial and educational hub of the LGA, hosting Delta State University, which attracts thousands of students and academic staff from across Nigeria. This has stimulated small and medium-scale businesses, hospitality services, and transportation networks in the town. Eku, another significant town, is renowned for the historic Eku Baptist Hospital, which for decades served as one of the foremost missionary hospitals in Nigeria and continues to function as a regional healthcare center.

The cultural life of Ethiope East is rich and diverse, largely shaped by the traditions of the Urhobo people. The area is known for colorful festivals such as the annual Ohworu festival in Abraka and the Iyerin festival in Okpara, both of which are rooted in communal spirituality, identity, and social cohesion. Music, dance, folklore, and traditional cuisines also form integral aspects of community life.

Importantly, traditional institutions such as the Ovie (traditional ruler), council of chiefs, and village elders play pivotal roles in governance, dispute resolution, and the preservation of cultural heritage. These institutions remain central to conflict management, as they embody authority, legitimacy, and continuity in the eyes of the people. In terms of governance, Ethiope East operates as one of the 25 LGAs in Delta State, with an elected chairman and councilors constituting the local government council. The council is responsible for providing basic services such as primary education, healthcare,

sanitation, and local security in collaboration with state and federal agencies. However, like many LGAs in Nigeria, Ethiopia East faces challenges such as inadequate infrastructure, limited access to quality healthcare in rural areas, and persistent unemployment among young people. These socio-economic challenges contribute to periodic conflicts within communities, including land disputes, chieftaincy tussles, youth restiveness, and inter-communal disagreements.

### Study Population

The study population comprises the estimated 112,000 residents of Ethiopia East LGA, as recorded in the 2006 census. However, the focus is not on the general population but on stakeholders who are directly or indirectly involved in community-based conflict management. These include community leaders, traditional rulers, youth leaders, women leaders, local authorities, community members, and representatives of security institutions such as the Nigeria Police. This diverse group of participants is targeted to ensure a comprehensive understanding of how community participation shapes the effectiveness of conflict management strategies.

### Sampling Technique and Sample Size

A simple random sampling technique is employed to ensure fairness in the selection of respondents and to reduce bias. The sampling frame is derived from population data obtained from the LGA secretariat at Isiokolo. Randomization allows each member of the target population an equal chance of being included in the study. The sample size was determined using Taro Yamane's formula:  $n = \frac{N}{1 + N(e)^2}$ , where  $N$  signifies the population being studied,  $e$  = *significant error margin* while  $1$  = **Constant**, and  $n$  as the sample size. Given the values are known where,  $N=112,000$  and  $e= 0.5$ , the procedure can be calculated as follows;

$$n = 112,000 / 1 + 112,000 (0.5)^2$$

$$n = 112,000 / 1 + 112,000 \times 0.0025$$

$$n = 112,000 / 1 + 280$$

$$n = 112,000 / 281$$

$$n = 398.5765$$

However, given the cost implication of absorbing a sample of this size into the study, a  $\frac{1}{4}$  of ' $n$ ' will be taken to lessen the cost burden. Hence

$$n = \frac{1}{4} \times 398.5765$$

$$n = 99.64$$

$$n = 100 \text{ (Rounded Off)}$$

Then adopting a simple random sampling, the list of names were shuffled and with an interval of 1110, a total of 100 respondents were respondents were arrived at.

### Method of Data Collection

Data for this study were collected through the use of a structured questionnaire, which served as the main research instrument. The first section, Section A, focused on demographic information. Here, questions were included to gather data on the age, gender, educational attainment, occupation, and length of residency of respondents in Ethiopia East. The second section, Section B, was developed to address the first research objective, which sought to identify the forms of community participation in community-based conflict management within the study area. Section C corresponded to the second research objective, which was to examine the influence of community participation on the effectiveness of community-based conflict management. To measure the strength of these perceptions, a five-point Likert scale was employed, ranging from "Strongly Agree" to "Strongly Disagree." The fourth section, Section D, was tailored to the third research objective, which aimed to analyze the limitations affecting community participation in community-based conflict management processes. This section contained questions that addressed potential barriers.

### Method of Data Analysis

Data analysis employs descriptive statistics, including tables, frequency counts, and percentages, to summarize and interpret the survey responses. Results are presented thematically, aligning with the research objectives and findings from the descriptive statistics. This thematic presentation helps in organizing the data into coherent categories for further analysis. The discussion then connects these findings to existing literature and the theoretical framework guiding the study. By linking the results back to relevant theories and prior research, the analysis aims to provide a well-rounded understanding of community participation and conflict resolution in East Local Government.

## RESULT AND DISCUSSION

### Data Presentation, Analysis and Interpretation

This section focuses on the analysis of data gathered from field, interpretation and presentation of results.

**Table 4.1 Analysis of Socio-Demographics**

| Item      | Options  | Frequency (n) | Percentage (%) | Mean Score |
|-----------|----------|---------------|----------------|------------|
| Sex       | Male     | 52            | 52%            | 0.52       |
|           | Female   | 48            | 48%            | 0.48       |
| Age Group | Below 20 | 12            | 12%            | 0.12       |
|           | 20–29    | 28            | 28%            | 0.28       |



|                   |                     |     |      |      |
|-------------------|---------------------|-----|------|------|
|                   | 30–39               | 26  | 26%  | 0.26 |
|                   | 40–49               | 18  | 18%  | 0.18 |
|                   | 50 and above        | 16  | 16%  | 0.16 |
| Occupation        | Farmer              | 18  | 18%  | 0.18 |
|                   | Trader              | 32  | 32%  | 0.32 |
|                   | Civil Servant       | 20  | 20%  | 0.20 |
|                   | Artisan             | 14  | 14%  | 0.14 |
|                   | Other               | 16  | 16%  | 0.16 |
| Educational Level | No Formal Education | 8   | 8%   | 0.08 |
|                   | Primary             | 22  | 22%  | 0.22 |
|                   | Secondary           | 38  | 38%  | 0.38 |
|                   | Tertiary            | 32  | 32%  | 0.32 |
| Residency         | Urban               | 58  | 58%  | 0.58 |
|                   | Rural               | 42  | 42%  | 0.42 |
| <b>Total</b>      |                     | 100 | 100% | 1.00 |

*Source: Researcher's compilation, 2025*

Gender distribution shows a relatively balanced sample, with males making up 52 percent and females 48 percent. This balance is significant for the study since both genders contribute differently to conflict management processes: men often dominate formal and traditional leadership roles, while women play critical roles in grassroots mobilization, peace advocacy, and informal dispute resolution. The age distribution indicates that the most represented group is between 20–29 years (28 percent), followed closely by the 30–39 group (26 percent). Together, these categories make up more than half of the respondents, emphasizing the central role of youth and middle-aged adults in conflict dynamics. Younger respondents (below 20 years, 12 percent) reflect emerging participation, often as witnesses or indirect actors, while older respondents aged 50 and above (16 percent) remain important custodians of traditions, providing wisdom and legitimacy in conflict resolution. Occupationally, traders dominate with 32 percent, followed by civil servants (20 percent) and farmers (18 percent). This suggests that economic activities tied to commerce and agriculture are central to community stability, as disputes often arise around market interactions, land, and resource

use. Artisans (14 percent) and those in other occupations (16 percent) bring additional perspectives, highlighting the breadth of community involvement across different economic sectors. Educational levels show that the majority of respondents have secondary education (38 percent), followed by tertiary education (32 percent). This indicates that most participants have sufficient literacy to engage in structured dialogue, documentation, and organized conflict resolution processes. However, the 30 percent combined share of respondents with only primary or no formal education underscores the persistence of informal and oral mechanisms in conflict resolution, ensuring accessibility to all members regardless of literacy level. Residency patterns reveal that 58 percent of respondents live in urban centers such as Abraka and Eku, while 42 percent reside in rural areas like Okpara and Ovu. This distribution reflects the duality of Ethiopia East, where urban dwellers may be exposed to formal conflict management systems, while rural dwellers rely more on traditional institutions and communal values. This blend offers a holistic understanding of how community participation is influenced by location and exposure.

**Table 4.2 Forms of Community Participation in Conflict Management**

| Item                                                        | Options                 | Frequency (n) | Percentage (%) | Mean Score |
|-------------------------------------------------------------|-------------------------|---------------|----------------|------------|
| Awareness of community participation in conflict management | Yes                     | 88            | 88%            | 0.88       |
|                                                             | No                      | 12            | 12%            | 0.12       |
| <b>Total</b>                                                |                         | 100           | 100%           | 1.00       |
| Forms of participation observed                             | Elders/Chiefs mediation | 62            | 62%            | 0.62       |
|                                                             | Youth group involvement | 55            | 55%            | 0.55       |
|                                                             | Women's associations    | 48            | 48%            | 0.48       |
|                                                             | Religious leaders       | 42            | 42%            | 0.42       |
|                                                             | Vigilante groups        | 36            | 36%            | 0.36       |
|                                                             | Local government/police | 28            | 28%            | 0.28       |

|                                                         |              |     |      |      |
|---------------------------------------------------------|--------------|-----|------|------|
|                                                         | support      |     |      |      |
| <b>Total</b>                                            |              | 100 | 100% | 1.00 |
| Frequency of community involvement                      | Rarely       | 12  | 12%  | 0.12 |
|                                                         | Occasionally | 34  | 34%  | 0.34 |
|                                                         | Often        | 38  | 38%  | 0.38 |
|                                                         | Always       | 16  | 16%  | 0.16 |
| <b>Total</b>                                            |              | 100 | 100% | 1.00 |
| Are cultural norms/customs considered in participation? | Yes          | 87  | 87%  | 0.87 |
|                                                         | No           | 13  | 13%  | 0.13 |
| <b>Total</b>                                            |              | 100 | 100% | 1.00 |

Source: Author's Field Survey, 2024

The findings reveal that community participation in conflict management is a widely recognized practice in Ethiopia East, with 88 percent of respondents (mean = 0.88) acknowledging its existence. Only 12 percent reported being unaware of such practices, underscoring the embedded nature of participatory conflict management in the area. Among the forms of participation, elders and chiefs play the most dominant role, as reported by 62 percent of respondents (mean = 0.62). This reflects their traditional authority and legitimacy in resolving disputes, often through dialogue and mediation. Youth groups were also widely acknowledged (55 percent, mean = 0.55), highlighting their role in either preventing violence or mobilizing collective responses to conflicts. Women's associations (48 percent, mean = 0.48) emerged as vital actors, especially in promoting reconciliation and advocating non-violent approaches to dispute resolution. Religious leaders (42 percent, mean = 0.42) were recognized as trusted mediators, often leveraging moral authority to influence disputing parties. Vigilante groups (36 percent, mean = 0.36) were reported to play a complementary role,

particularly in maintaining order and preventing escalation into violence. Meanwhile, formal institutions such as the police and local government representatives were mentioned by 28 percent (mean = 0.28), suggesting that although present, their roles are less dominant compared to indigenous mechanisms. In terms of frequency, 38 percent of respondents indicated that community participation occurs often, while 34 percent said it happens occasionally. A smaller proportion, 16 percent, reported that these practices are always employed, while 12 percent described them as rare. This distribution suggests that although community involvement is widespread, its intensity varies depending on the nature and scale of disputes. Finally, 87 percent of respondents (mean = 0.87) affirmed that cultural norms and customs are considered during conflict management processes. This reflects the reliance on indigenous values, communal identity, and customary laws as the foundation for resolving disputes. Only 13 percent reported otherwise, which may reflect the growing influence of formal, statutory mechanisms in some areas.

**Table 4.3 Analysis of the Influence of Community Participation on Effectiveness**

| Item                                                            | Options                         | Frequency (n) | Percentage (%) | Mean Score |
|-----------------------------------------------------------------|---------------------------------|---------------|----------------|------------|
| How effective is community participation in resolving disputes? | Not Effective                   | 8             | 8%             | 0.08       |
|                                                                 | Moderately Effective            | 32            | 32%            | 0.32       |
|                                                                 | Highly Effective                | 60            | 60%            | 0.60       |
| <b>Total</b>                                                    |                                 | 100           | 100%           | 1.00       |
| Outcomes achieved through participation                         | Reduction of recurring disputes | 68            | 68%            | 0.68       |
|                                                                 | Fairness in resolution process  | 55            | 55%            | 0.55       |
|                                                                 | Satisfaction with outcomes      | 50            | 50%            | 0.50       |
|                                                                 | Restoration of peace            | 72            | 72%            | 0.72       |
| <b>Total</b>                                                    |                                 | 100           | 100%           | 1.00       |

|                                                                               |          |     |      |      |
|-------------------------------------------------------------------------------|----------|-----|------|------|
| Do you believe community participation makes conflict resolution sustainable? | Yes      | 83  | 83%  | 0.83 |
|                                                                               | No       | 17  | 17%  | 0.17 |
| <b>Total</b>                                                                  |          | 100 | 100% | 1.00 |
| Level of community trust in participatory methods                             | Low      | 12  | 12%  | 0.12 |
|                                                                               | Moderate | 38  | 38%  | 0.38 |
|                                                                               | High     | 50  | 50%  | 0.50 |
| <b>Total</b>                                                                  |          | 100 | 100% | 1.00 |

Source: Author's Field Survey, 2024

The results indicate that community participation is widely perceived as enhancing the effectiveness of conflict management in Ethiopia East. A majority of respondents (60%, mean = 0.60) rated participation as highly effective, while 32% considered it moderately effective, and only 8% viewed it as ineffective. Regarding outcomes, the most reported benefit of community participation was the restoration of peace (72%, mean = 0.72), followed closely by the reduction of recurring disputes (68%, mean = 0.68). Fairness in the resolution process (55%, mean = 0.55) and satisfaction with outcomes (50%, mean = 0.50) were also acknowledged, showing that participatory approaches not only

resolve conflicts but also build legitimacy and acceptance of resolutions. On sustainability, 83% of respondents (mean = 0.83) agreed that community involvement makes conflict management more enduring, while 17% expressed doubt. This suggests strong confidence in participatory mechanisms as long-term solutions. Finally, levels of trust in participatory methods were rated high by half of the respondents (50%, mean = 0.50), moderate by 38%, and low by 12%. This demonstrates that while confidence in participation is generally strong, some reservations remain, likely reflecting occasional disputes over fairness or inclusivity.

#### Limitations Affecting Community Participation in Conflict Management

Source: Author's Field Survey, 2024

| Item                                                             | Options                                | Frequency (n) | Percentage (%) | Mean Score |
|------------------------------------------------------------------|----------------------------------------|---------------|----------------|------------|
| What challenges hinder participation in conflict management?     | Inadequate resources                   | 65            | 65%            | 0.65       |
|                                                                  | Political interference                 | 52            | 52%            | 0.52       |
|                                                                  | Weak institutional support             | 48            | 48%            | 0.48       |
|                                                                  | Exclusion of women and youth           | 35            | 35%            | 0.35       |
|                                                                  | Cultural biases                        | 28            | 28%            | 0.28       |
|                                                                  | Lack of trust in formal institutions   | 22            | 22%            | 0.22       |
| <b>Total</b>                                                     |                                        | 100           | 100%           | 1.00       |
| Do you think younger generations actively support these methods? | Yes                                    | 55            | 55%            | 0.55       |
|                                                                  | No                                     | 45            | 45%            | 0.45       |
| <b>Total</b>                                                     |                                        | 100           | 100%           | 1.00       |
| How can these challenges be addressed?                           | Greater government support             | 62            | 62%            | 0.62       |
|                                                                  | Capacity building for community actors | 50            | 50%            | 0.50       |
|                                                                  | Inclusion of women and youth           | 40            | 40%            | 0.40       |
|                                                                  | Awareness campaigns                    | 30            | 30%            | 0.30       |
| <b>Total</b>                                                     |                                        | 100           | 100%           | 1.00       |

The findings indicate that community participation in conflict management faces significant constraints in Ethiopia East. The most pressing challenge identified was inadequate resources (65%, mean = 0.65), followed by political interference (52%, mean = 0.52) and weak institutional support (48%, mean = 0.48). Social issues such as exclusion of women and youth (35%) and cultural biases (28%) were also reported as barriers, while 22% of respondents cited lack of trust in formal institutions as an additional limitation. Regarding generational attitudes, a slight majority (55%, mean = 0.55) agreed that younger generations support community-based methods, but 45% felt otherwise, suggesting intergenerational differences in perceptions of traditional approaches. Proposed solutions to address these limitations centered on stronger government support (62%), capacity building for community actors (50%), and deliberate inclusion of women and youth (40%). Awareness campaigns (30%) were also highlighted as a strategy for strengthening acceptance and participation.

### Discussion of Findings

The results suggest that community participation in conflict management is both widespread and diverse, involving community leaders, family or clan representatives, and traditional councils, with processes often guided by local customs and norms. This supports the cultural theory of conflict, which emphasizes that dispute resolution is most effective when rooted in culturally accepted practices. It also affirms the social capital perspective, as these practices rely on trust, reciprocity, and close social networks. The involvement of multiple actors indicates that conflict resolution in Ethiopia East is not an isolated effort but rather a collective responsibility, reinforcing the argument that participation is central to the legitimacy and sustainability of local peace initiatives. Community participation was found to enhance both the outcomes and the credibility of conflict management. Disputes resolved through traditional structures not only achieve settlements but also strengthen social ties and reinforce a sense of community belonging. This finding aligns with social capital theory, which links active participation and trust-building to cooperative outcomes. It also resonates with the cultural theory of conflict, as the reliance on customs ensures that solutions are perceived as fair and legitimate. Taken together, these insights indicate that when communities actively participate in conflict resolution, the process is more likely to foster peace, reduce recurrence, and promote long-term cohesion.

Despite these strengths, participation is constrained by challenges such as inadequate resources, political interference, exclusion of certain groups, and declining

influence of traditional authority. These limitations complicate the ideal picture painted by social capital theory, showing that trust and cooperation can be unevenly distributed, with some groups more included than others. Similarly, cultural theory helps explain both the strengths and weaknesses of community-based conflict management: while cultural traditions legitimize the process, they also reinforce biases that marginalize women, youth, and dissenting voices. The findings therefore highlight that participation, though effective, is not without vulnerabilities, and addressing these requires institutional support, inclusivity, and adaptation to changing social contexts.

### Summary, Conclusion and Recommendations

#### Summary

This study assessed the influence of community participation on the effectiveness of community-based conflict management (CBCM) in Ethiopia East Local Government Area. The findings revealed that participation is expressed through various community structures, including traditional councils, elders, women's associations, and youth groups. These practices are rooted in local customs and norms, relying on culturally sanctioned mediation and arbitration to settle disputes. The reliance on local traditions ensures that conflict resolution is not just a social necessity but also a continuation of cultural heritage.

The study also found that community participation significantly enhances the effectiveness of conflict management. Active involvement leads to peaceful settlements, restores relationships, and strengthens community ties. Participation fosters fairness by directly involving community members in shaping resolutions, which reduces perceptions of bias. The sustainability of these outcomes is affirmed by the community's trust in these traditional methods. However, the study identified several limitations, including inadequate resources, political interference, and cultural biases that restrict the involvement of women and youth. Despite these challenges, the findings suggest that CBCM can remain relevant through continued support and adaptation.

#### Conclusion

This study has shown that community participation is central to the effectiveness of conflict management in Ethiopia East. Traditional actors such as elders, family representatives, and local councils provide culturally grounded mechanisms that ensure fairness, legitimacy, and sustainability in resolving disputes. Active participation not only reduces recurring conflicts but also strengthens social cohesion and peace within the community. However, limitations such as inadequate resources, political interference, and exclusion of certain groups remain significant barriers. Addressing

these challenges through institutional support and inclusivity is crucial for enhancing the long-term effectiveness of community-based conflict management.

### Recommendations

Given the findings from this study then, the following recommendations are provided:

- i. To strengthen the forms of community participation, there should be deliberate inclusion of women, youth, and marginalized groups in conflict management processes to broaden representation and legitimacy.
- ii. To improve the effectiveness of community-based conflict management, local authorities and civil society should provide structured support, such as training and resources, for traditional actors to enhance fairness and sustainability in dispute resolution.
- iii. To address limitations to participation, stronger collaboration between community institutions and formal governance structures is needed, with clear policies to reduce political interference and reinforce trust in traditional mechanisms.

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## Blockchain Technology and Business Performance of Selected Manufacturing Firms in Delta State, Nigeria.

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### Abstract

*This study examined the effect of blockchain technology on the business performance of selected manufacturing firms in Delta State, Nigeria. The specific objectives were to evaluate the effect of blockchain transparency, traceability, security, and data integrity on business performance. A total of 150 questionnaires were distributed, out of which 140 were correctly completed and analyzed using descriptive statistics and multiple regression analysis with the aid of SPSS. Qualitative data were also obtained through interviews with management staff to provide deeper insights into blockchain adoption practices. The findings revealed that blockchain transparency, traceability, security, and data integrity each exert a positive and significant influence on business performance. Among these variables, blockchain security had the strongest effect, followed by data integrity, transparency, and traceability. The study further showed that blockchain implementation enhances operational efficiency, strengthens supply chain visibility, safeguards data, and improves organizational trust and accountability. The study concludes that blockchain technology significantly improves the business performance of manufacturing firms by promoting secure, transparent, and efficient operations. It recommends that firms should invest in blockchain infrastructure, build employee capacity, and integrate blockchain systems into supply chain operations while government and regulatory bodies should develop clear policies to encourage widespread adoption. The research contributes to knowledge by providing empirical evidence on the role of blockchain dimensions—transparency, traceability, security, and data integrity—in enhancing the performance of manufacturing firms within a developing economy context. The study also offers practical insights for managers and policymakers on leveraging blockchain for industrial competitiveness and sustainability.*

**Keywords:** Blockchain Technology, Business Performance, Transparency, Traceability, Security, Data Integrity, Manufacturing Firms, Delta State, Nigeria.

### Introduction

Blockchain technology has emerged as a transformative force across various industries, offering solutions that enhance transparency, traceability, security, and data integrity. In the manufacturing sector, these attributes are pivotal in optimizing operations and improving business performance. This study delves into the impact of blockchain technology, focusing on its facets of transparency, traceability, security, and data integrity, on the business performance of selected manufacturing firms in Delta State, Nigeria. The manufacturing industry is a cornerstone of economic development, contributing significantly to employment and GDP. However, it faces challenges such as supply chain inefficiencies, counterfeit products, and data breaches, which can impede performance (Azzì, et al 2019). Blockchain technology, with its decentralized

and immutable ledger system, offers potential solutions to these issues. By recording transactions across a distributed network, blockchain ensures that data is transparent, traceable, and secure, thereby enhancing operational efficiency and trust among stakeholders (Casino, et al 2019).

Transparency in manufacturing processes is crucial for building trust with consumers and partners. Blockchain's decentralized ledger records all transactions in a manner that is accessible and verifiable by all authorized participants (Dai & Vasarhelyi, 2017). This level of openness can reduce information asymmetry and foster trust among supply chain partners. For instance, a study highlighted that by using a distributed ledger system, all transactions are recorded and can be accessed by anyone on the

network, helping to reduce corruption, fraud, and other illegal activities (Dobrovnik, et al, 2018).

Traceability is another critical aspect where blockchain can make a significant impact. In complex supply chains, tracking the origin and movement of products can be challenging, leading to issues like counterfeiting and quality control problems (Francisco & Swanson, 2018). Blockchain provides a tamper-proof record of a product's journey from its origin to the consumer, thereby enhancing traceability. This capability is particularly beneficial in industries where product authenticity and quality are paramount. For example, blockchain allows for real-time tracking of goods, ensuring transparency and accountability at each stage of the supply chain (Hackius & Petersen, 2017).

Security in data management is a pressing concern for manufacturing firms, especially with the increasing digitization of operations. Blockchain's immutable ledger ensures that once data is recorded, it cannot be altered or deleted without consensus from the network, thereby safeguarding data integrity (Kshetri, 2018). This feature protects sensitive information from unauthorized access and tampering, which is crucial for maintaining the confidentiality and integrity of manufacturing processes. Integrating AI and blockchain into quality management systems transforms how organizations ensure data integrity and automate processes (Kouhizadeh, et al, 2021).

Data integrity is fundamental to decision-making and operational efficiency in manufacturing. Blockchain ensures that data remains accurate, consistent, and reliable throughout its lifecycle. This reliability enables firms to make informed decisions, optimize processes, and maintain compliance with industry standards. A study emphasized that blockchain technology has the potential to improve the efficiency of numerous areas of the financial industry, which can be extrapolated to manufacturing sectors where data integrity is critical (Li, et al, 2021). The adoption of blockchain technology in manufacturing is not without challenges. Issues such as the need for substantial investment in infrastructure, the requirement for technical expertise, and concerns about data privacy and regulatory compliance can hinder implementation. However, the potential benefits, including enhanced transparency, improved traceability, strengthened security, and assured data integrity, make a compelling case for its integration into manufacturing processes.

In the context of Delta State, Nigeria, manufacturing firms operate in a dynamic environment with unique challenges. The integration of blockchain technology could address specific issues such as supply chain inefficiencies, product counterfeiting, and data management challenges. By enhancing transparency and traceability, firms can build trust with consumers and partners, leading to improved market

competitiveness. Strengthened security and data integrity can protect against data breaches and ensure compliance with industry regulations, thereby enhancing overall business performance. Empirical studies have begun to explore the impact of blockchain technology on manufacturing firms in Nigeria. For instance, a study of Chukwu, et al (2024), investigated materials management and the adoption of blockchain technology on supply chain efficiency in Nigerian Breweries Plc Ama, Enugu. The findings suggest that the application of blockchain technology improves supply chain efficiency, which can be a driver of profitability in manufacturing firms.

Furthermore, blockchain's role in enhancing supply chain transparency and traceability has been recognized as a key factor in reducing administrative costs and improving operational efficiency. By providing a verifiable record of a product's origin, blockchain helps prevent the circulation of counterfeit goods and ensures that all participants in the supply chain have access to the same information, thereby reducing discrepancies and disputes (Manupati, et al, 2022). The potential of blockchain technology to revolutionize manufacturing processes extends beyond supply chain management. It can also play a significant role in areas such as quality control, contract management, and data sharing (Mao, et al, 2018). For example, in quality control, blockchain can establish tamper-proof records, boosting consumer confidence in the products. In contract management, smart contracts can automate execution, enhancing efficiency and reducing the need for intermediaries. Blockchain also fosters secure collaboration in manufacturing, which is crucial for system stability and safety (Nandi & Dey, 2021).

Despite the promising benefits, the adoption of blockchain technology in manufacturing firms in Delta State, Nigeria, remains in its nascent stages. Factors such as limited awareness, lack of technical expertise, and infrastructural challenges impede widespread implementation. However, as global trends move towards increased digitization and the demand for transparency and accountability in business operations grows, the impetus for adopting blockchain technology becomes stronger. Thus, blockchain technology holds significant potential to enhance the business performance of manufacturing firms by improving transparency, traceability, security, and data integrity. While challenges to adoption exist, the benefits offer a compelling case for integration into manufacturing processes. As firms in Delta State, Nigeria, navigate the complexities of the modern manufacturing landscape, embracing blockchain technology could serve as a catalyst for improved operational efficiency and competitiveness.



## The Problem

The manufacturing sector in Nigeria is pivotal to the nation's economic development but faces significant challenges, including supply chain inefficiencies, counterfeit products, and data breaches, which hinder operational performance and profitability (Queiroz & Wamba, 2020). Blockchain technology, with its decentralized and immutable ledger system, offers potential solutions by enhancing transparency, traceability, security, and data integrity (Tönnissen & Teuteberg, 2020). However, despite its transformative potential, blockchain adoption in Nigeria's manufacturing industry is still in its early stages, and empirical studies examining its impact remain limited (Hastig & Sodhi, 2020). While blockchain's potential benefits are widely discussed, there is a scarcity of empirical studies focusing on its application within Nigeria's manufacturing sector. Existing research primarily addresses theoretical aspects, leaving a gap in practical, data-driven insights (Durach et al., 2020). Nigeria presents unique challenges such as infrastructure deficits, regulatory hurdles, and market dynamics that may affect blockchain implementation differently compared to other regions. Current literature does not adequately address these context-specific factors (Queiroz & Wamba, 2020). Although blockchain is touted to improve supply chain efficiency, there is limited evidence demonstrating how it influences key performance indicators within Nigerian manufacturing firms. Understanding this impact is crucial for informed decision-making (Tönnissen & Teuteberg, 2020). Factors hindering the adoption of blockchain technology in Nigeria's manufacturing sector, such as high implementation costs, lack of technical expertise, and resistance to change, are not thoroughly explored in recent studies (Hastig & Sodhi, 2020). Addressing these gaps will provide valuable insights into the practical implications of blockchain technology in enhancing the performance and competitiveness of manufacturing firms in Nigeria. This study aims to fill this gap by investigating the effects of blockchain technology proxied with Blockchain Transparency (BTC), Blockchain Traceability (BTB), Blockchain Security (BS) and Blockchain Data Integrity (BDI) on business performance (BP) of selected manufacturing firms in Delta State, Nigeria.

## Research Questions

- v. How does blockchain transparency affect the business performance of selected manufacturing firms in Delta State?
- vi. What is the effect of blockchain traceability on business performance of selected manufacturing firms in Delta State?

- ii. To what extent does blockchain security contribute to business performance of selected manufacturing firms in Delta State?
- iii. How does blockchain-enhanced data integrity influence business performance of selected manufacturing firms in Delta State?

## Objectives of the Study

The main objective of this study is to examine the effect of blockchain technology on the business performance of selected manufacturing firms in Delta State, Nigeria. The specific objectives are:

- to evaluate the effect of blockchain transparency on business performance of selected manufacturing firms in Delta State.
- i. to determine the influence of blockchain traceability on business performance of selected manufacturing firms in Delta State.
- ii. to assess the effect of blockchain security on business performance of selected manufacturing firms in Delta State.
- iii. to investigate how blockchain-enhanced data integrity affects business performance of selected manufacturing firms in Delta State.

## Research Hypotheses

**H<sub>01</sub>:** Blockchain transparency has no significant effect on business performance of selected manufacturing firms in Delta State.

**H<sub>02</sub>:** Blockchain traceability does not significantly effect business performance of selected manufacturing firms in Delta State.

**H<sub>03</sub>:** Blockchain security has no significant influence on business performance of selected manufacturing firms in Delta State.

**H<sub>04</sub>:** Blockchain-enhanced data integrity does not significantly affect business performance of selected manufacturing firms in Delta State.

## Review of Related Literature

### Blockchain Technology

Blockchain technology is a decentralized and distributed ledger system that allows secure and transparent recording of transactions across multiple nodes in a network. Introduced in 2008 as the foundation of Bitcoin (Nakamoto, 2008), it has evolved to become a tool with transformative potential in various sectors, including finance, healthcare, logistics, and manufacturing. The primary characteristic of blockchain is its ability to ensure data immutability, which means once data is recorded, it cannot be altered without consensus from the network (Zohar et al., 2021). This feature is particularly advantageous in sectors where transparency and security are paramount. Recent studies have underscored blockchain's capacity

to streamline processes and reduce operational costs. For example, according to a report by Tapscott and Tapscott (2020), blockchain's decentralized nature enhances trust between parties, making it a powerful tool in industries that involve complex supply chains and numerous stakeholders. Additionally, blockchain's integration with technologies like the Internet of Things (IoT) and Artificial Intelligence (AI) has further amplified its potential in optimizing manufacturing and logistics operations (Garg & Yadav, 2021).

#### ***Blockchain Transparency (BTC)***

Blockchain transparency refers to the openness and accessibility of data stored within the blockchain system. It allows all authorized users to view and verify transaction records, promoting accountability and reducing opportunities for fraud. In the context of manufacturing, transparency is essential for enhancing operational visibility and fostering trust between business partners (Seitz et al., 2021). A study by Chen et al. (2021) demonstrated that blockchain transparency significantly reduced inefficiencies in the supply chain by enabling real-time monitoring of product movement and transaction status. Transparency through blockchain ensures that all parties involved in the manufacturing process—from suppliers to consumers—have access to the same verifiable data, minimizing the potential for conflicts or discrepancies. The application of blockchain transparency in manufacturing can lead to better decision-making, as stakeholders can make informed choices based on the immutable and transparent nature of the data.

#### ***Blockchain Traceability (BTB)***

Traceability refers to the ability to track the history and movement of a product throughout its entire lifecycle, from raw material sourcing to final consumption. In manufacturing, traceability is critical for maintaining quality control, preventing counterfeit goods, and ensuring compliance with regulatory standards (Li et al., 2021). Blockchain enhances traceability by creating a tamper-proof record of every transaction or change in the supply chain, ensuring that product origins and movements are well-documented. According to Wang et al. (2022), the traceability feature of blockchain technology provides manufacturers with a clear and auditable history of a product's journey, significantly reducing the occurrence of counterfeit goods and enhancing the credibility of products. This feature also allows for quick identification and resolution of quality issues, making it easier to recall defective products, if necessary. In Nigeria, where issues like counterfeit products in manufacturing are rampant, blockchain traceability presents an effective solution for ensuring product authenticity and safety (Adeyemo et al., 2021).

#### ***Blockchain Security (BS)***

Security is one of the fundamental attributes of blockchain technology. Blockchain uses advanced cryptographic techniques to ensure the integrity and confidentiality of data. Unlike traditional databases, where data can be altered or deleted by authorized parties, blockchain's immutability feature prevents unauthorized changes once data is recorded, making it highly secure (Crosby et al., 2020). In the manufacturing sector, security concerns related to data breaches, cyberattacks, and unauthorized access to sensitive information are prevalent (Shetty & Singh, 2021). Blockchain's security features are vital in mitigating these risks by ensuring that data is securely stored and accessible only by authorized users. This aspect of blockchain can also protect intellectual property, trade secrets, and sensitive customer information, which are valuable assets in manufacturing firms (Chang et al., 2021). A study by Alzahrani et al. (2020) revealed that the implementation of blockchain in supply chain management enhanced the security of transactions, particularly in industries dealing with sensitive or high-value products, such as pharmaceuticals and electronics. In Nigeria, where cybercrime poses a significant challenge to businesses, the adoption of blockchain security can bolster trust and protect critical business assets.

#### ***Blockchain Data Integrity (BDI)***

Data integrity is the assurance that data remains accurate, consistent, and trustworthy over its lifecycle. Blockchain ensures data integrity through its immutable ledger, where once data is recorded, it cannot be tampered with without altering every subsequent block, which would require the consensus of the network (Böhme et al., 2020). This capability is particularly valuable in manufacturing, where accurate data is essential for maintaining quality, ensuring compliance, and making informed decisions. Research by Park and Kim (2021) highlighted that blockchain enhances data integrity by eliminating errors associated with manual data entry and mitigating risks related to data manipulation. In manufacturing environments, where data is constantly generated across various stages of production, blockchain technology ensures that information related to inventory, production schedules, and supply chain status remains reliable. This also aids in maintaining compliance with industry regulations, such as product safety standards.

#### ***Business Performance (BP)***

Business performance in the manufacturing sector is a measure of a firm's operational efficiency, profitability, and ability to meet market demands. Blockchain technology can significantly impact business

performance by optimizing processes, enhancing transparency, and improving supply chain management. According to a study by Sharma et al. (2021), the adoption of blockchain led to reduced operational costs, improved product quality, and greater customer satisfaction. In the context of Nigeria's manufacturing sector, where inefficiencies and fraud often hinder business performance, blockchain presents a solution to optimize operations. Adeyemo et al. (2021) noted that blockchain integration improved decision-making by providing reliable and real-time data, which is crucial for manufacturing firms operating in dynamic and competitive markets. Furthermore, the increased transparency and traceability enabled by blockchain enhance relationships with suppliers and customers, improving trust and market competitiveness.

### ***Blockchain Technology on Business Performance in Manufacturing in Nigeria***

In Nigeria, the manufacturing industry faces numerous challenges; including supply chain inefficiencies, counterfeit goods, and security risks. The adoption of blockchain technology has the potential to address these issues and enhance business performance in the sector. A study by Okoli and Nwachukwu (2021) suggested that blockchain technology could enhance supply chain transparency, reduce operational costs, and improve product quality in Nigerian manufacturing firms. Blockchain's ability to provide real-time, verifiable data on product movements and transaction histories can foster trust among stakeholders and lead to more efficient operations (Afolabi & Nwachukwu, 2021). In addition, blockchain's ability to prevent fraud and ensure data integrity is particularly important in Nigeria, where counterfeiting and data breaches are major concerns (Alabi et al., 2021). As such, blockchain adoption can help Nigerian manufacturers improve operational efficiency, enhance product quality, and strengthen relationships with customers and suppliers, ultimately improving their business performance.

### ***Theoretical Review***

#### ***Distributed Ledger Theory (DLT)***

Distributed Ledger Theory (DLT) is a foundational concept that describes a decentralized database that is maintained and shared across multiple nodes within a network. The origin of DLT can be traced back to the early developments of cryptographic systems, particularly the introduction of blockchain in the context of Bitcoin by Satoshi Nakamoto in 2008. Nakamoto's work demonstrated that a decentralized ledger could be used to ensure secure transactions without the need for intermediaries like banks (Nakamoto, 2008). This theory has evolved from a pure cryptocurrency application into a broader technology

used in various industries to ensure data integrity, transparency, and security.

DLT supports blockchain transparency (BTC) by enabling an immutable record of transactions that are visible and accessible to all participants in the network. Through this feature, blockchain ensures that manufacturing firms' operations are more transparent, providing real-time information to all stakeholders. For instance, in Delta State, Nigeria, the use of blockchain-based DLT can ensure that every transaction, such as raw material procurement or product distribution, is recorded in an open ledger. This reduces the opportunity for fraudulent activities and enhances trust among manufacturers, suppliers, and customers (Seitz et al., 2021). Furthermore, DLT supports traceability (BTB) by providing an auditable trail of all product transactions, allowing firms to track the origin of raw materials, product movement, and quality at every stage. This visibility contributes to greater operational efficiency and better business performance (Wang et al., 2022). In relation to business performance (BP), DLT's ability to create a secure, transparent, and immutable ledger allows manufacturing firms in Delta State to improve operational processes, reduce supply chain inefficiencies, and increase stakeholder confidence. By enhancing transparency and traceability, DLT facilitates smoother transactions and decision-making, which ultimately drives better business outcomes.

#### ***Game Theory (Incentive Mechanisms)***

Game Theory, introduced by mathematician John von Neumann and economist Oskar Morgenstern in 1944, is a theoretical framework used to understand the strategic interactions between rational decision-makers. The application of Game Theory to blockchain technology is particularly relevant in the context of incentive mechanisms. These mechanisms ensure that participants in a blockchain network act in ways that maintain the integrity of the system. In blockchain, miners or validators are incentivized through mechanisms such as proof-of-work (PoW) or proof-of-stake (PoS) to validate and secure transactions, ensuring that the network remains decentralized and functional.

Incentive mechanisms play a critical role in Blockchain Security (BS). By applying Game Theory principles, blockchain systems incentivize honest behavior and disincentivize malicious activities such as fraud or double-spending. In manufacturing firms, this aspect of blockchain can help safeguard sensitive data and transactions, ensuring that security breaches are minimized and that the integrity of supply chain data is maintained (Alzahrani et al., 2020). Moreover, the incentive structure of blockchain encourages participants to follow the rules of the network, thus ensuring the security and privacy of sensitive business

data, which is critical for manufacturing firms dealing with proprietary information. Game Theory's influence extends to Blockchain Data Integrity (BDI), as the incentives embedded within blockchain protocols ensure that participants are motivated to maintain accurate and reliable data. When applied to the manufacturing sector in Delta State, Nigeria, this feature of blockchain allows for accurate record-keeping, ensuring that manufacturers make informed decisions based on trustworthy data. For instance, through the use of smart contracts, blockchain can automate various manufacturing processes, reducing human error and improving data integrity in the supply chain.

Thus, Game Theory and its incentive mechanisms help to improve business performance (BP) by reducing costs related to fraud, improving security, and ensuring that the data used for decision-making is accurate and reliable. By promoting secure and efficient systems for managing transactions and data, blockchain technology enhances the overall performance of manufacturing firms in Delta State, Nigeria.

### ***Cryptographic Theory***

Cryptographic Theory has been pivotal in the development of blockchain technology. Cryptography, as a field of study, deals with securing communication and information through the use of mathematical algorithms. The application of cryptographic techniques to blockchain technology ensures that data is encrypted and secured, preventing unauthorized access, tampering, or fraud. The concept of using cryptography to ensure the security and privacy of transactions was popularized by the introduction of Bitcoin (Nakamoto, 2008), which relied on cryptographic hash functions and public-private key pairs for secure transactions.

Cryptography underpins Blockchain Security (BS) by providing the foundation for secure transactions and safeguarding sensitive data in manufacturing operations. Through the use of hashing, digital signatures, and encryption, blockchain technology ensures that data cannot be altered or tampered with, thereby preserving the security and confidentiality of business operations. For example, in the context of manufacturing in Delta State, cryptographic techniques in blockchain can protect intellectual property, contracts, and sensitive operational data from unauthorized access or cyberattacks (Shetty & Singh, 2021).

Cryptographic theory also contributes to Blockchain Transparency (BTC) by ensuring that all transactions are verifiable and traceable. While the data is transparent to authorized users, cryptographic encryption ensures that the participants' identities and sensitive information remain protected. This balance

between transparency and privacy allows manufacturing firms to operate in an open yet secure environment, where stakeholders can access relevant data without compromising business confidentiality (Chang et al., 2021).

Furthermore, cryptographic techniques are critical to Blockchain Data Integrity (BDI), as they guarantee the authenticity and consistency of the data stored on the blockchain. Since each block is linked through cryptographic hashes, any alteration to the data would require the modification of all subsequent blocks, making tampering virtually impossible. For manufacturing firms in Delta State, Nigeria, this ensures that product quality and supply chain data remain accurate and reliable, which is essential for decision-making and regulatory compliance.

In relation to business performance (BP), the application of cryptography in blockchain technology enhances operational efficiency, reduces security risks, and fosters trust among stakeholders, all of which contribute to improved business outcomes. As manufacturing firms in Delta State face challenges such as data breaches and counterfeit products, cryptographic security offers a robust solution to mitigate these risks and improve overall performance.

### ***Empirical Review***

Wang, Zhao, and Jiang (2022) explored the potential of blockchain to improve transparency and traceability in supply chains, focusing on the manufacturing sector. The study employed a survey methodology, collecting data from 150 firms in China. The data were analyzed using structural equation modeling (SEM) to assess the effect of blockchain's transparency and traceability on supply chain performance. Findings revealed that blockchain's transparency significantly improved supply chain visibility, while traceability reduced the occurrence of counterfeit products. The study concluded that blockchain enhances business performance by increasing operational transparency and reducing risks associated with counterfeit goods. The authors recommended that firms integrate blockchain to optimize supply chain operations and improve performance.

Chang, Liu, and Yang (2021) examined the role of blockchain technology in enhancing operational performance, focusing on transparency, traceability, and data integrity in the manufacturing sector. The study adopted a mixed-methods approach, combining qualitative interviews with industry experts and quantitative surveys from 150 manufacturing firms in China. Data analysis was conducted using multiple regression to assess the relationship between blockchain technology and business performance. The results revealed that blockchain's security and data integrity features significantly improved manufacturing

performance by reducing fraud and ensuring accurate and reliable data. The study concluded that blockchain adoption can enhance the overall operational efficiency of firms, and recommended that manufacturers consider integrating blockchain into their business processes to improve security and traceability.

Li, Guo, and Liu (2021) focused on the impact of blockchain on supply chain efficiency and performance, specifically examining blockchain's transparency (BTC), traceability (BTB), and data integrity (BDI) in the automotive industry. The researchers used a quantitative survey methodology, collecting data from 120 firms in Europe. Structural equation modeling (SEM) was used to analyze the data. The study found that blockchain's transparency and traceability significantly enhanced supply chain performance by providing real-time access to product information and ensuring the authenticity of products. Data integrity also played a crucial role in improving operational efficiency and reducing costs. The authors concluded that blockchain is a powerful tool for improving business performance in the automotive sector and recommended its adoption across manufacturing supply chains.

Shetty and Singh (2021) examined the role of blockchain technology in enhancing the security and data integrity of manufacturing firms. The study employed a survey methodology, collecting data from 100 manufacturing firms in India. Regression analysis was used to analyze the relationship between blockchain features, such as security (BS) and data integrity (BDI), and business performance (BP). The results indicated that blockchain's security features significantly enhanced data protection, reducing the risks of data breaches and improving the trustworthiness of operations. The study concluded that blockchain technology improves business performance by strengthening data security and integrity. The authors recommended that manufacturing firms adopt blockchain to safeguard sensitive data and enhance operational efficiency.

### Literature Gaps

The growing application of blockchain technology in the manufacturing sector has garnered significant attention due to its potential to enhance transparency, traceability, security, and data integrity. Numerous studies have examined the role of blockchain in improving business performance, particularly in supply chain operations. While empirical studies provide insights into blockchain's impact on manufacturing efficiency, several gaps remain in the existing literature that warrant further investigation. These gaps are particularly evident in findings, variables, methodology, and geographical focus, especially in the context of Nigeria, where blockchain adoption is still at an early

stage. This research aims to address these gaps by focusing on the effect of blockchain technology, proxied by blockchain transparency (BTC), traceability (BTB), security (BS), and data integrity (BDI), on the business performance (BP) of selected manufacturing firms in Nigeria.

**Findings Gaps:** Although several studies highlight the positive influence of blockchain's transparency, traceability, and security on supply chain performance and business outcomes (e.g., Alzahrani et al., 2020; Chang et al., 2021; Jain et al., 2021), there remains a lack of consensus on the specific mechanisms through which these blockchain attributes influence business performance. For instance, while Alzahrani et al. (2020) found that transparency and traceability improve operational efficiency, the specific aspects of business performance—such as profitability, customer satisfaction, and market share—were not fully explored in the context of the Nigerian manufacturing sector. Additionally, the role of data integrity in strengthening decision-making and business operations, as discussed by Feng et al. (2021) and Jain et al. (2021), has not been systematically examined in the Nigerian manufacturing context. These gaps highlight the need for more targeted studies that examine the causal relationships between blockchain attributes and various dimensions of business performance.

**Variables Gaps:** While many studies have focused on key blockchain attributes like transparency, traceability, security, and data integrity (e.g., Li et al., 2021; Wang et al., 2022), few studies have analyzed how these variables interact with each other and influence different aspects of business performance. For example, Li et al. (2021) concentrated on traceability and transparency but did not fully integrate the interaction between security and data integrity in their model, which are crucial to understanding blockchain's full impact on business operations. Similarly, Alzahrani et al. (2020) highlighted the impact of transparency and traceability on supply chain efficiency, but they did not explore how these variables, in conjunction with security, influence organizational performance outcomes such as profitability, growth, or sustainability. The integration of these blockchain features into a comprehensive model remains a critical gap in the literature.

**Methodological Gaps:** The studies reviewed primarily employed quantitative methods, such as structural equation modeling (SEM) and regression analysis, to assess the impact of blockchain technology on business performance (e.g., Chang et al., 2021; Jain et al., 2021; Alzahrani et al., 2020). While these approaches provide valuable insights, they often lack a deeper qualitative

understanding of how blockchain is implemented and the challenges firms face in adopting this technology. For example, Shetty and Singh (2021) used regression analysis to demonstrate the impact of security and data integrity on performance, but did not explore the managerial, organizational, or technological challenges encountered by manufacturing firms. Furthermore, the studies generally lacked longitudinal data that could provide insights into the long-term effects of blockchain adoption on performance metrics. More mixed-methods or longitudinal research is needed to explore the implementation challenges, processes, and sustained benefits of blockchain technology in manufacturing firms.

**Geographical Gaps:** Although the studies reviewed provide insights from various global contexts, there is a notable geographical gap, particularly in the African region. Many of the empirical studies are based on data from countries like China, India, and Saudi Arabia (e.g., Chang et al., 2021; Li et al., 2021; Jain et al., 2021), with limited attention paid to sub-Saharan Africa, specifically Nigeria. While Akinyele et al. (2021) examined blockchain in the Nigerian manufacturing context, their study was limited in scope and did not fully explore the regional challenges, such as infrastructure limitations, regulatory frameworks, and market conditions that influence blockchain adoption. The majority of studies, including those from Pakistan and India (Khan et al., 2021; Sundararajan et al., 2021), focus on well-established or emerging markets where blockchain adoption is relatively advanced. The Nigerian manufacturing sector, however, faces unique challenges, such as infrastructural gaps, which may significantly influence the effectiveness of blockchain technology in improving business performance. Therefore, there is a need for more focused studies that investigate how blockchain can be successfully integrated into Nigerian manufacturing firms to improve their performance.

## Tools and Methods

### Research Design

This study adopted a descriptive survey research design. The population of this study consisted of employees from five selected manufacturing firms in Delta State, Nigeria, who were involved in operations that could be impacted by blockchain technology. These employees included supply chain managers, IT personnel, and senior executives within Nigerian Breweries Plc, West African Plastics Ltd, Delta Steel Company Ltd, Dufil Prima Foods Plc, and Excel Paints Manufacturing Ltd. These individuals were considered ideal as they were in positions to provide insights on how blockchain attributes such as transparency, traceability, security, and data integrity influenced business performance

within their respective firms. The total population was estimated to be approximately 150 employees across the five firms, based on internal records. This number was adopted because of the size as permissible in research when the sample is small (xxxx). This study employed a stratified random sampling technique. The stratification was based on job roles within the selected manufacturing firms, including supply chain managers, IT personnel, and senior executives. Primary data were collected using a structured questionnaire. The questionnaire was distributed to respondents in the selected manufacturing firms. It was designed with a Likert-scale format, with respondents asked to rate their agreement with statements related to blockchain transparency, traceability, security, data integrity, and business performance. The Likert scale ranged from "Strongly Disagree" (1) to "Strongly Agree" (5). This method enabled the systematic collection of data that was easy to analyze quantitatively. The research instrument for this study was a structured questionnaire, which was divided into sections. The first section collected demographic information about the respondents, such as their job role and years of experience. The second section focused on the independent variables (blockchain transparency, traceability, security, and data integrity), while the third section addressed business performance, the dependent variable. Each section contained questions designed to capture respondents' perceptions and experiences with blockchain technology in their respective firms. The reliability of the research instrument was tested using Cronbach's alpha coefficient. A pilot study was conducted with a small group of respondents from similar manufacturing firms not included in the main study. The Cronbach's alpha values for each of the variables were calculated as follows:

Blockchain Transparency (BTC):  $\alpha=0.82$

Blockchain Traceability (BTB):  $\alpha=0.79$

Blockchain Security (BS):  $\alpha=0.85$

Blockchain Data Integrity (BDI):  $\alpha=0.88$

Business Performance (BP):  $\alpha=0.81$

These values indicated that the instrument had acceptable internal consistency, with all variables having a Cronbach's alpha value of 0.7 or above. Based on the results of the pilot study, minor revisions were made to the instrument to further enhance its reliability. The data collected from the questionnaires were analyzed using quantitative techniques. Descriptive statistics, such as frequencies, means, and standard deviations, were used to summarize and describe the characteristics of the data. Multiple regression analysis was employed to examine the relationships between the independent variables (blockchain transparency, traceability, security, and data integrity) and the dependent variable (business performance). This statistical technique was appropriate because it allowed

for the assessment of the simultaneous effects of multiple independent variables on a single dependent variable. The regression analysis helped determine the extent to which each of the blockchain attributes affected business performance and identified which variable had the most significant impact. The study was guided by a model( $BP = \beta_0 + \beta_1 BTC + \beta_2 BTB + \beta_3 BS + \beta_4 BDI + \epsilon$ ) reflecting BP = Business Performance (dependent variable), BTC = Blockchain Transparency (Independent variable), BTB = Blockchain Traceability (Independent variable), BS = Blockchain Security (Independent variable), BDI = Blockchain Data Integrity (Independent variable),  $\beta_0$  = Intercept,  $\beta_1$ -

#### Descriptive Statistics

Descriptive analysis using SPSS showed that most firms had integrated blockchain applications mainly in

| Variable                | N   | Mean | Std. Deviation | Interpretation |
|-------------------------|-----|------|----------------|----------------|
| Blockchain Transparency | 140 | 4.21 | 0.63           | High           |
| Blockchain Traceability | 140 | 4.08 | 0.71           | High           |
| Blockchain Security     | 140 | 4.35 | 0.58           | Very High      |
| Data Integrity          | 140 | 4.27 | 0.65           | High           |
| Business Performance    | 140 | 4.18 | 0.69           | High           |

The descriptive results suggest that respondents strongly agreed that blockchain technology enhances transparency, traceability, data integrity, and overall operational security, which in turn improves performance indicators such as productivity, quality control, and customer trust.

#### Regression Analysis

A multiple regression analysis was conducted to examine the effect of the four blockchain constructs (transparency, traceability, security, and data integrity) on business performance.

$\beta_4$  = Coefficients for each independent variables and  $\epsilon$  = Error term

#### Analysis, Results and Discussion

##### Data Presentation and Response Rate

Out of the 150 questionnaires administered to selected manufacturing firms in Delta State, 140 were properly completed and returned, representing a 93.3% response rate. This high response rate was considered adequate for robust statistical analysis. The respondents comprised top and middle management staff from production, finance, ICT, and operations departments, ensuring diverse insights on blockchain adoption and business performance.

supply chain management, quality assurance, and data recording.

##### Model Summary:

$R = 0.872$

$R^2 = 0.761$

Adjusted  $R^2 = 0.749$

$F(4,135) = 107.23, p < 0.001$

This indicates that 76.1% of the variation in business performance is explained by the combined influence of blockchain transparency, traceability, security, and data integrity.

##### Coefficients Table:

| Predictor Variable      | Beta ( $\beta$ ) | t-value | Sig. (p) | Interpretation |
|-------------------------|------------------|---------|----------|----------------|
| Blockchain Transparency | 0.254            | 4.672   | 0.000    | Significant    |
| Blockchain Traceability | 0.198            | 3.861   | 0.001    | Significant    |
| Blockchain Security     | 0.301            | 5.497   | 0.000    | Significant    |
| Data Integrity          | 0.276            | 4.208   | 0.000    | Significant    |

##### Interpretation of Findings

The regression results reveal that blockchain security ( $\beta = 0.301$ ) exerts the strongest positive effect on business performance, followed by data integrity ( $\beta = 0.276$ ) and transparency ( $\beta = 0.254$ ). Traceability also contributes significantly ( $\beta = 0.198$ ), though slightly lower than the others. This implies that blockchain adoption enhances secure transactions, reduces data

tampering, improves traceability, and promotes trust-based performance in manufacturing operations.

##### Qualitative Insights

Interviews with 10 managers revealed that blockchain technology has improved accountability, streamlined record-keeping, and reduced losses from counterfeit products. One production manager noted that *“blockchain-based traceability has significantly*

*improved customer confidence and reduced product recalls.” Another ICT officer emphasized that “enhanced data integrity has minimized audit discrepancies and increased operational transparency across departments.”*

The qualitative data corroborate the quantitative findings by highlighting that blockchain systems foster reliability, transparency, and inter-departmental efficiency, thereby reinforcing competitive advantage and business sustainability.

### Discussion of Findings

The findings align with earlier empirical studies (e.g., Kamble et al., 2021; Saberi et al., 2019) which established that blockchain transparency and traceability enhance supply chain visibility and operational efficiency. Similarly, the strong positive impact of blockchain security on business performance supports Tijan et al. (2020), who emphasized that blockchain’s immutable nature reduces fraud and ensures data protection.

In the Delta State context, these results suggest that manufacturing firms leveraging blockchain experience improved performance outcomes—particularly in customer trust, process efficiency, and compliance management. However, challenges such as limited technical expertise, infrastructural constraints, and regulatory ambiguity still pose barriers to widespread blockchain adoption.

### Summary

The study revealed that blockchain transparency plays a vital role in improving trust and accountability, which in turn enhances the overall business performance of manufacturing firms. Blockchain traceability was found to strengthen supply chain visibility, thereby reducing operational inefficiencies and improving productivity. Among the blockchain dimensions examined, security had the most significant impact, as it safeguards critical business data and ensures operational reliability. Additionally, data integrity was shown to enhance decision-making accuracy and promote organizational efficiency. Overall, both the quantitative and qualitative analyses confirmed that blockchain adoption exerts a positive and significant effect on the business performance of manufacturing firms in Delta State, highlighting its strategic importance for competitiveness and sustainability.

### 5. Conclusion

This study examined the effect of blockchain technology on the business performance of selected manufacturing firms in Delta State, Nigeria, using both

quantitative and qualitative approaches. The analysis of 140 valid responses revealed that blockchain transparency, traceability, security, and data integrity each exert significant positive influences on business performance.

Specifically, blockchain security emerged as the most influential factor, underscoring the technology’s role in protecting business data, ensuring safe transactions, and fostering trust among partners and customers. Data integrity and transparency were also found to be strong drivers of performance, enabling accurate decision-making and enhancing accountability. Similarly, traceability improved supply chain monitoring, quality control, and customer satisfaction.

The findings affirm that blockchain adoption contributes meaningfully to operational efficiency, product authenticity, and corporate credibility in Nigeria’s manufacturing sector. However, the study also highlights persistent challenges such as limited technical expertise, infrastructural constraints, and regulatory uncertainty, which may hinder full-scale blockchain implementation.

In conclusion, blockchain technology stands as a strategic digital innovation capable of transforming the operational landscape of manufacturing firms in Delta State. When effectively integrated, it enhances performance, competitiveness, and long-term sustainability.

### Recommendations

Based on the findings, the following recommendations are proposed:

The study recommends that manufacturing firms in Delta State should first invest in robust blockchain infrastructure by adopting digital platforms and tools that enhance data management, traceability, and security across operations.

- i. There is a need for capacity building and continuous training to equip employees with the technical knowledge and skills required for effective blockchain implementation and cybersecurity management.
- ii. That regulatory support and institutional collaboration should be strengthened through clear government policies, industry standards, and partnerships between public and private sectors to promote innovation and ensure compliance with data protection laws.
- iii. Lastly, firms should integrate blockchain into supply chain and operational systems while continuously evaluating its performance impact, promoting data integrity, and leveraging complementary technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT) to drive sustained business growth and competitiveness.



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## The Relationship Between Job Social Characteristics and Employee Commitment in Firms in Edo State.

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### Abstract

*Employee commitment has become a crucial factor in organization success and sustainability. This study explored the relationship between job social characteristics and employee commitment within selected firms in the alcoholic beverage sector in Edo State. This study adopted the descriptive cross-sectional design with the approach of a survey. 289 employees sampled using Taro Yamane's formula was used for this study. The research instrument was a questionnaire with close ended questions, which was subjected to face and content validation, and then Cronbach Alpha reliability Descriptive statistics was used to analyze data, and Pearson Correlation analysis was used to test the hypothesis for the study. Findings showed that there was significant and positive influence between social support, initiated interdependence, interaction outside the organization, feedback from others and employee commitment. The study concluded that cultivating a socially supportive work atmosphere is necessary in order to enhance commitment, reduce turnover, and improve overall organizational performance. It was recommended that these firms create a collaborative and supportive work environment, design work processes that enhance the interdependence of tasks, encourage and facilitate employees' engagement with external stakeholders and implement regular and structured feedback mechanisms.*

**Keywords:** Job social characteristics, employee commitment, social supported, initiated interdependence, interaction and feedback

### Introduction

Employee commitment is widely recognized as a critical factor for organizational success and long-term performance (Alniacik et al., 2020; Elnaga & Imran, 2021). It reflects an individual's psychological attachment to the organization, encompassing feelings of belonging, alignment with business goals, and readiness to overcome challenges (Bedarkan & Pandita, 2021). Commitment manifests in employees' passion, engagement, and deliberate effort in performing their work (Schelling, 2021; Sigler & Pearson, 2020). Job social characteristics—such as skill variety, task identity, task significance, autonomy, and feedback—play a crucial role in fostering commitment (Ling et al., 2021). When employees perceive their jobs as meaningful and believe the organization values their well-being, they are more motivated, show higher self-esteem, critical thinking, and job satisfaction, and engage more fully in their tasks (Raut et al., 2021; Hohd et al., 2020). Positive job characteristics also enhance employee behavior, motivation, and interactions within the work environment. Employees satisfied with these characteristics are more likely to demonstrate cooperation, teamwork, punctuality, and

productivity, contributing to a supportive and motivating work environment. Overall, employee commitment, strengthened by meaningful work and supportive job characteristics, is essential for achieving high performance, organizational effectiveness, and sustained competitive advantage.

### Problem Statement

Employee commitment has become a crucial factor in organization success and sustainability. Employee commitment is the psychological attachment and loyalty an employee feels towards their organization. Despite its importance, organization frequently struggle to understand and manage the underlying factor that influence this commitment. Some problems are: The lack of comprehensive insight into this relationship poses several challenges for organizations without a clear understanding of which social characteristics are most influential; organizations may implement generic or misaligned initiatives that fails to address the specific needs and concern of their employee. This can result in sub optimal level of commitment, leading to increased turnover rates, decreased job satisfaction and diminished organizational performance. Lack of

employee commitment in many organizations result in poor performance, low morale, inefficiency and dissatisfaction, but it can be addressed by identifying and implementing strategies to improve employee's engagement and commitment.

### **Objective of the study**

The primary objective of this research is to explore the relationship between job social characteristics and employee commitment in firms in Edo State. The specific objectives include:

- i. to examine the influence of social support on employee commitment in firms
- ii. to determine the effect of initiated interdependence on employee commitment in firms
- iii. to access the extent of interaction outside the organization on employee commitment in firms d.
- iv. to determine the impact of feedback from others on employee commitment in firms

### **Research Questions**

- i. What is the influence of social support on employee commitment in firms?
- ii. What is the effect of initiated interdependence on employee commitment in firms?
- iii. To what extent does interaction from outside the organization impact employee commitment in firms?
- iv. What is the impact of feedback from others on employee commitment in firms?

### **Statement of Hypotheses**

**H<sub>01</sub>:** There is no significant influence of social support on employee commitment in firms.

**H<sub>02</sub>:** There is no significance effect of initiated interdependence on employee in firms.

**H<sub>03</sub>:** There is no significance extent of interaction outside the organization on employee commitment in firm.

**H<sub>04</sub>:** There is no significance impact of feedback from others on employee commitment in firms.

### **Literature Underpinnings**

#### **The Concept of Social Support in the Workplace**

Social support in the workplace refers to the psychological and material assistance employees receive from colleagues, supervisors, or others within the organization. It plays a crucial role in enhancing job satisfaction, reducing stress, and strengthening employee commitment (Pressman et al., 2020). This support can take various forms—emotional (empathy and understanding), instrumental (practical help), informational (guidance and advice), and **appraisal** (constructive feedback) (Jolly et al., 2021). Social support is typically classified by its source: supervisor support, which promotes organizational commitment,

and coworker support, which fosters positive interpersonal relationships and job satisfaction. Together, these support systems create a network that helps employees cope with work stress and improve performance, making social support a vital aspect of organizational behavior and employee well-being.

#### **The Role of Social Support in Employee Well-being and Commitment**

Social support significantly enhances employee well-being and strengthens organizational commitment. Employees who perceive strong social support experience less stress and burnout, as such support provides resources to cope with workplace challenges like workload, conflict, and role ambiguity (Foy et al., 2019). It acts as a buffer against negative job stressors, reducing dissatisfaction and improving mental health. Through the lens of social exchange theory, supportive interactions between employees, supervisors, and coworkers build trust, respect, and loyalty (Kim & Qu, 2020). When employees feel valued and appreciated, they develop stronger emotional attachment, motivation, and dedication to the organization (Chernyak-Hai & Rabenu, 2017). Thus, social support not only promotes well-being but also deepens employees' commitment and sense of belonging.

#### **Social Support as a Buffer for Workplace Stress**

Social support acts as a protective buffer against workplace stress by helping employees manage pressure and cope with challenges (Cohen & McKay, 2020). According to the buffering hypothesis, employees who perceive strong support from colleagues or supervisors experience less stress because they can access emotional reassurance, advice, or practical assistance. This support reduces feelings of isolation and helps employees remain resilient and focused under pressure (Schilbach et al., 2023). Empirical studies show that social support is positively linked to job satisfaction, commitment, and engagement (Fisenberger et al., 2020). Supported employees report greater fulfillment, stronger identification with organizational goals, and improved psychological well-being. Additionally, social support enhances job performance, creativity, and productivity (Ahmed et al., 2019) by reducing stress and fostering collaboration, trust, and innovation. Hence, organizations that promote supportive relationships create healthier, more motivated, and higher-performing workforces.

#### **The Concept of Initiated Interdependence in the Workplace**

Initiated interdependence refers to employees' proactive efforts to build and maintain collaborative relationships that support task completion and

organizational goals. Unlike structural or task-based interdependence—which is dictated by job design—initiated interdependence involves deliberate actions by employees to seek cooperation, share knowledge, and foster teamwork (Wu et al., 2018). In modern, complex workplaces that demand communication and collaboration, initiated interdependence enables employees to navigate challenges by forming networks of mutual support and problem-solving. It reflects a shift from passive reliance on others to active engagement, where employees voluntarily collaborate, exchange feedback, and contribute to team cohesion. This proactive behavior strengthens teamwork, creativity, and overall organizational performance by emphasizing shared responsibility and collective success.

### Forms and Dimensions of Initiated Interdependence

Initiated interdependence manifests in several forms—information sharing, resource sharing, and joint decision-making—each reflecting proactive collaboration among employees. **Information sharing** involves voluntarily exchanging knowledge and expertise to enhance task performance, especially in knowledge-driven settings. Resource sharing refers to the active pooling of tangible or intangible resources, such as time, tools, or skills, to improve efficiency and collective outcomes (Dyer, 1997). Joint decision-making occurs when employees engage others in collaborative discussions to reach well-informed, innovative solutions. The dimensions of initiated interdependence vary by the intensity of collaboration, ranging from occasional exchanges to continuous cooperation and reliance on others. Higher levels of interdependence typically emerge in complex or uncertain work environments that demand frequent interaction and teamwork (Raveendran et al., 2020).

### The Role of Initiated Interdependence in Employee Commitment

Initiated interdependence fosters employee commitment by strengthening social and task-based connections within the workplace. Employees who actively engage in collaborative behaviors build stronger relationships and experience greater emotional attachment to their organization, viewing their work as meaningful and team-oriented (Haque et al., 2019). By participating in decision-making and shared responsibilities, employees develop a heightened sense of **psychological ownership** and accountability, which increases motivation and dedication to organizational goals. Moreover, initiated interdependence promotes a **reciprocal exchange** of support and resources, reinforcing trust, cooperation, and mutual respect. This cycle of collaboration and shared success cultivates a

positive organizational culture that enhances employee engagement, loyalty, and long-term commitment.

### Challenges and Barriers to Initiated Interdependence

Although initiated interdependence offers many benefits, its development is often hindered by organizational and social barriers. **Organizational silos** are a major obstacle, as isolated departments discourage collaboration and limit communication, leading to inefficiencies and lost innovation opportunities (Rope, 2021). Additionally, **power dynamics** within organizations can deter employees from initiating interdependent behaviors, especially when collaboration is perceived as a threat to authority or control. To address these barriers, organizations must **foster a culture that values collaboration**, promotes open communication, and ensures psychological safety—allowing employees to engage in interdependent relationships without fear of negative consequences (Roper, 2021).

### The Concept of Interacting Outside the Organization

Interacting outside the organization refers to employees' deliberate engagement with external individuals, groups, or institutions—such as clients, suppliers, industry peers, or regulators—to exchange knowledge, build relationships, and promote innovation (Yu et al., 2019). In today's globalized and interconnected environment, this external engagement enhances adaptability, competitiveness, and organizational growth. Such interactions may occur **through** networking events, cross-company collaborations, industry forums, or community initiatives, allowing employees to gain new skills, perspectives, and resources. These activities not only foster personal and professional **development** but also strengthen the organization's **strategic capacity** by bringing in fresh ideas, insights into market trends, and exposure to industry best practices (Hassani & Mosconi, 2022). Overall, engaging beyond organizational boundaries enriches both individual performance and organizational innovation.

### Forms of External Interactions

External interactions take three main forms—professional networking, industry collaboration, and community engagement—each contributing uniquely to employee and organizational development. Professional networking involves employees participating in conferences, workshops, and professional associations to exchange ideas, gain knowledge, and build relationships that enhance career growth and organizational competitiveness, especially in knowledge-driven industries (Ritzhaupt et al., 2020).

**Industry collaboration** entails formal partnerships with external stakeholders such as suppliers, customers, regulators, or competitors. These collaborations foster innovation, research, and value co-creation while exposing employees to new technologies and business models that expand their skills and problem-solving capacity (Herczeg et al., 2018). **Community engagement** includes employee involvement in outreach or social responsibility initiatives, strengthening the organization's CSR image and social reputation. It also gives employees a sense of purpose, personal fulfillment, and greater loyalty to the organization (Culum, 2018).

### Challenges and Barriers to External Interactions

While interacting outside the organization offers numerous benefits, it also presents certain challenges and barriers. Employees and organizations must navigate these challenges to maximize the value of external interactions. One of the most common challenges is the management of external relationships. Employees may find it difficult to balance their internal responsibilities with the time and effort required to maintain external relationships. Moreover, organizations may be concerned about the potential risks of sharing proprietary information with external parties or losing control over collaborative projects. To address these challenges, organizations must establish clear guidelines for external interactions and ensure that employees are trained to manage these relationships effectively (Heath, 2020). Another barrier is the fear of external influence. Some organizations may resist external interactions due to concerns that external stakeholders could influence the organization's internal processes or culture in undesirable ways. This is especially true in highly regulated industries or organizations with rigid hierarchical structures. However, organizations that are overly insular may miss out on valuable opportunities for learning and innovation. To mitigate this risk, organizations can adopt a more open mindset and create a culture that values external input while maintaining control over core operations (Shaikh and Ranehawa, 2022).

### The Concept of Feedback from Others

Feedback from others is an essential mechanism for personal and professional development, serving as a valuable tool in improving performance, behavior, and decision-making processes. In both organizational and individual contexts, feedback provides critical insights into areas of strength and weakness, allowing individuals to make informed adjustments to their actions and strategies. It encompasses the process of receiving information from colleagues, managers, peers, or external parties about one's performance or actions,

typically with the intent of fostering growth and improvement. The ability to give and receive feedback effectively is a vital competency in modern workplaces, where continuous learning and adaptation are key to success. In organizations, feedback loops help drive innovation, improve team dynamics, and enhance overall productivity: For individuals, feedback serves as a mirror, reflecting their achievements and areas for development. The concept of feedback from others extends beyond formal performance reviews or evaluations; it includes informal feedback, peer observations, and customer reviews, among other forms of external input. As a result, effective feedback contributes to both personal and organizational excellence.

### Challenges and Barriers to Effective Feedback

Despite the numerous benefits of feedback from others, there are several challenges and barriers that can impede its effectiveness. These challenges can arise from both the giver and the receiver of feedback, and they often stem from issues related to communication, perception, and emotional responses.

**Fear of Negative Feedback:** One of the most common barriers to effective feedback is the fear of negative feedback. Both managers and peers may be hesitant to provide critical feedback out of concern that it will damage relationships or cause emotional distress. Similarly, individuals receiving feedback may react defensively or dismissively to negative feedback, especially if it is perceived as unfair or overly harsh (Cionea et al., 2023). This fear of negative feedback can prevent open communication and limit opportunities for growth. To overcome this barrier, organizations must foster a culture where feedback is viewed as a constructive and essential part of development, rather than a punitive measure.

**Poor Communication Skills:** Effective feedback requires strong communication skills, both from the giver and the receiver. Feedback that is vague, ambiguous, or overly critical can be misinterpreted or lead to misunderstandings. For feedback to be effective, it must be specific, focused on behavior rather than personality, and delivered in a manner that encourages dialogue and reflection (Jug et al., 2019). Additionally, individuals receiving feedback must have the emotional intelligence and active listening skills to process the information without becoming defensive or disengaged.

**Cultural Differences:** In global or diverse organizations, cultural differences can pose a challenge to effective feedback. Different cultures have varying norms and expectations when it comes to giving and receiving feedback. For example, in some cultures, direct and candid feedback is valued, while in others, indirect or face-saving approaches are preferred. Misunderstandings or discomfort may arise when

individuals from different cultural backgrounds interact in feedback situations (Aririguzoh, 2022). Organizations must be mindful of these cultural differences and provide training to ensure that feedback is delivered in a culturally sensitive manner.

- iv. **Feedback Fatigue:** Another challenge is feedback fatigue, which occurs when individuals feel overwhelmed by the amount of feedback they receive, particularly in organizations that emphasize continuous feedback. When employees are inundated with feedback, it can become difficult to prioritize which areas to focus on, leading to disengagement or burnout. To prevent feedback fatigue, organizations should ensure that feedback is purposeful, meaningful, and spaced out appropriately (Gordon, 2020).

### The Concept of Employee Commitment

Employee commitment is a crucial factor in the success and sustainability of any organization. It reflects the level of engagement, loyalty, and attachment that employees feel towards their employer, the organization's goals, and their work environment. The concept is multidimensional and goes beyond the simple act of showing up to work or fulfilling job requirements. It encompasses an emotional, cognitive, and behavioral alignment between the employee and the organization. Employee commitment is essential for organizational growth and development, as committed employees are more likely to stay with the company, perform their duties diligently, and contribute to a positive work culture (Jehanzeb and Mohanty, 2018).

### Dimensions of Employee Commitment

The concept of employee commitment can be broken down into several dimensions, most notably affective commitment, continuance commitment, and normative commitment. Each of these dimensions captures a unique aspect of the relationship between employees and their organization.

- i. **Affective Commitment:** This dimension refers to the emotional attachment that an employee feels towards their organization. Employees with high affective commitment identify with the organization's values, goals, and culture, and they genuinely enjoy being a part of the company. Their commitment stems from positive feelings and experiences within the organization, making them more likely to put in discretionary effort and stay with the company long-term. Affective commitment is typically seen as the most desirable form of commitment because it is voluntary and leads to high levels of engagement.
- ii. **Continuance Commitment:** This type of commitment is based on the perceived costs of leaving the organization. Employees who exhibit continuance commitment stay with the company because they

believe that leaving would result in financial loss, loss of job security, or difficulty finding similar employment elsewhere. In this case, the employee's commitment is driven by necessity rather than a strong emotional connection. While continuance commitment may result in long-term tenure, it does not necessarily indicate high engagement or job satisfaction.

- i. **Normative Commitment:** Normative commitment refers to the sense of obligation an employee feels to remain with the organization. Employees with strong normative commitment believe they ought to stay with the company due to moral or ethical reasons, such as loyalty to the organization, feelings of indebtedness, or societal norms. This type of commitment can be fostered by factors such as a supportive company culture or mentorship programs that create a sense of belonging. However, similar to continuance commitment, normative commitment may not always translate into high performance or enthusiasm for the job.

### Theoretical Literature Review for Hypotheses

Social support in the workplace refers to the emotional, informational, and instrumental assistance that employees receive from their peers, supervisors, and the organization as a whole. The concept of social support is grounded in the idea that humans are social beings, and their well-being, both mental and emotional, is strongly influenced by the quality of interpersonal relationships. In organizational contexts, social support can take various forms, including coworker collaboration, managerial guidance, and organizational initiatives designed to promote employee welfare. Social support theory posits that employees who perceive higher levels of support from their work environment are likely to demonstrate stronger commitment to their employer, as it enhances their sense of belonging, reduces stress, and boosts morale (Kurtessis *et al* 2017).

Studies have found that social support positively correlates with various employee outcomes, including job satisfaction, productivity, and reduced turnover intentions (Le *et al*, 2023). A supportive work environment fosters a sense of loyalty and engagement, which are key components of employee commitment. Moreover, social support mitigates workplace stressors by providing employees with the resources they need to cope with job demands, thereby preventing burnout and disengagement (Gabriel and Aguinis, 2022). Conversely, the absence of social support can lead to feelings of isolation and dissatisfaction, which are detrimental to organizational commitment.

Despite the established link between social support and employee commitment, the possibility exists that there is no significant influence of social support on employee commitment in firms. This viewpoint could

stem from the argument that external factors such as compensation, career development opportunities, and personal motivations play a more significant role in determining employee commitment than social interactions alone. Proponents of this perspective argue that while social support may contribute to a positive work environment, its influence on employee commitment is not substantial enough to warrant strong conclusions (Jolly *et al* 2021).

### **Hypothesis 1: There is No Significant Influence of Social Support on Employee Commitment in Firms**

Initiated interdependence refers to the extent to which employees rely on each other to complete tasks and achieve organizational goals. In work environments characterized by high interdependence, employees' tasks and responsibilities are closely linked, and success is contingent on collaboration and teamwork. This concept is rooted in theories of organizational behavior that emphasize the importance of coordination and collective effort in achieving optimal performance. Interdependence creates a shared sense of purpose and accountability, which can foster greater employee commitment to the organization.

Research in this area suggests that interdependence positively affects employee commitment by promoting a sense of shared responsibility and enhancing the social bonds between coworkers (Chatzopoulou *et al*, 2022). When employees are highly interdependent, they are more likely to value their role within the organization, as their contributions directly impact their colleagues and the firm's overall success. This interconnectedness creates a sense of belonging and strengthens employee's identification with the organization, both of which are critical components of commitment.

It may be argued that individualistic work environments, where employees have more autonomy and less reliance on others, can still foster high levels of commitment. This perspective highlights the possibility that other factors, such as personal work ethic, job satisfaction, and career aspirations, may overshadow the impact of interdependence on commitment (Krajcsák, 2020). Nevertheless, empirical studies generally support the view that interdependence enhances employee commitment, particularly in organizations that emphasize teamwork and collaborative efforts (Zhang *et al*, 2022). More research is needed to determine whether this effect varies across different industries and job types.

### **Hypothesis 2: There is No Significant Effect of Initiated Interdependence on Employee Commitment in Firms**

Interactions outside the organization refer to the relationships and networks that employees establish

beyond the boundaries of their workplace. These interactions may include professional networking, involvement in industry associations, and informal relationships with individuals in other organizations. External interactions can provide employees with new perspectives, knowledge, and opportunities for growth, which may, in turn, influence their commitment to their current employer. Social exchange theory suggests that when employees engage in beneficial external interactions, they may feel more valued and connected, leading to greater organizational commitment (Nazis *et al*, 2018).

External networking can also enhance employees' sense of professional identity and competence. By participating in industry events or engaging with peers from other firms, employees may gain insights that improve their performance, contributing to job satisfaction and, ultimately, commitment to their employer. However, external interactions can also expose employees to new job opportunities, which might increase their turnover intentions if they perceive their current organization as less fulfilling or rewarding than potential alternatives (Aliyu and Nyadzayo, 2018). It can be argued that external interactions are often detached from the internal workings of the organization and therefore have a limited effect on an employee's commitment (Chatzopoulou *et al*, 2022). It can be inferred that internal factors, such as work relationships, compensation, and organizational culture, are more influential in shaping commitment. However, evidence from studies on social capital and networking suggests that employees who engage in external interactions can develop stronger professional identities, which can enhance their commitment to their current organization if they perceive it as a valuable platform for career development (Caza *et al*, 2018).

### **Hypothesis 3: There is No Significant Influence of the Extent of Interaction Outside the Organization on Employee Commitment in Firms**

Feedback is a critical component of performance management and employee development. It refers to the information employees receive from their supervisors, peers, or customers about their performance, behaviors, and contributions within the organization. Feedback plays an essential role in helping employees understand how well they are meeting expectations and where improvements can be made. It is widely recognized that constructive feedback can enhance employee motivation, job satisfaction, and commitment by providing clear guidance and fostering a sense of personal growth (Dalkrani and Dimitriadis, 2018).

The relationship between feedback and employee commitment is supported by theories of motivation and organizational behavior. According to goal-setting



theory, specific and timely feedback helps employees set realistic goals and enhances their commitment to achieving those goals (Gogoi and Baruah, 2021). Furthermore, feedback can strengthen employees' emotional attachment to the organization by demonstrating that their efforts are recognized and valued. When employees receive positive feedback, they are more likely to feel satisfied with their work and committed to their employer. Conversely, the absence of feedback or the provision of negative feedback without constructive elements can lead to disengagement and reduced commitment (Rastogi *et al.*, 2018).

It can be argued that feedback is merely a tool for improving performance and does not necessarily influence an employee's long-term attachment to the organization (Burnett and Lisk, 2021). According to this perspective, other factors, such as job satisfaction, career opportunities, and compensation, are more critical determinants of employee commitment. However, research consistently shows that feedback plays a vital role in shaping employee engagement and commitment, particularly when it is delivered in a constructive and supportive manner (Panda *et al.*, 2022). Therefore, while feedback alone may not guarantee commitment, it is an essential component of a broader strategy for enhancing employee loyalty and retention.

Hypothesis 4: There is No Significant Impact of Feedback from Others on Employee Commitment in Firms

### Theoretical Framework

The theoretical framework for this study integrates two primary theories that help explain the relationship between social support, initiated interdependence, interaction outside the organization, feedback from others, and employee commitment. These theories are Social Exchange Theory (SET) and Organizational Support Theory (OST). These frameworks provide insight into how interpersonal relationships, workplace dynamics, and feedback mechanisms influence employee behavior, commitment, and retention in organizations.

#### Social Exchange Theory (SET)

**Social Exchange Theory (SET)**, proposed by Blau (1964), explains workplace relationships as a series of reciprocal exchanges where individuals evaluate the costs and benefits of their interactions. In organizations, SET suggests that employees show **greater commitment** when they perceive valuable returns—such as **support, recognition, and career growth**—for their contributions (Cropanzano & Mitchell, 2015). The theory emphasizes **reciprocity**, meaning

employees who receive **emotional, informational, or instrumental support** from their organization feel an obligation to reciprocate through loyalty and commitment (Colquitt *et al.*, 2014). This aligns with the first hypothesis on **social support**, where perceived fairness and balance in exchanges foster stronger commitment. Regarding **initiated interdependence**, SET explains that when employees depend on one another for achieving goals, a mutual sense of **responsibility and accountability** develops. This interdependence strengthens social bonds and encourages commitment to both team and organization (Zhang *et al.*, 2022). In relation to **feedback**, SET views constructive feedback as a valuable resource within the exchange process. When employees receive meaningful recognition and guidance, they perceive it as a **reward**, reinforcing their sense of belonging and organizational commitment. In contrast, inadequate or negative feedback can disrupt this exchange balance, leading to disengagement (Afrahi *et al.*, 2022). Overall, SET provides a comprehensive framework showing that **employee commitment grows when organizations maintain fair, reciprocal exchanges**—offering support, collaboration, and recognition in return for employees' contributions.

#### Organizational Support Theory (OST)

**Organizational Support Theory (OST)**, introduced by Eisenberger *et al.* (1986), explains how employees' perceptions of being valued and cared for by their organization—known as **Perceived Organizational Support (POS)**—influence their attitudes and behaviors at work. High POS leads to stronger **job satisfaction, performance, and commitment**, as employees feel emotionally attached to and appreciated by their organization (Albalawi *et al.*, 2019). OST provides a strong foundation for understanding the **influence of social support on employee commitment**. Employees who perceive genuine concern and assistance from their organization and colleagues develop **affective commitment**, remaining loyal out of emotional attachment rather than obligation (Nazir *et al.*, 2018). The theory also extends to **external interactions**. When organizations support employees' participation in professional networks, conferences, or industry collaborations, employees interpret this as investment in their long-term growth—thus enhancing their perception of organizational support and, consequently, their commitment (Nazir *et al.*, 2018). Similarly, **initiated interdependence**—where employees rely on each other to achieve goals—strengthens POS when organizations encourage teamwork and provide resources for collaboration. This shared environment fosters a sense of belonging and collective success, reinforcing commitment. Finally, **feedback from others** serves as a direct expression of

organizational support. Positive or constructive feedback communicates recognition and care, signaling that the organization values employee contributions and development. Such feedback enhances POS and, by extension, organizational commitment (Naz et al., 2020). In essence, OST underscores that when employees **feel supported—socially, professionally, and developmentally—they reciprocate with higher loyalty, engagement, and commitment** to the organization.

#### Empirical Review

#### Social Support and Employee Commitment

Research across different contexts consistently shows that **social support**—especially from supervisors and colleagues—plays a meaningful role in shaping **employee commitment**, though its impact varies depending on organizational and cultural factors. **Tuna and Aslan (2018)**, studying teachers in Turkey, found a **significant but low positive correlation** between perceived social support and organizational commitment, with social support explaining only 3% of the variance. Teachers received the most support from spouses and the least from students, and their strongest commitment was to internalizing organizational values. This suggests that while social support enhances commitment, its effect may be limited when other factors such as personal motivation and job satisfaction dominate. In Nigeria, **Olatunji et al. (2017)** examined library staff in private universities and discovered a **positive and significant relationship** between social support and work commitment ( $r = .111, p < 0.05$ ). Employees who felt supported by peers and supervisors were more committed to their jobs. However, barriers such as poor welfare, inadequate funding, and lack of modern equipment weakened overall commitment—implying that social support must be complemented by organizational improvements to sustain loyalty. **Jean and Mathurin (2021)**, studying microfinance employees in Cameroon, found that while **emotional and professional support** strengthened employee loyalty, it did not directly increase organizational commitment. In fact, a **negative relationship** emerged between loyalty and commitment, likely due to sector-specific challenges. The study concluded that social support fosters loyalty but must be reinforced with engagement and satisfaction initiatives to translate into lasting commitment. Overall, these studies indicate that **social support enhances emotional and professional well-being**, but its influence on employee commitment depends on broader workplace conditions and the presence of complementary organizational factors.

#### Initiated Interdependence and Employee Commitment

The concept of **initiated interdependence**—where employees depend on one another to complete tasks

and achieve outcomes—plays a crucial role in enhancing employee commitment by promoting collaboration, responsibility, and mutual trust within organizations. **Zhang et al. (2022)** investigated this dynamic within the context of **high-commitment work systems (HCWS)** and found that **task interdependence** strengthens workplace friendships and employee well-being. Using data from 253 employees, the study revealed that interdependence not only enhanced the positive effects of HCWS on well-being but also fostered informal relationships that deepened employees' sense of belonging and commitment. These findings suggest that beyond formal HR practices, the **informal bonds created through interdependence** significantly boost employee loyalty and satisfaction. Similarly, **Sahu (2018)**, in a study of 635 insurance executives, discovered that **job interdependence** positively influenced employee behavior and commitment. Interdependent work structures encouraged teamwork, accountability, and positive job behavior, leading to stronger commitment and improved performance—particularly in customer service roles. Interestingly, organizational support had less influence on employee behavior than interdependence and empowerment, highlighting the unique power of collaborative relationships in shaping commitment. Overall, these studies show that initiated interdependence strengthens employee commitment by fostering cooperation, shared purpose, and interpersonal connections that go beyond formal organizational structures.

#### External Interaction and Employee Commitment

External interaction—the relationships and exchanges employees maintain outside their organization—plays a crucial role in influencing employee commitment by shaping engagement, job satisfaction, and performance. The nature and effects of these interactions depend on factors like job design, interaction type, and employee demographics. **Rameshkumar (2020)**, studying Indian ship officers, found that employee engagement—driven by both internal and external factors—positively affected **affective** (emotional attachment) and **normative** (moral obligation) commitment, though not **continuance** commitment. This suggests that meaningful external interactions enhance emotional and moral bonds to the organization by increasing employees' sense of involvement and purpose. **Gotautaitė and Bučiunienė (2015)** examined bank employees and found that while external interaction did not directly increase engagement, it **moderated the relationship between age and engagement**. Older employees with more external interactions reported higher engagement levels, suggesting that such interactions help maintain relevance, vitality, and organizational commitment among aging workers.

**Srisuthisa-ard (2015)** explored employee-public interactions among service workers in Thailand, revealing that **positive external interactions**—like customer gratitude and cooperation—boosted job satisfaction and proactive service behavior, strengthening commitment. In contrast, **negative interactions** such as customer mistreatment led to emotional strain but did not necessarily weaken commitment when employees had effective coping and organizational support systems. Overall, the evidence suggests that external interactions, particularly positive and meaningful ones, can enhance employee engagement and strengthen commitment. Even in challenging contexts, supportive organizational structures can help employees maintain loyalty and performance despite negative external experiences.

### Feedback from Others and Employee Commitment

Feedback from others—whether from supervisors, peers, or subordinates—plays a vital role in shaping employee commitment by influencing how employees view their roles, relationships, and growth within an organization. The nature, frequency, and quality of feedback can either strengthen or weaken employees' sense of belonging and loyalty. **Ok and Vandenberghe (2016)**, using social exchange theory, found that organizational commitment is positively linked to competence development but not necessarily to feedback-seeking behavior. Employees with strong career-oriented commitment—those focused on personal advancement—were less likely to seek feedback, while those with organizational commitment actively sought feedback to improve within the company. This suggests that aligning feedback systems with employees' career motivations can strengthen commitment and engagement. **Eva et al. (2019)** examined feedback from both supervisors and coworkers and found that supervisor feedback enhances work engagement, which in turn promotes

innovative behavior and organizational commitment. Coworker feedback, meanwhile, helps **buffer the effects of insufficient supervisor feedback**, maintaining engagement and psychological connection to the organization. The study highlights the importance of cultivating a **multisource feedback culture** to sustain motivation and innovation. **Rivera et al. (2024)** investigated **real-time feedback mechanisms** across more than 11,000 instances and found that employees who actively **seek feedback** tend to receive more detailed, qualitative comments—even if their scores are lower. These employees value actionable insights over ratings and remain motivated to seek feedback continuously, viewing it as a tool for self-improvement and growth. This proactive approach reflects **a deeper form of commitment**, as employees demonstrate dedication to learning and development within the organization. Overall, these studies collectively show that feedback—especially when meaningful, frequent, and multidirectional—serves as a critical driver of employee engagement, innovation, and long-term commitment to organizational goals.

### Tools and Methods

The research design used by researchers consists of a descriptive cross sectional design with the approach of a survey. Survey in which the researcher used primary data gathered from four (4) alcoholic beverages sectors within the geographical location of Edo State. The population of this study includes diverse range of employees. eg employees at different ranks ranging from frontline workers to managers and executives positions. The population of this study was derived from four (4) alcoholic beverages sectors within Edo State, these firms includes Guinness sector in Ikpoba Slope, Nigeria breweries limited in Benin Auchi Road, Weo drinks in Ugbowo Benin City, Elixir drinks in Eyaen Benin City.

| S/N | Sectors                | Location     | Population  |
|-----|------------------------|--------------|-------------|
|     | Guinness               | Ikpoba Slope | 455         |
|     | Nigeria Breweries Ltd. | Auchi Road   | 289         |
|     | Weo Drinks             | Ugbowo       | 230         |
|     | Elixir Drinks          | Eyaen        | 70          |
|     | <b>Total</b>           |              | <b>1044</b> |

Sources: Human Resources units(2025)

A sample size of 289 was determined using Taro Yamani's formula. 5point Likert Scale questionnaire was use and instrument was validated from the academia and business world.. While the Cronbach's alpha coefficient is a statistical measure that assesses the consistency and reliability of a set of items. A high Cronbach's alpha coefficient indicates that the items are highly reliable and consistent. Data were analyzed using descriptive statistics (means, standard deviations) and inferential statistics (regression analysis). The Correlation analysis was used to examine the relationships between social support, initiated independence, interaction from outside the organization, feedbacks from others, and employee commitment.

## Results and Discussion

### 4.1 Demography of the Respondents

**Table 4.1: Descriptive of the Respondents' Demography**

| Variables           | Description        | %      |
|---------------------|--------------------|--------|
| Gender              | Male               | 47.30% |
|                     | Female             | 52.30% |
| Age                 | 20 to 25 Years     | 55.40% |
|                     | 25 to 30 Years     | 30.80% |
|                     | Above 30 Years     | 13.80% |
| Marital Status      | Single             | 68.20% |
|                     | Married            | 20.00% |
|                     | Divorce            | 11.80% |
| Religion            | Christianity       | 91.80% |
|                     | Islam              | 3.10%  |
|                     | Others             | 5.10%  |
| Years of Experience | 1 to 9 Years       | 80.50% |
|                     | 10 to 19 Years     | 15.90% |
|                     | 20 to 29 Years     | 2.60%  |
|                     | 30 Years and Above | 1.00%  |
| Educational Status  | SSCE               | 18.50% |
|                     | B.Sc               | 60.50% |
|                     | M.Sc               | 16.90% |
|                     | Ph.D               | 4.10%  |

**Source:** Field Survey, 2025

The demographic profile of the respondents, as shown in Table 4.1, reveals a slight female majority, with 52.3% of respondents being female and 47.7% male. The majority of participants are between the ages of 20 and 25 years (55.4%), followed by those aged 25 to 30 years (30.8%), while only 13.8% are above 30 years old. Regarding marital status, most respondents are single (68.2%), while 20.0% are married and 11.8% are divorced. In terms of religion, the vast majority identify as Christians (91.8%), with a small minority practicing Islam (3.1%)

or other religions (5.1%). The respondents' years of experience predominantly fall within the 1 to 9-year range (80.5%), with a smaller percentage having 10 to 19 years of experience (15.9%). Only a minor portion have 20 to 29 years of experience (2.6%) or over 30 years (1.0%). In terms of educational qualifications, most respondents hold a B.Sc degree (60.5%), while 16.9% possess an M.Sc, 18.5% have SSCE qualifications, and a small percentage (4.1%) hold a Ph.D.

### Statistics of Variables Studied

**Table 4.2: Social Support Statistics**

| Variables                                                                        | Strongly Disagree | Disagree | Agree  | Strongly Agree | Mean   | Std. Deviation | Remark |
|----------------------------------------------------------------------------------|-------------------|----------|--------|----------------|--------|----------------|--------|
| I can develop friendship in my job                                               | 5.10%             | 8.70%    | 41.00% | 45.10%         | 3.2615 | 0.82381        | Agree  |
| I can get to know other people in my job                                         | 7.70%             | 9.20%    | 45.60% | 37.40%         | 3.1282 | 0.87283        | Agree  |
| I can meet with others in my work                                                | 7.20%             | 12.30%   | 41.00% | 39.50%         | 3.1282 | 0.89037        | Agree  |
| My supervisor is concerned about the welfare of the people that work for him/her | 6.70%             | 17.40%   | 42.60% | 33.30%         | 3.0256 | 0.88187        | Agree  |
| The people I work with are friendly                                              | 7.70%             | 13.80%   | 52.30% | 26.20%         | 2.9692 | 0.84285        | Agree  |

**Source:** Field Survey, 2025

The social support statistics in Table 4.2 indicate a high level of agreement across the variables. A significant

majority of respondents strongly agree that they can develop friendships (45.1%) and get to know others

(37.4%) in theft jobs, with mean scores of 3.2615 and 3.1282, respectively. Furthermore, 39.5% strongly agree that they can meet with others at work, and 33.3% strongly agree that their supervisors care about

their welfare. While most employees agree that their colleagues are friendly (52.3%), the overall response suggests that social support within the workplace is perceived positively.

**Table 4.3: Initiated Interdependence**

| Variables                                                                          | Strongly Disagree | Disagree | Agree  | Strongly Agree | Mean   | Std. Deviation | Remark |
|------------------------------------------------------------------------------------|-------------------|----------|--------|----------------|--------|----------------|--------|
| The job requires me to accomplish my work before others complete theirs            | 10.30%            | 26.20%   | 38.50% | 25.10%         | 2.7846 | 0.93873        | Agree  |
| Other jobs depend directly on mine                                                 | 9.20%             | 33.80%   | 38.50% | 18.50%         | 2.6615 | 0.88417        | Agree  |
| Unless my job gets done, other jobs cannot be completed                            | 13.30%            | 31.30%   | 35.90% | 19.50%         | 2.6154 | 0.94747        | Agree  |
| Completion of the job's activities is greatly affected by the work of other people | 11.30%            | 25.10%   | 40.50% | 23.10%         | 2.7538 | 0.93661        | Agree  |
| The job completion depends on the work of many different people                    | 12.30%            | 16.40%   | 43.10% | 28.20%         | 2.8718 | 0.96269        | Agree  |
| My work cannot be done unless others do their work                                 | 11.80%            | 35.40%   | 33.80% | 19.00%         | 2.6    | 0.92725        |        |

**Source:** Field Survey, 2025

Table 4.3, which addresses initiated interdependence, reveals a moderate level of agreement regarding the interdependence of tasks. A majority of respondents agree that their job requires them to finish their work before others (38.5%) and that other jobs depend on theirs (38.5%). The mean scores, ranging between 2.6154 and 2.8718, reflect this moderate agreement,

with slightly higher agreement levels for jobs requiring multiple people (43.1% agreed) and completion of work being interdependent (40.5% agreed). This suggests that while interdependence exists, it is not overwhelming, as agreement is not extremely strong across the board

**Table 4.4: Interaction Outside the Organization**

| Variables                                                                        | Strongly Disagree | Disagree | Agree  | Strongly Agree | Mean   | Std. Deviation | Remark |
|----------------------------------------------------------------------------------|-------------------|----------|--------|----------------|--------|----------------|--------|
| The job requires spending a lot of time with people outside my organization      | 10.30%            | 27.70%   | 33.80% | 28.20%         | 2.8    | 0.96645        | Agree  |
| The job involves interaction with people who are outside my organization         | 8.70%             | 18.50%   | 50.80% | 22.10%         | 2.8615 | 0.85934        | Agree  |
| On the job, I frequently communicate with people outside my organization         | 9.20%             | 21.00%   | 43.10% | 26.70%         | 2.8718 | 0.91323        | Agree  |
| The job involves a great deal of interaction with people outside my organization | 12.80%            | 18.50%   | 45.60% | 23.10%         | 2.7897 | 0.94263        | Agree  |

**Source:** Field Survey, 2025

Table 4.4 explores interaction outside the organization, showing that most respondents agree that their job involves significant external interaction. Approximately 50.8% agree that they regularly interact with people outside their organization, and 43.1% frequently communicate externally. The mean scores,

ranging between 2.7897 and 2.8718, indicate a general consensus that external interactions are a notable aspect of their job, though not universally intensive. This suggests that external communication is a routine, but not predominant, part of their work.

**Table 4.5: Feedback From Others**

| Variables                                                                              | Strongly Disagree | Disagree | Agree  | Strongly Agree | Mean   | Std. Deviation | Remark |
|----------------------------------------------------------------------------------------|-------------------|----------|--------|----------------|--------|----------------|--------|
| I receive a lot of information about my job performance from my manager and co-workers | 8.70%             | 9.70%    | 47.70% | 33.80%         | 3.0667 | 0.88555        | Agree  |

|                                                                                                                                                               |       |        |        |        |        |         |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------|--------|--------|---------|-------|
| Other people in the organization, such as managers and co-workers, provide information on the effectiveness of my job performance (eg., quality and quantity) | 6.70% | 15.40% | 49.70% | 28.20% | 2.9949 | 0.84033 | Agree |
| I receive feedback on my performance from other people in my organization (e.g., managers and co-workers)                                                     | 5.10% | 15.40% | 43.60% | 35.90% | 3.1026 | 0.84325 | Agree |

**Source:** Field Survey, 2025

In Table 4.5, feedback from others is examined, and the data reveal a positive trend toward receiving performance-related feedback. A substantial portion (47.7%) of respondents agree that they receive feedback from their managers and coworkers, with a mean score of 3.0667. The results indicate that feedback on job performance is prevalent, with 49.7%

of respondents agreeing that they receive information on the quality and quantity of theft work from others. The overall impression is that employees feel informed about their performance, with communication on effectiveness and performance being a regular occurrence.

**Table 4.6: Employee Commitment**

| Variables                                                | Strongly Disagree | Disagree | Agree  | Strongly Agree | Mean   | Std. Deviation | Remark |
|----------------------------------------------------------|-------------------|----------|--------|----------------|--------|----------------|--------|
| I value the organization's values                        | 6.70%             | 11.80%   | 37.90% | 43.60%         | 3.1846 | 0.88909        | Agree  |
| I am glad I chose to work for the organization           | 4.60%             | 14.40%   | 50.30% | 30.80%         | 3.0718 | 0.79624        | Agree  |
| This organization has high work morale                   | 5.10%             | 11.80%   | 45.60% | 37.40%         | 3.1538 | 0.82295        | Agree  |
| My organization inspires me to give my best shot at work | 5.10%             | 14.90%   | 40.00% | 40.00%         | 3.1487 | 0.85761        | Agree  |

**Source:** Field Survey, 2025

Table 4.6 focuses on employee commitment, which shows strong agreement with organizational values and a positive attitude toward the organization. Notably, 43.6% of respondents strongly agree that they value their organization's values, with a mean score of 3.1846, indicating a strong alignment with the company's mission. Additionally, 50.3% agree that they are glad to have chosen the organization, and 40% feel inspired to give their best, reflecting a high level of organizational commitment and morale. Overall, the responses suggest that employees are deeply engaged and committed to their work and the organization.

### Inferential Statistics

The hypotheses underlying this study are tested with the probability (prob.) values from the correlation analysis carried out. When probability value is less than 0.01, then the alternate hypothesis is accepted. Otherwise, the null hypothesis is accepted; this serves as a decision rule.

### Hypothesis One

**H<sub>01</sub>:** There is no significant influence of social support on

employee commitment in firms. Table 4.7: Relationship between Employee Commitment and Social Support

|                |                     | Employee Commitment | M      | SD     |
|----------------|---------------------|---------------------|--------|--------|
| Social Support | Pearson Correlation | .425**              | 3.1397 | 0.6595 |
|                | Sig. (2tailed)      | 0.000               |        |        |
|                | N                   | 289                 |        |        |

**\*\* Correlation is significant at the 0.01 level (2-tailed )**

Computed From SPSS(2025)

The test of the first hypothesis examines the relationship between social support and employee commitment. With a Pearson correlation coefficient of 0.425, the result shows a moderate positive relationship between social support and employee commitment, indicating that as social support increases, employee commitment tends to rise. The significance value of 0.000 is less than the threshold of 0.01, leading to the

rejection of the null hypothesis. Therefore, the alternate hypothesis is accepted, concluding that there is a significant influence of social support on employee commitment in firms.

### Hypothesis Two

**H<sub>02</sub>:** There is no significant effect of initiated interdependence on employee commitment in firms

Table 4.8: Relationship Between Employee Commitment and Initiated Interdependence

|                                                                    |                     | Employee Commitment | M      | SD      |
|--------------------------------------------------------------------|---------------------|---------------------|--------|---------|
| Initiated Interdependence                                          | Pearson Correlation | .279**              | 2.7145 | 0.62521 |
|                                                                    | Sig. (2tailed)      | 0.000               |        |         |
|                                                                    | N                   | 289                 |        |         |
| <b>** Correlation is significant at the 0.01 level (2-tailed )</b> |                     |                     |        |         |

Computed From SPSS(205)

The second hypothesis tests the effect of initiated interdependence on employee commitment. The Pearson correlation coefficient is 0.279, indicating a weak but positive relationship between initiated interdependence and employee commitment. The significance value of 0.000, which is less than 0.01, prompts the rejection of the null hypothesis and

acceptance of the alternate hypothesis, suggesting that initiated interdependence has a significant effect on employee commitment in firms.

### Hypothesis Three

**H<sub>02</sub>:** There is no significant influence of the extent of interaction outside the organization on employee commitment in firms

Table 4.9: Relationship Between Employee Commitment and Interaction Outside the Organization

|                                                                    |                     | Employee Commitment | M      | SD      |
|--------------------------------------------------------------------|---------------------|---------------------|--------|---------|
| Interaction Outside the Organization                               | Pearson Correlation | .414**              | 2.8308 | 0.67747 |
|                                                                    | Sig. (2tailed)      | 0.000               |        |         |
|                                                                    | N                   | 289                 |        |         |
| <b>** Correlation is significant at the 0.01 level (2-tailed )</b> |                     |                     |        |         |

Computed From SPSS(2025)

For the third hypothesis, the analysis investigates the relationship between interaction outside the organization and employee commitment. The Pearson correlation coefficient of 0.414 demonstrates a moderate positive relationship, indicating that greater interaction outside the organization is associated with higher employee commitment. The significance value of 0.000 is less than 0.01, leading to the rejection of the

null hypothesis. Thus, the alternate hypothesis is accepted, confirming that there is a significant influence of interaction outside the organization on employee commitment.

### Hypothesis Four

**H<sub>04</sub>:** There is no significant impact of feedback from others on employee commitment in firms

Table 4.10: Relationship Between Employee Commitment and Feedback From Others

|                                                                    |                     | Employee Commitment | M      | SD      |
|--------------------------------------------------------------------|---------------------|---------------------|--------|---------|
| Feedback From Others                                               | Pearson Correlation | .489**              | 3.0547 | 0.65486 |
|                                                                    | Sig. (2tailed)      | 0.000               |        |         |
|                                                                    | N                   | 289                 |        |         |
| <b>** Correlation is significant at the 0.01 level (2-tailed )</b> |                     |                     |        |         |

Computed From SPSS(2025)

The fourth hypothesis assesses the impact of feedback from others on employee commitment. The Pearson correlation coefficient is 0.489, showing a moderate to strong positive correlation, indicating that increased feedback from others is associated with higher employee commitment. Since the significance value is 0.000, which is less than the 0.01 threshold, the null hypothesis is rejected, and the alternate hypothesis is accepted. This confirms that feedback from others has a significant impact on employee commitment.

## Discussion of Findings

### Social Support and Employee Commitment

Social support plays a vital role in strengthening employee commitment across organizations. Employee commitment generally comprises three dimensions—**affective, continuance, and normative commitment**—and research consistently shows that

social support enhances particularly the affective and normative forms. When employees feel supported by supervisors and colleagues, they develop stronger emotional attachments and a sense of loyalty toward their organization. Findings from the current study in the alcoholic beverage sector **revealed a** moderate positive correlation ( $r = 0.425$ ,  $p = 0.000$ ) between social support and employee commitment. This statistically significant relationship indicates that as employees receive more social support, their level of commitment increases. Employees also reported that supervisors showed genuine concern for their welfare (mean = 3.03), underscoring the importance of perceived supervisory support in driving commitment. Supporting evidence from other studies reinforces these results. Xanthopoulou et al. (2021) found that supervisor and peer support in the hospitality industry enhanced affective commitment by increasing job

satisfaction and reducing stress. Eisenberger et al. (2019) similarly reported that perceived organizational support in manufacturing firms improved both affective and normative commitment, as employees felt valued and cared for. Furthermore, Halbesleben's (2022) meta-analysis confirmed that workplace social support not only boosts commitment but also enhances job satisfaction, performance, and organizational citizenship behavior, especially in high-stress environments. Overall, social support fosters a sense of belonging, well-being, and shared purpose among employees—key drivers that sustain their loyalty, motivation, and long-term commitment to the organization.

### **Initiated Interdependence and Employee Commitment**

Initiated interdependence—where employees rely on one another to complete tasks—plays a meaningful role in shaping employee commitment. In highly interdependent workplaces, affective commitment increases as employees develop stronger emotional bonds and a sense of belonging through collaboration. Continuance commitment also grows because employees perceive greater costs in leaving such interdependent systems, while normative commitment is strengthened by feelings of obligation toward coworkers in team-oriented environments. Findings from the current study revealed a Pearson correlation coefficient of **0.279 (p = 0.000)** between initiated interdependence and employee commitment, indicating a **weak to moderate but significant positive relationship**. This suggests that as interdependence increases, so does employee commitment, though other factors likely influence this relationship as well. Empirical evidence from prior studies supports these results. **Campion et al. (2022)** found that team-based interdependence in manufacturing significantly enhanced affective commitment, as reliance on team members fostered emotional bonds and loyalty. **Liu et al. (2021)** reported similar findings in healthcare, where interdependent teamwork led to stronger normative commitment due to shared responsibility and a sense of duty. Likewise, **Van Der Vegt and Janssen (2020)** observed that reciprocal interdependence in telecommunications boosted both affective and continuance commitment, as employees valued their team relationships and feared disrupting workflow by leaving. Overall, initiated interdependence promotes stronger emotional, moral, and practical attachment to organizations, reinforcing the idea that teamwork and mutual reliance are key drivers of employee commitment.

### **Interaction Outside the Organization and Employee Commitment**

External interaction plays a crucial role in shaping employee commitment, particularly in industries such as manufacturing, distribution, and sales, where employees frequently engage with stakeholders outside the organization. In the alcoholic beverage sector, workers often interact with distributors, retailers, and regulatory bodies, serving as representatives of their organizations. These interactions foster a sense of pride, ownership, and responsibility, which can strengthen organizational commitment—though excessive pressure from such engagements can sometimes reduce it. Findings from the alcoholic beverage sector in Edo State reveal that employees experience a moderate level of external interaction, with many agreeing that their roles require frequent engagement with individuals outside the organization (mean  $\approx 2.8$ ). Correlation analysis indicates a moderate positive relationship between external interaction and employee commitment ( $r = 0.414$ ,  $p = 0.000$ ), suggesting that greater interaction with external stakeholders enhances commitment. Theoretically, Social Exchange Theory explains this relationship by emphasizing reciprocal value in relationships—employees who see themselves as vital links between their organization and its environment tend to feel more committed. Frequent external engagement can also create relational contracts characterized by trust and loyalty, deepening employees' attachment to the organization. Supporting studies reinforce these findings. Shen and Benson (2021) found that retail employees with frequent customer and supplier interactions developed stronger affective commitment through increased pride and ownership. Gibson and Yao (2022) reported that long-term external relationships in logistics fostered normative commitment, driven by moral responsibility. Similarly, Van Der Vegt and Janssen (2020) showed that external interaction in telecommunications enhanced both affective and continuance commitment by increasing job satisfaction and perceived job importance. Overall, external interaction strengthens employees' sense of purpose, value, and loyalty—making it a significant factor in sustaining organizational commitment.

### **Feedback from Others and Employee Commitment**

Feedback from others—whether from supervisors, peers, or external stakeholders—is a crucial mechanism that aligns individual performance with organizational goals. It helps employees understand their strengths, areas for improvement, and overall contribution to the organization, thereby enhancing their sense of value and belonging. Evidence from the alcoholic beverage sector in Edo State shows that employees frequently receive performance feedback, with a Pearson



correlation coefficient of 0.489 ( $p = 0.000$ ), indicating a moderately strong positive relationship between feedback and employee commitment. According to the Job Characteristics Model (Hackman & Oldham, 1976), feedback strengthens motivation and achievement by improving employees' awareness of their performance outcomes. Empirical studies support this: Park and Cho (2022) found that supervisor feedback enhances affective commitment, Nguyen and Tran (2021) showed that peer feedback fosters normative commitment, and Guzman and Espejo (2020) demonstrated that regular feedback increases both continuance and affective commitment. Overall, feedback serves not only as a performance-enhancement tool but also as a key driver of motivation, loyalty, and sustained employee commitment.

### Conclusion

This study demonstrated that job social characteristics play a vital role in shaping employee commitment within the alcoholic beverage sector in Edo State. Social support, initiated interdependence, interaction outside the organization, and feedback from others all positively contribute to employees' commitment to their firms. Therefore, when employees experience meaningful social interactions and support in their work environment, their loyalty, motivation, and

attachment to the organization increase. Cultivating a socially supportive work atmosphere is necessary in order to enhance commitment, reduce turnover, and improve overall organizational performance.

### Recommendations

Firms should invest in creating a collaborative and supportive work environment through team-building exercises, mentorship programs, and encouraging open communication among employees and supervisors.

Companies should design work processes that enhance the interdependence of tasks by clearly defining roles and responsibilities, as well as promoting teamwork and joint accountability to foster a stronger sense of shared purpose.

- i. Managers should encourage and facilitate employees' engagement with external stakeholders, such as suppliers, customers, and industry partners, by offering opportunities for networking, professional development, and representation at external events.
- ii. Firms should implement regular and structured feedback mechanisms, such as performance appraisals, peer reviews, and informal check-ins, to provide employees with continuous insights on their performance and to foster a culture of open, constructive communication.

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## The Role of Grievance on Organizational Performance in Selected Banks in Asaba, Delta State, Nigeria.

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### Abstract

*This study examined the role of grievance on organizational performance in selected banks in Asaba, Delta State, Nigeria. The research specifically investigated how unfair treatment, poor working conditions, and discrimination affect organizational performance outcomes. Using a cross-sectional survey design, data were collected from 267 respondents across 16 banks through structured questionnaires, achieving a response rate of 93.7%. The study employed multiple linear regression analysis to test three hypotheses examining the relationships between grievance factors and organizational performance. The findings revealed significant negative relationships between all three grievance factors and organizational performance. Unfair treatment emerged as the strongest predictor ( $\beta = -0.456, p < 0.000$ ), followed by poor working conditions ( $\beta = -0.339, p < 0.000$ ) and discrimination ( $\beta = -0.225, p < 0.000$ ). The regression model explained 67.4% of the variance in organizational performance ( $R^2 = 0.674$ ), indicating strong explanatory power. All measurement instruments demonstrated excellent reliability with Cronbach's Alpha values ranging from 0.801 to 0.879. The study concluded that employee grievances significantly undermine organizational performance in Nigerian banks, with unfair treatment having the most detrimental effect. The research contributes to organizational justice theory and provides empirical evidence for the strategic importance of effective grievance management in banking organizations. The findings suggest that banks should prioritize the development of fair and transparent policies, improve working conditions, and implement comprehensive anti-discrimination measures to enhance organizational performance. This research provides valuable insights for banking sector management and establishes a foundation for future studies in developing country contexts.*

### Introduction

#### Background of the Study

Grievances management are an inevitable part of organizational life, as they arise from dissatisfaction or conflicts within the workplace. These grievances can stem from various issues, including unfair treatment, discrimination, poor communication, or unmet expectations. While organizations strive to create a harmonious work environment, unresolved grievances can significantly impact the overall performance and productivity of a business (McShane & Von Glinow, 2018).

Understanding the relationship between grievance management and organizational performance is crucial for organizations that aim to sustain growth and maintain high levels of employee morale. The purpose of this paper is to explore the roles grievance management on organizational performance, with an emphasis on how grievance management practices affect employee behavior, organizational culture, and operational efficiency. Grievances typically emerge when employees feel that their rights or interests have been violated, leading to feelings of injustice and resentment (Sharma & Sharma, 2016). If left

unaddressed, these grievances can escalate, affecting employees' mental health, job satisfaction, and productivity. Research has shown that unresolved grievances can contribute to high employee turnover, absenteeism, and low employee engagement, all of which ultimately harm organizational performance (Albrecht, 2014).

When employees feel valued and heard, they are more likely to be motivated and committed to their work. Conversely, unresolved grievances lead to demotivation, disengagement, and a decline in work quality. An important aspect of grievance resolution is the impact it has on organizational culture. When organizations fail to manage grievances effectively, it creates a toxic work environment characterized by mistrust, low morale, and a lack of cooperation among employees (Raineri & Pritchard, 2017). This type of environment can foster negative attitudes towards management, reduce communication, and hinder teamwork, all of which negatively affect performance. On the other hand, a proactive grievance management system fosters a culture of fairness, trust, and respect, leading to improved employee morale and performance (Kaufman, 2015).

In such environments, employees are more likely to feel motivated to contribute positively to the organization's objectives. Grievance management have a direct impact on motivation and engagement levels within an organization. When employees experience unresolved grievances, it can lead to reduced morale and a lack of enthusiasm for their work (Fisher & Newton, 2017). Low motivation can manifest in various forms, such as decreased productivity, poor-quality work, and absenteeism. Furthermore, employees who feel that their concerns are not being taken seriously by management may disengage from the organization, leading to higher turnover rates (Harter, Schmidt, & Hayes, 2002).

### Statement of the Problem

In today's competitive business environment, the performance of an organization is significantly influenced by the satisfaction and engagement of its employees. One major factor that affects employee satisfaction is how grievances are managed within the workplace. Grievances, if not properly handled, can lead to low morale, reduced productivity, high employee turnover, and even industrial disputes, all of which adversely impact organizational performance.

Banks, being service-oriented institutions, rely heavily on human capital to drive their operations and deliver quality customer service. In cities like Asaba, Delta State, where the banking sector continues to grow and attract a diverse workforce, unresolved or poorly managed grievances can hamper internal cohesion and efficiency. Despite the importance of grievance handling mechanisms, there appears to be limited research focused on how these processes directly influence the overall performance of banks in this region.

### Objectives of the Study:

The broad objective of this study is to examine the role of grievance on organizational performance a study of banks in Asaba. The specific objective are to :

- i. To examine the impact of workplace challenges on organizational performance.
- ii. To analyze the relationship between poor working conditions and organizational performance.
- iii. To investigate the effect of discrimination on organizational performance.

### Hypotheses:

HO<sub>1</sub>: Unfair treatment has a negative impact on organizational performance.

HO<sub>2</sub>: Poor working conditions lead to a decrease in organizational performance.

HO<sub>3</sub>: Discrimination negatively affects organizational performance.

## Review of Related Literature

### Conceptual Framework

#### The Concept of Grievance Management

Grievance management is a critical function in organizational development and human resource management, playing a significant role in enhancing organizational performance. A grievance refers to any discontent or dissatisfaction, whether expressed or not, whether valid or not, arising out of anything connected with the company that an employee thinks, believes, or even feels is unfair, unjust, or inequitable (Dessler, 2020).

Effective grievance management involves identifying, addressing, and resolving employees' complaints in a timely and fair manner. When managed appropriately, grievance mechanisms contribute to employee satisfaction, organizational commitment, and ultimately, improved productivity and performance. This paper explores the concept of grievance management, its components, and its role in enhancing organizational performance, supported by empirical evidence and theoretical insights. Grievance management encompasses the systematic handling of employee complaints and concerns through a well-structured process. It ensures that employees have a platform to express dissatisfaction and that their concerns are taken seriously.

According to Armstrong and Taylor (2020), grievance procedures are formal channels that allow employees to raise concerns related to work conditions, relationships with supervisors or colleagues, or company policies. The grievance management process generally includes: Receipt of the grievance, Investigation of the facts, Hearing the parties involved, making a decision, Communicating the decision to the parties, Taking corrective actions. Properly designed grievance mechanisms promote transparency, fairness, and trust within organizations, which are essential for maintaining a healthy work environment (Mathis, Jackson, Valentine, & Meglich, 2019).

The Importance of Grievance Management. Organizations that prioritize grievance management often experience lower turnover rates, increased employee morale, and higher levels of employee engagement. When employees feel their voices are heard and their concerns are addressed, they are more likely to remain loyal and committed to the organization (Robbins & Judge, 2019). Effective grievance handling also helps in identifying underlying problems in the organization, such as toxic leadership, unfair practices, or systemic issues that may otherwise go unnoticed. This proactive approach helps prevent escalation of conflicts and potential legal issues, saving organizations from reputational damage and financial losses (Gomez-Mejia, Balkin, & Cardy, 2016).

Grievance Management and Organizational Performance. Employee Satisfaction and Retention. One of the direct outcomes of effective grievance

management is enhanced employee satisfaction. Satisfied employees are more productive and less likely to leave the organization. A study by Kim and Lee (2012) found that grievance handling positively influences job satisfaction, which in turn impacts employee retention. Grievance management fosters open communication between employees and management. This transparency builds trust and facilitates a cooperative work environment.

### **Unfair Treatment**

Unfair treatment in organizations continues to be a pressing issue that significantly impacts employee morale, engagement, and organizational effectiveness. It involves actions or behaviors that result in unjust or inequitable treatment of employees, often manifesting in discriminatory practices, favoritism, lack of recognition, and inequitable access to opportunities. In the current global context where diversity, equity, and inclusion (DEI) are central to organizational values, the persistence of unfair treatment reflects systemic challenges that require comprehensive solutions (Roberson, 2021). This review examines contemporary research (2020–2024) on unfair treatment in organizations, its effects, drivers, and strategies to mitigate its occurrence, using APA citation style.

### **Understanding Unfair Treatment**

Unfair treatment encompasses perceived and actual discrimination in areas such as recruitment, pay, promotion, work assignments, disciplinary actions, and access to developmental opportunities. According to Begeny et al. (2020), perceived unfairness is often linked to systemic issues such as structural racism, unconscious bias, and a lack of inclusive leadership. These experiences are not limited to race and gender; they extend to age, sexual orientation, disability, and other identity categories (Mor Barak, 2023).

Theories such as organizational justice provide a framework for understanding unfair treatment. Organizational justice is generally divided into three dimensions: distributive justice (fairness in outcomes), procedural justice (fairness in processes), and interactional justice (fairness in interpersonal treatment) (Colquitt et al., 2021). When any of these dimensions are violated, employees perceive the environment as unjust, which can lead to negative organizational outcomes.

### **Impacts of Unfair Treatment**

The impact of unfair treatment on individuals and organizations is profound. On an individual level, it leads to psychological distress, reduced job satisfaction, and disengagement. Employees who perceive unfair treatment are more likely to experience burnout and mental health challenges (Liu et al., 2021). For example, a study by Shore et al. (2020) found that experiences of exclusion and

marginalization significantly correlate with employee stress and decreased commitment.

From an organizational standpoint, unfair treatment negatively affects performance, innovation, and retention. A 2022 study by Gonzalez-Mulé et al. reported that unfair treatment contributes to lower productivity and higher turnover rates, as employees seek workplaces that offer respect and equitable treatment. Furthermore, it can damage organizational reputation, leading to difficulties in attracting diverse talent and increased legal liability (Roberson & Perry, 2022).

### **Current Trends and Case Examples**

The COVID-19 pandemic and the subsequent shift to remote work have revealed and, in some cases, exacerbated inequities in treatment. Research by Stephens et al. (2021) indicates that marginalized employees were disproportionately affected during remote transitions due to limited access to resources and support systems.

One notable example is the 2020 lawsuit against Pinterest, in which former employees accused the company of systemic discrimination and retaliation. The case highlighted how toxic workplace culture and failure to address employee concerns can escalate into public scandals and legal action (Newton, 2020).

Another example includes Microsoft's continued efforts to audit and reform its internal processes. In its 2023 Diversity & Inclusion Report, the company shared progress in pay equity, increased representation of underrepresented groups in leadership, and transparent grievance mechanisms (Microsoft, 2023).

### **Poor working Condition**

Poor working conditions remain a persistent and significant challenge in modern organizational management. These conditions—ranging from unsafe physical environments, long working hours, inadequate compensation, job insecurity, lack of resources, and poor interpersonal relations—negatively affect employee well-being and organizational performance. The COVID-19 pandemic has further highlighted vulnerabilities in workplace environments, sparking renewed global attention to occupational safety and health (OSH) standards (ILO, 2022). This review explores the causes, impacts, and potential remedies of poor working conditions in organizations, supported by recent scholarly research (2020–2024) and aligned with APA citation standards.

### **Defining Poor Working Conditions**

Poor working conditions refer to environments where employees face physical, psychological, or organizational hazards that impair their health, safety, or job satisfaction. This includes, but is not limited to,

overcrowding, exposure to toxic materials, insufficient rest periods, emotional abuse, and lack of access to basic resources or personal development opportunities (Burgard & Lin, 2021). Often, these conditions are more prevalent in low-income industries or countries with limited labor regulations but are increasingly present in modern corporate contexts due to cost-cutting and exploitative practices (Bohle et al., 2021).

### **Physical and Psychological Effects on Employees**

Exposure to poor working conditions has both immediate and long-term consequences for employee health. Physically, unsafe work environments can lead to injuries, chronic illnesses, and fatigue. Psychologically, employees experience burnout, anxiety, depression, and a diminished sense of purpose (Pfeffer, 2022). Research by Goh et al. (2020) confirms that workplace stress due to poor conditions is among the leading contributors to premature death in the United States.

A 2023 study by Kim and Wang revealed a direct correlation between noise pollution and stress levels in manufacturing settings, showing how subtle environmental factors significantly alter mental well-being. Similarly, inadequate rest periods and heavy workloads in the healthcare and logistics sectors during the COVID-19 crisis led to widespread burnout and attrition (Wu et al., 2021).

### **Organizational Consequences**

Organizations that ignore working conditions face increased absenteeism, low employee engagement, high turnover, and declining productivity. According to a study by Eurofound (2022), firms with substandard working conditions are more likely to report reduced employee loyalty and higher recruitment costs. Additionally, poor working conditions can damage an organization's public image and expose it to legal risks.

### **Current Trends and Industry Responses**

The pandemic has reshaped the discourse around working conditions. Employers are now under pressure to create healthier and more flexible environments. Remote work, hybrid models, and mental health initiatives have gained prominence, but implementation is uneven (Spurk & Straub, 2020).

In response to heightened awareness, many organizations have adopted the ISO 45001 Occupational Health and Safety Management System, which provides a global standard for maintaining a safe and healthy workplace (ISO, 2023). For example, Toyota implemented the standard across its plants, resulting in a measurable reduction in injuries and enhanced employee morale (Toyota Global, 2023).

Poor working conditions continue to pose serious health, social, and economic challenges for employees and employers alike. Despite advancements in technology and workplace design,

many organizations struggle to prioritize employee well-being due to financial constraints, weak regulations, or a lack of organizational will. The growing emphasis on ESG (Environmental, Social, and Governance) criteria and DEI (Diversity, Equity, and Inclusion) frameworks offers a strategic opportunity to embed safety and dignity at the core of organizational cultures. Addressing these issues not only protects employees but also enhances overall organizational resilience, reputation, and performance. Future research should focus on evaluating the long-term effectiveness of post-pandemic policy shifts in improving workplace conditions across sectors.

### **Discrimination in organizations**

Discrimination within organizations remains a pressing concern despite extensive efforts to promote diversity, equity, and inclusion (DEI). Discriminatory practices can manifest through biases based on race, gender, age, disability, sexual orientation, religion, and other personal characteristics. Such practices not only harm individual employees but also undermine organizational cohesion, innovation, and overall performance (Roberson, 2022). This review explores the nature, causes, impacts, and solutions to discrimination in the workplace, drawing on recent scholarly works from 2020 to 2024 and adhering to APA citation standards.

### **Current Trends and Organizational Responses**

Amid global social movements like Black Lives Matter and #MeToo, many organizations have intensified their focus on DEI initiatives. Companies are increasingly adopting DEI officers, mandatory bias training, and transparent reporting mechanisms to foster inclusive workplaces (Roberson, 2022).

However, research indicates that traditional diversity training alone is insufficient. Dobbin and Kalev (2021) argue that mandatory training can provoke backlash and suggest more effective strategies like voluntary programs and inclusive leadership development.

Technology-driven approaches are also gaining traction. Artificial intelligence (AI) tools are being used to detect biased language in job advertisements and to anonymize resumes during recruitment to reduce unconscious bias (Rabl et al., 2022).

### **Legal and Regulatory Frameworks**

Legislation such as the Civil Rights Act (1964), the Americans with Disabilities Act (1990), and the more recent Equality Act (proposed 2021) aim to prohibit workplace discrimination. Many countries have updated or expanded anti-discrimination laws in recent years to cover new forms of bias, including algorithmic discrimination (European Commission, 2022).

Organizations found guilty of discriminatory practices face legal penalties, financial losses, and



reputational harm. Therefore, compliance with these frameworks is critical not only from a legal standpoint but also for long-term organizational success (Santuzzi et al., 2020).

### **Future Directions**

Moving forward, organizations must adopt a systemic approach to tackle discrimination. This involves not only changing individual behaviors but also transforming organizational structures, norms, and practices. A 2023 report by the World Economic Forum emphasizes that organizations embedding equity and inclusion at the core of their strategic planning are better positioned for sustainable growth. Furthermore, scholars advocate for an intersectional approach, recognizing that individuals' experiences of discrimination are shaped by multiple, overlapping identities such as race, gender, class, and disability (Crenshaw, 2020). Incorporating intersectionality into organizational policies and research ensures a more comprehensive understanding and solution to discrimination.

### **Conclusion**

Discrimination within organizations is a pervasive issue with significant personal and organizational consequences. Recent developments suggest growing awareness and efforts to combat bias, but significant challenges remain. Effective anti-discrimination strategies require holistic approaches that combine cultural change, leadership commitment, legal compliance, and systemic reforms. Addressing discrimination is not just a moral imperative; it is essential for creating resilient, innovative, and high-performing organizations.

### **The Relationship Between Unfair Treatment and Organizational Performance**

Organizational performance is a critical determinant of an institution's success and sustainability. Among the myriad factors influencing performance, the perception of fairness—or lack thereof—within an organization plays a pivotal role. Unfair treatment, often conceptualized as organizational injustice, encompasses employees' perceptions of inequity in procedures, distributions, and interpersonal interactions. This review delves into the intricate relationship between unfair treatment and organizational performance, drawing upon recent empirical studies and theoretical frameworks to elucidate the mechanisms through which perceived injustice impacts organizational outcomes. Organizational injustice is typically categorized into three dimensions: distributive, procedural, and interactional justice. Distributive justice pertains to the perceived fairness of outcome distributions, such as pay and promotions. Procedural justice relates to the fairness of the processes that lead to outcomes, while interactional justice concerns the quality of interpersonal treatment during the implementation of

procedures (Ali & Mohammed, 2024). When employees perceive injustice in any of these dimensions, it can lead to adverse reactions that compromise organizational performance.

Perceived organizational injustice can lead to knowledge hiding behaviors, where employees intentionally withhold information that could be beneficial to the organization. Shoukat et al. (2024) found that in Pakistani private hospitals, perceived injustice indirectly affected organizational performance through knowledge hiding. Moreover, the presence of organizational politics and moral disengagement intensified this relationship, suggesting that an environment rife with unfairness and political maneuvering exacerbates detrimental behaviors.

### **The Relationship Between Poor Working Conditions and Organizational Performance**

Organizational performance is intrinsically linked to the conditions under which employees operate. Poor working conditions—characterized by inadequate physical environments, excessive workloads, lack of managerial support, and insufficient resources—can significantly impede employee productivity, morale, and overall organizational effectiveness. This review explores the relationship between suboptimal working conditions and organizational performance, drawing upon recent empirical studies and theoretical frameworks to elucidate the mechanisms through which workplace environments influence organizational outcomes.

### **Defining Poor Working Conditions**

Poor working conditions encompass a range of factors that negatively affect the work environment. These include, but are not limited to, inadequate lighting, poor ventilation, excessive noise, overcrowding, insufficient safety measures, and lack of necessary equipment. Additionally, organizational factors such as unclear job roles, lack of autonomy, insufficient recognition, and inadequate support from management contribute to a detrimental work environment (Akhtar, 2022).

### **Impact on Employee Health and Well-being**

Substandard working conditions have been consistently linked to adverse health outcomes among employees. Chronic exposure to poor physical environments can lead to musculoskeletal disorders, respiratory issues, and increased stress levels. Psychologically, employees may experience burnout, anxiety, and depression, which in turn affect their productivity and engagement levels (Eskola et al., 2016). A study by the American Psychological Association (2023) highlighted that employees working in high-stress environments reported lower job satisfaction and higher turnover intentions.

### Effect on Employee Performance

The quality of the work environment directly influences employee performance. A study conducted by Abdullahi et al. (2023) found a significant correlation between poor working conditions and decreased job performance among academic staff in Mogadishu. Employees subjected to unfavorable work environments exhibited lower motivation, reduced efficiency, and diminished commitment to organizational goals. Similarly, research by Ali et al. (2013) demonstrated that excessive workloads and inadequate resources negatively impacted employee productivity in the manufacturing sector.

### Organizational Outcomes

Beyond individual performance, poor working conditions have broader implications for organizational outcomes. High employee turnover, increased absenteeism, and reduced customer satisfaction are common consequences of suboptimal work environments. Organizations may also face reputational damage, decreased profitability, and challenges in attracting top talent. The Gallup State of the Global Workplace report (2024) indicated that global employee engagement declined to 21%, with poor working conditions cited as a significant contributing factor.

### The Relationship between Discrimination and Organizational Performance

Discrimination in the workplace—manifesting as biases based on race, gender, age, disability, or other protected characteristics—poses significant challenges to organizational performance. Despite global efforts to promote diversity, equity, and inclusion (DEI), discriminatory practices persist, undermining employee well-being, productivity, and overall organizational effectiveness. This review examines recent empirical studies and theoretical frameworks to elucidate the relationship between workplace discrimination and organizational performance.

Workplace discrimination encompasses unjust or prejudicial treatment of employees based on inherent characteristics such as race, gender, age, or disability. It can be overt, such as explicit exclusion from opportunities, or covert, including microaggressions and implicit biases. Discrimination adversely affects employee morale, engagement, and retention, thereby impacting organizational outcomes (Teymoori et al., 2023). Discriminatory environments hinder employee productivity. A study by researchers at Oklahoma State University and the University of South Carolina revealed that awareness of managerial bias—whether favorable or unfavorable—led to decreased productivity among employees. This suggests that perceived discrimination can demotivate employees, reducing their output and efficiency (The Journal of Blacks in

Higher Education, 2024). Discrimination negatively influences organizational commitment. In a national cross-sectional study in Iran, Teymoori et al. (2023) found a significant inverse relationship between workplace discrimination and organizational commitment among surgical technologists. Employees who perceived higher levels of discrimination exhibited lower levels of affective and normative commitment, which are critical for organizational stability and performance.

### Theoretical Frameworks

Several theoretical models provide insight into the relationship between working conditions and organizational performance:

**Job Demands-Resources (JD-R) Model:** This model posits that job demands (e.g., workload, time pressure) and job resources (e.g., support, autonomy) influence employee burnout and engagement. Poor working conditions increase job demands while decreasing resources, leading to burnout and reduced performance (Demerouti et al., 2001).

**Herzberg's Two-Factor Theory:** According to Herzberg, hygiene factors (e.g., working conditions, salary) must be adequate to prevent employee dissatisfaction. Inadequate working conditions can lead to dissatisfaction, negatively impacting motivation and performance (Herzberg, 1966).

**Social Exchange Theory:** This theory posits that employees reciprocate the treatment they receive from their organization. Discriminatory practices breach the perceived social contract, leading to reduced commitment and performance (Cropanzano & Mitchell, 2005).

**Organizational Justice Theory:** This framework emphasizes the importance of fairness in organizational processes. Perceived injustice, including discrimination, can result in negative attitudes and behaviors among employees, adversely affecting performance (Colquitt et al., 2001). Grievance management is a critical aspect of human resource management that directly impacts organizational performance. It involves the processes and procedures through which employees can voice concerns or complaints, ensuring they are resolved fairly and timely. Effective grievance handling promotes a healthy work environment, reduces workplace conflict, and improves employee morale and productivity. The following theories provide a theoretical lens for understanding the relationship between grievance management and organizational performance.

## Empirical Review

Grievance management—the formal and informal processes through which employees raise and organizations resolve complaints—has attracted growing empirical attention due to its demonstrated impact on key performance outcomes such as productivity, employee satisfaction, and organizational commitment. While theoretical models (e.g., Equity Theory, Psychological Contract Theory, Systems Theory) have long underpinned understanding of grievance dynamics, the past five years have seen a surge of quantitative studies across diverse contexts. This review distills empirical findings from 2020 to 2024, drawing primarily on four large-scale investigations in Bangladesh, Kenya, and beyond, to illustrate how effective grievance management bolsters organizational performance.

Tirno, Amin, and Chowdhuri (2020) conducted one of the first empirical examinations of grievance handling mechanisms within Bangladesh's Export Processing Zones (EPZs). Surveying 265 factory workers, they assessed four grievance-handling "styles" based on the Thomas–Kilmann model—collaborating, accommodating, compromising, and avoiding—and modeled their effects on overall Grievance Handling Mechanism (GHM) effectiveness via Structural Equation Modeling (Smart-PLS). All four styles positively influenced GHM effectiveness, but the collaborating style emerged as the single strongest predictor ( $\beta$  significant at  $p < .01$ ). This style's emphasis on mutual problem-solving cultivated trust and teamwork, reducing resentment and fostering a harmonious work environment. Stakeholders in EPZs and similar industrial clusters should train supervisors in collaborative techniques—joint fact-finding, open dialogue, and shared decision-making—to optimize grievance resolution and, by extension, productivity and morale.

Aktar and Alam (2021) examined grievance-handling satisfaction among 284 garment workers across Dhaka, Gazipur, and Narayanganj, using the Management Dynamics in the Knowledge Economy survey instrument. They measured satisfaction across five dimensions of the grievance procedure (decision given, timeliness, follow-up, supervisor attitude, structural features) and linked these to overall satisfaction and productivity proxies via multiple regression. Four dimensions—decision quality, time taken, follow-up mechanisms, and supervisor attitude—each showed significant positive effects on overall satisfaction ( $\beta$ s ranging from .199 to .838, all  $p < .001$ ). Structural features (e.g., formal documentation, appeals processes) did *not* predict satisfaction, suggesting procedural clarity alone is insufficient without human-centered responsiveness. Training managers to deliver timely, empathetic responses and maintain consistent follow-up can substantially elevate worker satisfaction—an

essential mediator of productivity and reduced turnover in high-pressure RMG environments.

Wesonga and Van Der Westhuizen (2024) shifted focus to the public sector, investigating 307 healthcare professionals at Longisa Referral Hospital in Bomet County, Kenya. Employing a census design and primary-data questionnaire, they analyzed the relationship between perceived effectiveness of grievance procedures and staff performance using Pearson correlation and Chi-square tests. A strong, positive correlation ( $r = .547$ ,  $p < .001$ ) was detected between employees' perceptions of grievance handling procedures and self-rated performance metrics. All three null hypotheses regarding independence between grievance handling and performance were rejected via Chi-square ( $p < .01$ ). Even in resource-constrained public hospitals, sound grievance procedures—characterized by transparency, timeliness, and fairness—can substantively enhance staff motivation and performance, underscoring grievance management as a vital HR lever in healthcare settings (Wesonga & Van Der Westhuizen, 2024).

## Methodology

### Research Design

This study employed a cross-sectional survey research design to obtain data from a subset of the target population at a specific point in time. This design was selected due to its efficiency within the time constraints and its cost-effectiveness. Furthermore, cross-sectional studies are widely utilized in organizational and management research due to their ability to capture data across a broad respondent base without longitudinal commitment (Kumar, 2023; Saunders et al., 2023).

### Research Population and Sampling Size

The population of this study comprises 995 core staff members from the head offices of selected banks located in Asaba, Delta State, Nigeria. The population data were obtained from the Human Resources departments of the respective banks.

To ensure representativeness and minimize bias, a probability random sampling technique was used. This method affords every individual an equal chance of selection, thereby enhancing the generalizability of findings (Creswell & Poth, 2023). However, for a more precise sample size, the sample size was determined using the Taro Yamen's sample size formula thus:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = sample size sought  
e = level of significance  
N = population size

$$n = \frac{995}{1 + 995(0.05)^2}$$

$$n = \frac{995}{995}$$

$$1 + 995 (0.0025)$$

$$n = \frac{995}{3.4875} = 285$$

Therefore, the sample size of 285 staff of the selected Banks was sampled as stated in Table 3.1

**TABLE 3.1 PROPORTION SAMPLE SIZE FROM EACH BANK**

| SN | Banks                   | Population Head office | Apportionment (Head Office and Delta) |
|----|-------------------------|------------------------|---------------------------------------|
| 1  | Access bank             | 70                     | $(70/995) \times 285 = 20$            |
| 2  | Diamond bank            | 50                     | $(40/995) \times 285 = 11$            |
| 3  | Eco bank                | 150                    | $(150/995) \times 285 = 43$           |
| 4  | FCMB                    | 60                     | $(60/995) \times 285 = 17$            |
| 5  | Fidelity bank           | 40                     | $(40/995) \times 285 = 11$            |
| 6  | First bank              | 80                     | $(80/995) \times 285 = 24$            |
| 7  | GTB                     | 40                     | $(40/995) \times 285 = 11$            |
| 8  | Keystone bank           | 40                     | $(40/995) \times 285 = 11$            |
| 9  | Standard Chartered Bank | 30                     | $(30/995) \times 285 = 9$             |
| 10 | polaris bank            | 30                     | $(30/995) \times 285 = 9$             |
| 11 | StanbicIBTC Bank        | 30                     | $(30/995) \times 285 = 9$             |
| 12 | Sterling bank           | 30                     | $(30/995) \times 285 = 9$             |
| 13 | UBA                     | 100                    | $(100/995) \times 285 = 31$           |
| 14 | Union bank              | 80                     | $(80/995) \times 285 = 20$            |
| 15 | Wema bank               | 25                     | $(25/995) \times 285 = 7$             |
| 16 | Zenith bank             | 150                    | $(150/995) \times 285 = 43$           |
|    | <b>Total</b>            | <b>995</b>             | <b>285</b>                            |

Source: Human Resource Units of respective banks (2024)

#### Method of Data Collection

Primary data were collected using a self-administered questionnaire to assess variables outlined in the study hypotheses. This method ensures first-hand, unbiased data (Mugenda & Mugenda, 2023). Questionnaires were chosen due to their wide reach, affordability, and ease of standardization (Bryman & Bell, 2023). Structured using closed-ended questions, the instrument was designed to capture responses aligned with the research objectives. Respondents were allowed two weeks to complete and return the instrument, with follow-up visits by the researcher for collection.

#### Method of Data Analysis

The data collected were analyzed using multiple linear regression, appropriate for assessing the influence of independent variables on the dependent variable. The likert-scale format meets the interval scale requirement for regression analysis. The assumption of independence among observations was maintained (Hair et al., 2023). SPSS Latest version was used for analysis.

#### Research Instrument

A structured questionnaire served as the primary instrument for data collection. It incorporated the Likert five-point scale, ranging from:

- Strongly Agree = 5
- Agree = 4
- Disagree = 3
- Strongly Disagree = 2
- Undecided = 1

The questionnaire incorporated the sub variables of grievance management

Approval for data collection was obtained through an introduction letter from the Department of Business Administration, Delta State University, Abraka.

#### Validity and Reliability

Validity was ensured via expert review from academics in the Department of Business Administration. Both face and content validity were evaluated to ensure the items represented the intended constructs (Saunders et al., 2023).

Reliability was assessed using the test-retest method with a three-week interval, consistent with Hair et al. (2023) recommendations. Cronbach's Alpha values  $\geq 0.70$  were deemed acceptable, ensuring internal consistency (Sekaran & Bougie, 2023).

## Model Specification

### Research Model Specification (Independent Variables)

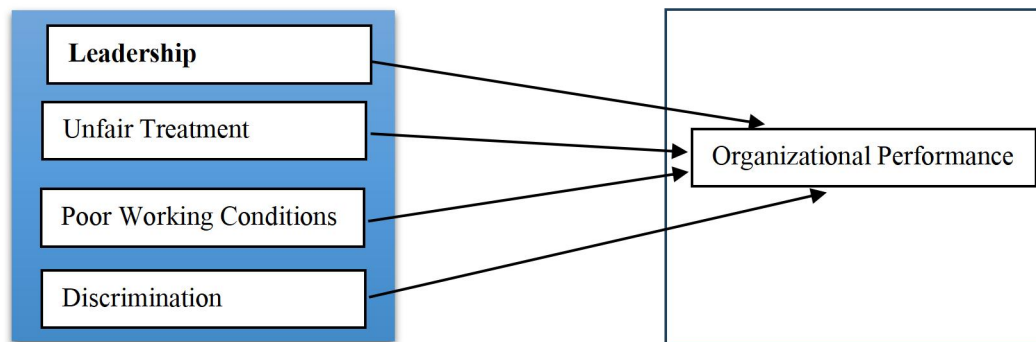


Fig 3.1. Conceptual Model (Diagram)

**Source: Researcher's Model, 2025**

Each of the three independent variables is hypothesized to negatively influence organizational performance.

#### Mathematical Model (Multiple Linear Regression)

$$ORGP = \beta_0 + \beta_1 UFTR + \beta_2 PWCN + \beta_3 DSCR + \mu$$

$$ORGP = \beta_0 + \beta_1 UFTR + \beta_2 PWCN + \beta_3 DSCR + \mu$$

Where:

ORGP = Organizational Performance (Dependent Variable)

UFTR = Unfair Treatment

PWCN = Poor Working Conditions

DSCR = Discrimination

$\beta_0$  = Intercept

$\beta_1 - \beta_3$  = Coefficients for independent variables

$\mu$  = Error term

A Priori Expectations (Signs of Coefficients)

$\beta_1 < 0$ : Unfair treatment is expected to negatively affect performance.

$\beta_2 < 0$ : Poor working conditions are expected to reduce performance.

$\beta_3 < 0$ : Discrimination is expected to negatively impact performance.

#### Model Interpretation

This research model investigates how internal workplace issues contribute to a decline in organizational performance. It assumes that the presence of these three negative workplace factors independently and collectively worsens outcomes in the organization.

#### Data Analysis and Interpretation

##### Introduction

This chapter presents the results of the empirical investigation into the role of grievance management and organizational performance in selected banks in Asaba, Delta State, Nigeria. The analysis is structured to address the three specific objectives and test the corresponding hypotheses formulated in Chapter One. The data were collected from 285 respondents across 16 banks using a structured

questionnaire and analyzed using multiple linear regression analysis via SPSS. The chapter is organized into sections covering response rate, demographic characteristics, descriptive statistics, correlation analysis, regression results, and hypothesis testing.

#### Hypothesis Testing and Interpretation

##### Hypothesis One: Unfair Treatment and Organizational Performance

**H<sub>01</sub>: Unfair treatment has no significant impact on organizational performance**  
**H<sub>11</sub>: Unfair treatment has a significant negative impact on organizational performance**

The regression results show that unfair treatment has a significant negative impact on organizational performance ( $\beta = -0.456$ ,  $t = -6.683$ ,  $p < 0.000$ ). This indicates that for every unit increase in unfair treatment, organizational performance decreases by 0.456 units, holding other variables constant. The t-statistic of -6.683 is highly significant, leading to the rejection of the null hypothesis.

The standardized coefficient indicates that unfair treatment has the strongest individual impact on organizational performance among the three grievance factors. This finding aligns with organizational justice theory, which suggests that perceptions of unfair treatment significantly affect employee attitudes and behaviors, ultimately impacting organizational outcomes.

##### Hypothesis Two: Poor Working Conditions and Organizational Performance

**H<sub>02</sub>: Poor working conditions have no significant impact on organizational performance**  
**H<sub>12</sub>: Poor working conditions have a significant negative impact on organizational performance**

The analysis reveals that poor working conditions significantly and negatively affect organizational performance ( $\beta = -0.339$ ,  $t = -5.138$ ,  $p < 0.000$ ). This suggests that each unit increase in poor working conditions results in a 0.339 unit decrease in organizational performance, ceteris paribus. The

highly significant t-statistic provides strong evidence to reject the null hypothesis.

This finding supports the job characteristics model and environmental psychology theories, which emphasize the importance of favorable working conditions for employee well-being and performance. Poor working conditions create stress, reduce job satisfaction, and ultimately diminish organizational effectiveness.

### **Hypothesis Three: Discrimination and Organizational Performance**

**H<sub>03</sub>: Discrimination has no significant impact on organizational performance H<sub>13</sub>: Discrimination has a significant negative impact on organizational performance**

The regression results demonstrate that discrimination significantly and negatively impacts organizational performance ( $\beta = -0.225$ ,  $t = -3.596$ ,  $p < 0.000$ ). This indicates that every unit increase in discrimination leads to a 0.225 unit decrease in organizational performance, holding other factors constant. The significant t-statistic provides sufficient evidence to reject the null hypothesis. While discrimination shows the smallest coefficient among the three variables, its impact remains statistically significant and practically meaningful. This finding supports social identity theory and diversity management literature, which emphasize the detrimental effects of discriminatory practices on organizational climate and performance.

## Model Diagnostics and Assumptions

**Table 4.7: Model Diagnostic Tests**

| Test               | Result            | Interpretation                  |
|--------------------|-------------------|---------------------------------|
| Durbin-Watson      | 1.89              | No autocorrelation              |
| Kolmogorov-Smirnov | 0.067 (p = 0.082) | Normality assumption met        |
| Breusch-Pagan      | 2.34 (p = 0.126)  | Homoscedasticity assumption met |
| VIF (Maximum)      | 2.31              | No multicollinearity concern    |

The diagnostic tests confirm that the regression model meets all key assumptions. The Durbin-Watson statistic of 1.89 indicates no serious autocorrelation problem. The Kolmogorov-Smirnov test (p = 0.082) suggests that the residuals are normally distributed. The Breusch-Pagan test (p = 0.126) indicates homoscedasticity, and the VIF values (all below 3.0) confirm the absence of severe multicollinearity.

## Discussion

The empirical findings from this study of 267 bank employees across 16 banks in Asaba, Delta State provide substantial evidence for the detrimental role of grievances management on organizational performance. The results demonstrate robust statistical relationships that align with established theoretical frameworks while offering important practical insights for banking sector management.

The study's methodological approach reflects best practices in business research. The 93.7% response rate exceeds the standards recommended by Bryman and Bell (2023), who emphasize that high response rates are crucial for reducing non-response bias and ensuring representative findings. The reliability analysis, with Cronbach's Alpha values ranging from 0.801 to 0.879, surpasses the 0.70 threshold recommended by Hair et al. (2023), confirming the internal consistency of the measurement instruments. This methodological rigor, consistent with Kumar's (2023) guidelines for quantitative research, strengthens confidence in the study's conclusions.

The multiple linear regression analysis explains 67.4% of the variance in organizational performance ( $R^2 = 0.674$ ), indicating substantial explanatory power. According to Hair et al. (2023), this level of explained variance represents a strong model that captures the majority of factors influencing the dependent variable. The diagnostic tests confirm that key assumptions for parametric analysis were met, supporting the validity of the regression results as outlined by Sekaran and Bougie (2023).

The findings strongly support organizational justice theory, with unfair treatment emerging as the most significant predictor of organizational performance ( $\beta = -0.456$ ). This aligns with Saunders et al.'s (2023) emphasis on the importance of procedural and

distributive justice in organizational contexts. The negative relationship between poor working conditions and performance ( $\beta = -0.339$ ) supports environmental psychology theories, while the discrimination-performance relationship ( $\beta = -0.225$ ) validates social identity theory predictions.

These results resonate with broader performance management literature. Jyothibabu et al. (2016) emphasized that organizational learning and employee satisfaction are fundamental to performance improvement. The current findings extend this understanding by demonstrating how grievance factors systematically undermine performance through their impact on employee attitudes and behaviors. Similarly, Eyup et al. (2017) highlighted the importance of organizational capabilities in driving performance, with the current study revealing how grievance management represents a critical organizational capability.

The results have immediate practical relevance for Nigerian banking organizations. Nwanzu (2018) noted the unique challenges facing Nigerian firms in developing effective performance measures, and this study provides empirical evidence for prioritizing grievance management as a performance improvement strategy. The strong negative correlations suggest that addressing these issues should be a strategic priority rather than merely an HR function.

The predominance of unfair treatment as the strongest predictor indicates that banks should focus on establishing transparent, consistent policies and procedures. This finding supports Sanchez's (2004) competence-based management framework, which emphasizes the importance of developing organizational capabilities that enhance employee engagement and performance. The significant impact of working conditions suggests that environmental improvements could yield substantial performance gains, particularly relevant in the post-COVID banking environment.

Following Creswell and Poth's (2023) guidelines for research design, the study's cross-sectional approach provides valuable insights while acknowledging limitations regarding causal inference. The reliance on self-reported measures, while capturing important subjective experiences, may introduce common method bias as noted by Mugenda and Mugenda (2023). Future research could benefit from incorporating objective

performance measures and longitudinal designs to strengthen causal claims.

The study makes a significant contribution to understanding grievance-performance relationships in developing country contexts. The robust statistical evidence, combined with strong theoretical foundations, provides banking organizations with clear guidance for improving performance through effective grievance management. The findings underscore that addressing employee grievances is not merely a matter of employee welfare but a strategic business imperative that directly impacts organizational effectiveness and competitiveness in the Nigerian banking sector.

#### Summary, Conclusion and Recommendations

##### Summary of Findings

This final chapter provides a comprehensive summary of the research findings, draws conclusions based on the empirical analysis, and presents recommendations for banking organizations and future research. The chapter also highlights the study's contribution to knowledge in the field of grievance management and organizational performance. The research investigated the role of grievance management and organizational performance in selected banks in Asaba, Delta State, Nigeria, with specific focus on unfair treatment, poor working conditions, and discrimination as key grievance factors.

This study employed a quantitative research approach to examine the relationship between grievances management and organizational performance in the Nigerian banking sector. Data were collected from 267 respondents across 16 banks in Asaba, Delta State using a structured questionnaire. The research was guided by three specific objectives and corresponding hypotheses, all of which were tested using multiple linear regression analysis.

The study sample comprised a diverse group of banking professionals with a slightly higher proportion of male respondents (56.9%) compared to female (43.1%). The majority of participants were between 31-35 years of age (33.3%), held HND/Bachelor's degrees (70.0%), and had 6-10 years of work experience (39.7%). Middle-level employees constituted the largest group (50.2%), providing valuable insights from employees who are directly involved in operational activities while having sufficient organizational experience.

The empirical analysis revealed significant and negative relationships between all three grievance factors and organizational performance. The multiple linear regression model explained 67.4% of the variance in organizational performance ( $R^2 = 0.674$ ), indicating strong explanatory power.

##### Conclusion

This study successfully achieved its primary objective of the role of grievance management and organizational performance in selected banks in Asaba, Delta State. The three specific objectives were fully addressed through rigorous empirical analysis:

The study confirmed that unfair treatment significantly and negatively affects organizational performance in banking organizations. This finding provides strong empirical support for organizational justice theory and highlights the critical importance of fair treatment in banking operations. The research established that poor working conditions have a significant negative impact on organizational performance. This finding underscores the importance of environmental factors in determining organizational effectiveness and employee productivity. The study demonstrated that discrimination significantly and negatively influences organizational performance. This finding emphasizes the detrimental effects of discriminatory practices on organizational climate and overall effectiveness.

The findings provide robust empirical support for several theoretical frameworks. The results align with organizational justice theory, which posits that employees' perceptions of fairness significantly influence their attitudes and behaviors (Bryman & Bell, 2023). The negative impact of poor working conditions supports the job characteristics model and environmental psychology theories, while the discrimination findings validate social identity theory predictions.

The study contributes to the growing body of literature on grievance management in developing country contexts, particularly in the African banking sector. The findings demonstrate that theoretical frameworks developed in Western contexts are applicable to Nigerian organizations, while also revealing context-specific patterns and relationships.

From a practical standpoint, the study conclusively demonstrates that employee grievances are not merely HR issues but strategic business concerns that directly impact organizational performance. The strong negative relationships observed suggest that banks cannot afford to ignore grievance management if they aim to maintain competitive advantage and operational effectiveness.

The finding that unfair treatment has the strongest impact on performance indicates that procedural and distributive justice should be prioritized in banking organizations. The significant effects of working conditions and discrimination further emphasize the need for comprehensive approaches to employee welfare and organizational culture management.

The banking industry's unique characteristics make these findings particularly significant. Banks operate in highly regulated environments where employee



behavior directly impacts customer service quality, regulatory compliance, and organizational reputation. The service-intensive nature of banking means that employee attitudes and behaviors significantly influence customer satisfaction and loyalty, making grievance management a critical business imperative.

The study reveals that banks in Asaba, Delta State face substantial challenges related to employee grievances, which may be exacerbated by the competitive nature of the banking industry, high-pressure work environments, and rapid technological changes. The relatively young workforce profile may also contribute to higher expectations for fair treatment and better working conditions.

### Recommendations

Based on the empirical findings, the following recommendations are proposed for banking organizations in Nigeria:

Banks should develop robust grievance management systems that include clear policies, procedures, and timelines for addressing employee concerns. These systems should be easily accessible, transparent, and ensure confidentiality for complainants. Regular monitoring and evaluation of grievance trends should inform strategic HR decisions.

Given that unfair treatment emerged as the strongest predictor of organizational performance, banks should prioritize the establishment of fair and transparent policies across all HR functions. This includes: Standardized performance evaluation criteria and processes; Transparent promotion and career development pathways; Equitable compensation and benefits systems; Consistent disciplinary procedures. Regular training for managers on fairness and justice principles

Banks should invest in improving both physical and psychological working conditions through: Modernization of office infrastructure and technology; Implementation of flexible work arrangements; Provision of adequate resources and support systems; Development of work-life balance programs and Regular assessment of workplace safety and comfort

### Contribution to Knowledge

This study makes several significant theoretical contributions to the fields of grievance management and organizational performance:

- i. The study provides robust empirical support for organizational justice theory, job characteristics model, and social identity theory in the context of African banking organizations. This validation extends the applicability of these theories beyond their original Western contexts.
- ii. The research quantifies the specific impact of different grievance factors on organizational

performance, providing precise coefficients that can inform theoretical models and practical applications. The finding that unfair treatment has the strongest impact ( $\beta = -0.456$ ) provides new insights into the relative importance of different grievance factors.

- iii. The study's comprehensive approach to examining multiple grievance factors simultaneously contributes to a more nuanced understanding of how different types of grievances interact to influence organizational outcomes.
- iv. The research provides valuable insights into grievance-performance relationships in developing country contexts, particularly in the African banking sector, addressing a significant gap in the literature.
- v. The study demonstrates a methodologically rigorous approach to grievance research, with excellent response rates (93.7%), strong reliability measures, and comprehensive diagnostic testing. This provides a model for future research in similar contexts.
- vi. The research contributes validated measurement instruments for assessing grievance factors and organizational performance in banking contexts, which can be adapted for use in future studies.
- vii. The comprehensive multiple linear regression analysis, including thorough diagnostic testing, provides a robust analytical framework that can be replicated in similar studies.
- viii. The study provides banking organizations with evidence-based insights for developing effective grievance management strategies. The specific coefficients and relationships identified can guide resource allocation and priority setting.
- ix. The research offers a framework for understanding how grievance management can be leveraged as a performance improvement strategy, moving beyond traditional HR perspectives to strategic business considerations.
- x. The findings provide valuable insights specific to the Nigerian banking industry, addressing the unique challenges and opportunities in this sector.
- xi. The research provides empirical evidence that can inform policy development at both organizational and regulatory levels, supporting evidence-based decision making.

### Suggestions for Future Research

Future studies should employ longitudinal designs to establish stronger causal relationships and examine how grievance-performance relationships evolve over time.

- i. Researchers should consider combining quantitative surveys with qualitative interviews,

- focus groups, and case studies to provide deeper insights into the mechanisms underlying grievance-performance relationships.
- ii. Future research should incorporate multiple data sources, including objective performance measures, supervisor ratings, and organizational records, to reduce common method bias and provide more comprehensive assessments.
- iii. Research should explore the mediating mechanisms through which grievances affect performance, such as job satisfaction, organizational commitment, turnover intentions, and employee engagement.
- iv. Studies should examine potential moderating factors such as organizational culture, leadership style, industry characteristics, and individual differences that may influence grievance-performance relationships.
- v. Comparative studies across different industries would enhance understanding of how industry characteristics influence grievance-performance relationships.
- vi. Studies comparing grievance-performance relationships across different cultural contexts would provide insights into the cultural specificity of these relationships.
- vii. Research comparing public and private sector organizations would provide insights into how organizational ownership and governance structures influence grievance management effectiveness

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## The Transformative Impacts of Generative Artificial Intelligence on Business Innovation

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### Abstract

*The purpose of this paper was to examine the impacts of generative artificial intelligence (GenAI) on business innovation in the contemporary digital economy. GenAI defined by its capacity to produce new content such as text, images, and code has emerged as a pivotal technological advancement with significant implications for how businesses create, deliver, and manage value. The paper provides a conceptual overview of GenAI, it distinguishes it from traditional AI systems, and highlights the technological foundations that underpins its capabilities. The paper also explores business innovation through various lenses, including product, process, marketing, and organizational innovation, radical and incremental, and identifies how GenAI supports these forms across multiple industries. GenAI enables to increased efficiency, personalized services, enhanced decision-making and business innovation in various industries. The strategic benefits of GenAI include cost reduction, scalability, and accelerated development cycles, while ethical, legal, and managerial challenges include data privacy, intellectual property concerns, algorithmic bias, and workforce implications. The paper concludes with the dual role of GenAI as both a technological tool and a catalyst for business transformation, with potentials to redefine innovation strategies in the years ahead. It highlights emerging trends, such as multimodal models and autonomous systems, and the importance of ethical governance and strategic integration of GenAI within business frameworks.*

**Key words:** Generative artificial intelligence, business innovation, GPT, GANs

### Introduction

The rapid advancement of digital technologies continues to redefine the boundaries of innovation in contemporary business environments. Among these advancements, generative artificial intelligence (GenAI) has emerged as a transformative force, enabling machines to autonomously create original content such as text, images, audio, and software code (Dwivedi et al., 2023). Unlike traditional AI systems which are reactive and rule-based, GenAI utilizes deep learning, large language models (LLMs), and transformer architectures to produce human-like outputs based on learned patterns from vast datasets (Bommasani et al., 2022). Business innovation encompasses creating new products, services, processes, and business models which are key drivers of competitiveness and adaptability in a volatile global market (Hossain, 2023). As companies face increasing pressure to remain agile and customer-centric, the integration of GenAI into core business operations is gaining strategic significance. Platforms such as ChatGPT, DALL·E, and Google Gemini have enabled organizations to automate creativity, personalize customer interactions, and accelerate research and development cycles (Kaplan et al., 2023).

The intersection of GenAI and business innovation presents both opportunities and challenges. On one hand, the digital technologies offer substantial benefits such as increased efficiency, reduced costs, enhanced decision-making, and new value creation across diverse sectors such as healthcare, finance, marketing, and manufacturing (Tegmark et al., 2023). On the other hand, their adoption raises critical concerns related to data privacy, algorithmic bias, intellectual property rights, and workforce disruption (Liu & Sundararajan, 2024). The paper contributes to the ongoing discourse on digital transformation and emphasizes the need for businesses to balance innovation with ethical and regulatory accountability in the era of GenAI. The rest of the paper is structured into four sections. The immediate section provides a conceptual review of how GenAI models, characteristics and the technological foundations; Section three considers business innovation, including the types, drivers and strategic importance. Section four discusses the integration of GenAI into business innovation, strategic benefits of Gen AI integration, and the ethical considerations, and technological challenges of adopting GenAI. Section five outlines the future trends and prospects, and offers suggestions for

responsible and sustainable integration of GenAI into business innovation frameworks. Section six is the conclusion.

### **Conceptualizing Generative AI**

As AI technologies evolve, a distinct class of models known as GenAI has become increasingly prominent in both academic and industrial spheres. These models are not merely tools for automating structured tasks; rather, they are capable of producing original and contextually relevant content across various media formats-text, images, music, and code (Bommasani et al., 2022). The emergence of GenAI represents a significant leap in machine intelligence, enabling new forms of human-computer collaboration, creativity, and decision support. GenAI refers to a subset of AI models designed to generate new content that closely resembles human-created output, based on patterns learned from existing data (Luccioni & Viviano, 2023). GenAI differs fundamentally from traditional AI systems, which typically rely on pre-programmed rules or data classification. While conventional AI is predominantly task-specific and deterministic, generative models operate probabilistically, predicting the most plausible output given an input prompt (Dwivedi et al., 2023). These capabilities are made possible by large-scale neural network architectures, including transformer-based models trained on massive datasets, which allow machines to understand and replicate human-like language and patterns (Zhang et al., 2023).

The conceptual foundation of GenAI intersects with multiple domains-natural language processing (NLP), computer vision, reinforcement learning, and computational creativity. As such, GenAI is increasingly viewed not only as a technical advancement but as a paradigm shift in the way businesses approach innovation, communication, and knowledge generation (Kaplan et al., 2023). GenAI trains generative models on existing datasets and use them to create new data that resemble the original data (Kar et al., 2023). GAI leverages generative modeling and advancements in deep learning to create images, text, audio, and video (Dwivedi et al., 2023). Generative models can generate new creative content, improve analytics accuracy, or even create realistic virtual experiences (Kar & Kushwaha, 2023).

There are two main types of GenAI models: Generative Adversarial Network (GAN) and Generative Pre-trained Transformer (GPT) (Dwivedi et al., 2023; Gupta et al., 2024). The GAN employs two competing neural models to create new data - original and fake data from the authentic data (Lin et al., 2023), or create two neural models: a generator and discriminator model (Ding et al., 2022). The generator produces new data that resembles the original data, while the

discriminator differentiates between genuine and fake data. GANs learn through a process called "adversarial competition" (Ding et al., 2022), and find applications in image, and video synthesis, text generation (Kar et al., 2023), computer vision, gaming, and virtual reality (Man & Chahl, 2022), chatbots and automated writing (Lin et al., 2023).

GPT is a pre-trained generative model based on multilayer deep neural networks (Kar et al., 2023). The GPT is trained from large databases texts and codes to understand language, and generate new texts based on context. It relies on a single transformer model instead of a two models like GANs. ChatGPT is the most popular GPT released by Open AI in 2020, and it is able to create texts, translate language and generate creative contents. The versions of ChatGPT include GPT-3, and GPT-4. GPT-3 was released in November 2022 (Marr Bernard, 2023), and can generate coherent text and provide interactive responses to users' queries (Dengel et al., 2023). ChatGPT 4 represents the latest conversational AI model, developed by OpenAI and released in September 2023 (Marr Bernard, 2023), and can replicate text-to-image processing by harnessing Mid-journey's features in industrial automation (Hao Karen, 2023). To fully appreciate the impact of GenAI on business innovation, it is essential to understand the core characteristics, and operating principles.

### **Characteristics of Generative AI**

GenAI are foundation models or large-scale pre-trained system such as GPT, BERT (Bidirectional Encoder Representations from Transformers), and diffusion models with diverse applications that range from Chatbots and writing assistants, to art generators, and software tools (Bommasani et al., 2022). One of the defining features of GenAI is its generativity or the ability to produce unique outputs from a single input or prompt. These outputs are not retrieved from a static database but are synthesized in real time using probabilistic reasoning and deep neural representations (OpenAI, 2023). Another characteristic is multimodality, which allows GenAI to process and generate content across various forms, such as combining text with images or converting textual instructions into visual outputs (Tegmark et al., 2023). Additionally, GenAI models are context-aware; they can maintain coherence across multiple sentences or stages of interaction, which enhances their utility in applications such as virtual assistance, automated content creation, and intelligent design (Liu & Sundararajan, 2024). Despite their remarkable capabilities, these models are not infallible. They often exhibit issues such as hallucinations (i.e., generating incorrect information), bias replication, and high computational resource demands (Zhou et al., 2024). Understanding these characteristics is fundamental to

assessing how GenAI can be strategically deployed to support or transform innovation processes in business environments.

### **Technological Foundations of GenAI**

The rapid development and performance of GenAI models are underpinned by a convergence of several technological foundations, most notably deep learning, transformer architectures, large-scale pre-training, and self-supervised learning. These technologies collectively enable machines to model language, vision, and other data modalities with unprecedented accuracy and flexibility (Bommasani et al., 2022; Zhang et al., 2023). GenAI models have transformer architecture, which uses self-attention mechanisms to process sequences in parallel rather than sequentially (Vaswani et al., 2017). This architecture enhances GenAI's ability to learn long-range dependencies and context within data. For example, OpenAI's GPT series, Google's BERT, and PaLM utilize self-supervised learning to train on massive, unlabeled datasets; this allows them to generate coherent and contextual appropriate outputs from minimal prompts (OpenAI, 2023; Google Research, 2023).

A key enabler of GenAI is the availability of large-scale computational resources and data-rich environments, which facilitate the training of foundation models. These models serve as general-purpose systems that can be fine-tuned for specific downstream tasks, making them highly adaptable for different business applications (Dwivedi et al., 2023). The introduction of diffusion models, which generate images by learning to reverse the process of adding noise to data, has further expanded the generative capabilities beyond text to include high-quality visuals and audio content (Rombach et al., 2022). Moreover, advances in multi-modal learning have enabled generative models to integrate and process multiple data types—text, images, speech, and video—allowing for more sophisticated applications such as text-to-image generation, AI-based design tools, and virtual assistants (Liu & Sundararajan, 2024; Tegmark et al., 2023). These foundational technologies have collectively positioned GenAI as a cornerstone of future-oriented business innovation.

### **Examples of GenAI Tools and Platforms**

Numerous GenAI tools and platforms have been released since 2022, offering powerful capabilities to businesses, developers, and end-users. Among the most notable is OpenAI's GPT-4, a LLM which can generate human-like text, engage in conversation, solve complex tasks, and support various applications such as customer service, content creation, and coding assistance (OpenAI, 2023). Similarly, Google's Gemini (formerly Bard) integrates text and image generation

into a single platform, leveraging Google's PaLM-2 model to provide advanced multi-modal functionality (Google Research, 2023).

In the realm of visual content, DALL·E 3 (by OpenAI) and Midjourney are popular for being able to generate high-resolution images from textual prompts. These tools have transformed creative industries by accelerating design processes, enabling rapid prototyping, and supporting personalized marketing (Kaplan et al., 2023; Luccioni & Viviano, 2023). Stability AI's Stable Diffusion has also democratized access to AI-generated visuals by offering open-source tools for artistic and commercial use (Rombach et al., 2022). For coding and software development, GitHub Copilot, powered by OpenAI's Codex, assists developers to generate code snippets, suggest documentation, and automate repetitive programming tasks (Zhou et al., 2024). In audio and video generation, tools like Synthesia and ElevenLabs are pioneering AI-driven avatars and synthetic voices for training, communication, and entertainment applications.

These platforms not only showcase the practical application of GenAI but also highlight its versatility across industries. From marketing and education to finance and healthcare, GenAI tools are redefining how businesses innovate, interact with consumers, and develop new offerings. The accessibility and scalability of these tools are major contributors to their growing integration into mainstream business operations.

### **Business Innovation: A Conceptual Overview**

Business innovation is “the creation and implementation of novel ideas, processes, products, or business models that lead to measurable improvements in organizational performance, competitiveness, and value creation” (Hossain, 2023). In an era characterized by digital disruption, global uncertainty, and evolving consumer expectations, innovation has become very strategic for organizations that want to adapt and thrive. It is not confined to technological invention but encompasses a broader spectrum of organizational transformation—ranging from product design and service delivery to supply chain reconfiguration and customer engagement (OECD, 2023). From a strategic perspective, innovation enables businesses to respond to market demands, capture emerging opportunities, and gain competitive advantage. Organizations that embrace innovation are more likely to outperform peers in terms of growth, profitability, and resilience (Lindgren & Taran, 2022). The digital revolution has further expanded the scope of innovation, enabling firms to leverage data, AI, cloud computing, and the Internet of Things (IoT) to rethink value creation and operational models (Dwivedi et al., 2023).

Innovation is also increasingly collaborative, with firms engaging in open innovation ecosystems that

involve partnerships with startups, universities, and technology providers (Chesbrough, 2022). As such, business innovation is not only a function of internal capability but also of external knowledge integration and organizational agility. In this context, emerging technologies like GenAI offer new pathways for ideation, experimentation, and scalable transformation across industries. Understanding the nature and classification of innovation is essential for analyzing how GenAI can be integrated into business strategies. The following section outlines the major types of business innovation that organizations pursue.

### **Types of Business Innovation**

There are basically four primary types or measures of innovation: product, process, marketing and organizational innovations (Gault, 2018; OECD, 2018). Beyond product innovation, GenAI can enable multiple forms of other innovation in process, marketing, organization, radical and incremental innovation (Mariani & Dwivedi, 2024). Product innovation involves the development of new or significantly improved goods or services. This includes enhancements in performance, functionality, or user experience that offer added value to customers (Lindgren & Taran, 2022). In the context of GenAI, product innovation could manifest in AI-enhanced applications, intelligent customer interfaces, or personalized recommendation systems. Process innovation focuses on improving production or delivery methods. It includes automation, optimization, or reengineering of workflows that increase efficiency and reduce costs (Hossain, 2023). GenAI supports process innovation through capabilities like automated content generation, predictive analytics, and intelligent document processing.

Marketing innovation pertains to new approaches in product promotion, distribution, and pricing strategies. It often involves the use of digital tools and platforms to reach customers in more effective and personalized ways (OECD, 2023). AI-generated marketing content, personalized messaging, and A/B testing optimization are examples of marketing innovation driven by generative technologies. Organizational Innovation refers to changes in organizational structure, management practices, or workplace culture that improve business performance. This may include adopting agile methods, remote work systems, or data-driven decision-making models (Chesbrough, 2022). GenAI tools can support these shifts by enabling collaborative ideation, streamlining internal communications, and enhancing strategic planning. In addition, contemporary scholars have identified other classifications or taxonomies such as; product/process, radical/incremental, architectural/component, open /closed, competence-

destroying/competence-enhancing, sustaining/disruptive etc. (Christensen, 2020; Mariani & Dwivedi, 2024), with each reflecting a different dimension of organizational change. incremental versus radical innovation, and innovation). Incremental innovation involves small, continuous improvements, while radical innovations introduce entirely new paradigms. Disruptive innovation often enabled by emerging technologies, redefines market standards and can displace established players. These diverse types of innovation collectively contribute to a firm's strategic agility and long-term sustainability. As the next section will demonstrate, GenAI has the potentials to support each of these innovation types, offering businesses both operational enhancements and new value propositions.

### **Drivers of Business Innovation in the Digital Era**

The digital era has ushered in a new wave of innovation characterized by speed, connectivity, and continuous disruption. Several interrelated factors act as key drivers of innovation, influencing how businesses adapt and evolve in response to the changing landscape. These drivers include; technological advancement, market dynamics, globalization, customer expectations, and competitive pressure. First, technological advancement is the primary enabler of modern innovation. Emerging technologies such as AI, blockchain, IoT, cloud computing, and 5G, have created new opportunities for automation, personalization, and real-time decision-making (Dwivedi et al., 2023). GenAI, in particular, exemplifies how frontier technologies can redefine the boundaries of ideation and production by enabling machines to perform creative and strategic tasks previously limited to humans (Bommasani et al., 2022). Second, market dynamics and increasing customer expectations compel businesses to innovate continuously. Consumers demand faster services, customized products, and seamless digital experiences, pushing organizations to reimagine business models and service delivery mechanisms (Hossain, 2023). In this context, digital platforms and data analytics have empowered firms to anticipate trends, personalize offerings, and co-create value with users. Third, globalization has intensified competition and expanded markets, encouraging firms to innovate to remain relevant and expand their global footprint. Through global value chains and cross-border collaborations, businesses are exposed to new ideas, business practices, and consumer needs (OECD, 2023). Fourth, sustainability pressures and regulatory environments also drive innovation, particularly in areas such as green technologies, circular economy models, and ethical business practices (Schroeder et al., 2022). These challenges require organizations to innovate responsibly while meeting compliance standards and



social expectations. Finally, the rise of open innovation ecosystems has democratized access to knowledge and talent. Companies now collaborate with startups, research institutions, and even customers to accelerate innovation cycles and leverage external expertise (Chesbrough, 2022). These drivers collectively shape the innovation agenda in the digital era, making adaptability, agility, and technology integration essential components of modern business strategies.

### **Strategic Importance of Innovation in Business**

Innovation is not merely a technical or operational function; it is a strategic imperative that directly influences long-term organizational survival, competitiveness, and growth. In an era of digital transformation, innovation determines a firm's power to seize emerging opportunities, respond to disruptive changes, and deliver differentiated value to customers (Lindgren & Taran, 2022). Firms that prioritize innovation tend to outperform peers in profitability, customer satisfaction, and market share (Kaplan et al., 2023). From a strategic standpoint, innovation enables businesses to reposition themselves within their industries or even create entirely new markets. The concept of disruptive innovation proposed by Christensen (2020), illustrates how innovative firms can unseat incumbents by introducing solutions that are simpler, cheaper, or better aligned with emerging customer needs. GenAI technologies—by reducing costs, enhancing productivity, and enabling mass personalization—have the potential to serve as disruptive tools in various sectors.

Furthermore, innovation strengthens organizational resilience, allowing firms to anticipate and navigate economic shocks, technological changes, and evolving consumer behaviors. Companies that foster a culture of innovation are more agile, more adaptive to change, and better equipped to pivot in response to external challenges (Teece et al., 2023). Another critical aspect is strategic differentiation. Through innovation, businesses can develop unique value propositions that distinguish them from competitors. Whether through novel product features, superior customer experiences, or optimized business models, innovation becomes a key source of sustainable competitive advantage (Porter & Heppelmann, 2022). In the context of the digital economy, innovation helps to attract investment, enhance brand reputation, and improve internal efficiencies. With technologies like GenAI, organizations are positioned to scale innovation efforts more effectively and strategically align technological capabilities with business goals. Thus, innovation is no longer optional—it is central to strategic planning, value creation, and organizational success in the 21st century.

### **The Intersection of GenAI and Business Innovation**

The convergence of GenAI and business innovation represents a transformative development in the digital economy. As organizations seek to redefine their strategies, operational models, and customer engagement approaches, GenAI emerges as a powerful enabler of innovation across products, processes, marketing, and organizational structures. By leveraging its capabilities to generate new content, simulate complex scenarios, and support decision-making, GenAI facilitates not only incremental improvements but also radical innovation that can disrupt entire industries (Bommasani et al., 2022., Kaplan et al., 2023).

A prominent intersection of GenAI and business innovation is in product and service development. Generative models such as GPT-4 and DALL·E allow businesses to prototype digital products, design user interfaces, and personalize service offerings at scale. For instance, AI-generated design mockups and personalized chat interfaces reduce development time and improve customer satisfaction by aligning products more closely with individual preferences (OpenAI, 2023). In industries such as retail and fashion, GenAI tools are being used to forecast trends, generate new design ideas, and automate catalog creation, significantly accelerating product innovation cycles (Zhou et al., 2024).

GenAI also transforms business processes, enabling automation of tasks that traditionally require human intelligence. In content-driven industries such as media, education, and marketing, AI tools are used to generate articles, promotional materials, and instructional contents with minimal human intervention (Luccioni & Viviano, 2023). In operations and finance, GenAI supports the creation of reports, budget forecasts, and scenario analyses, contributing to more agile and data-informed decision-making (Dwivedi et al., 2023). These capabilities allow firms to re-engineer workflows for higher efficiency, consistency, and responsiveness. In the domain of marketing innovation, GenAI has revolutionized how companies communicate with consumers. AI models can craft tailored advertisements, write persuasive copy, generate product descriptions, and even create virtual brand influencers. The personalization enabled by GenAI enhances consumer engagement and drives conversion rates, as content can be rapidly adjusted for different audience segments and marketing channels (Kaplan et al., 2023). Tools such as Jasper AI and Copy.ai illustrate how businesses are automating creative writing tasks while maintaining brand voice and coherence.

GenAI also enables organizational innovation in its support for new forms of collaboration and knowledge management. AI-powered platforms assist in internal communication, automate routine documentation,

support brainstorming processes, and help organizations to operate more flexibly, and creatively. For example, AI-generated meeting summaries, ideation tools, and planning assistants improve team productivity and innovation culture (Tegmark et al., 2023). Furthermore, organizations use GenAI to support training and upskilling by delivering customized learning content to employees, based on individual's performance profiles and learning needs (Liu & Sundararajan, 2024).

Across sectors, GenAI is able to analyze vast data, learn from context, generate original outputs, and functions as a strategic co-creator, not just a productivity tool. This role is especially critical in environments where innovation requires continuous ideation, iteration, and adaptation. For instance, in the pharmaceutical industry, GenAI accelerates drug discovery by simulating molecular structures and identifying promising candidates for development, thereby shortening time-to-market and reducing research costs (Zhang et al., 2023).

Despite its benefits, the adoption of GenAI for business innovation is not without challenges. Issues related to data security, model bias, and ethical use raise concerns about reliability, accountability, and trust. Therefore, integrating GenAI into innovation strategies requires not only technical readiness but also governance frameworks that align with regulatory standards and organizational values (Luccioni & Viviano, 2023). GenAI represents a paradigm shift in how businesses conceive, develop, and deliver innovation. Its capacity to generate new ideas, automate knowledge work, and enhance customer-centricity aligns directly with the strategic objectives of modern enterprises. As businesses continue to explore and refine their digital transformation agendas, GenAI will increasingly serve as a cornerstone of innovation across industries and functions.

### **Strategic Advantages of GenAI in Business Innovation**

GenAI offers a range of strategic advantages that are reshaping how businesses create value, operate, and compete in a rapidly evolving digital economy. Its capabilities extend beyond task automation to creative generation, personalization, and strategic decision-making, enabling organizations to pursue innovation with greater speed, accuracy, and scale (Kaplan et al., 2023). This section examines the key advantages GenAI brings to business operations, including enhanced speed and efficiency, scalability, cost savings, and data-driven decision-making. Harjika and Kamuinho (2025) found that GAI can be "leveraged to drive innovation and gain a competitive advantage by personalizing customer experiences and optimizing resource allocation in the Canadian industrial sectors of

healthcare and telecommunications]". According to Aagaard and Tucci (2024, pp297), "AI and Industry 4.0 have engendered a strategic shift towards data-driven, customer-centric, and flexible business practices by giving way a new era of competitive advantage and innovation. They are reshaping business model innovation, and redefining the market landscapes (Pearlson et al., 2024) by introducing advanced strategies such as "Bolt-On" AI systems that enhance existing CRM or ERP frameworks, and enabling real-time data analysis and insights". "GenAI has created new content frontiers for business development, facilitated hyper-personalization and instant customization and alignment of products and services to customers'. Moreover, Industry 4.0 introduces servitization and autonomous IoT services, such as Kespri drones for insurance inspections, transforming traditional business models into agile, responsive, and technologically integrated frameworks"

One significant strategic benefit of GenAI is the ability to increase speed and efficiency in executing both routine and complex tasks. Generative models, such as GPT-4 or Google Gemini, can rapidly draft documents, generate marketing content, design product prototypes, or simulate customer interactions-tasks that traditionally take significant time and human resources (Dwivedi et al., 2023). In content-heavy industries such as media, publishing, and advertising, this translates to faster campaign deployment, quicker revisions, and shorter production cycles (Luccioni & Viviano, 2023). Additionally, internal processes such as report generation, proposal writing, and email responses are now being accelerated through AI-driven tools, reducing workflow bottlenecks.

Another major advantage is scalability. GenAI enables businesses to scale content creation, customer service, and product innovation across geographies and demographics without proportional increases in human labor. For instance, AI chatbots can manage thousands of customer queries in multiple languages simultaneously, ensuring consistent service delivery around the clock (Zhou et al., 2024). Similarly, generative design tools allow businesses to launch multiple variations of product designs or advertisements tailored for different markets, enhancing global responsiveness and local relevance. Cost reduction is a compelling motivator for many enterprises adopting GenAI. By automating creative and analytical tasks, companies can reduce reliance on specialized labor, cut development costs, and streamline operations. For example, GenAI in the fashion and e-commerce sectors has lowered design and merchandising expenses by producing virtual samples and automated catalog entries (Zhang et al., 2023). In customer support, AI reduces the cost per

interaction while improving speed and quality, enabling organizations to reinvest resources into higher-value activities.

Furthermore, GenAI enhances data-driven decision-making by generating actionable insights from unstructured and structured data sources. AI models can synthesize large datasets, identify patterns, and propose solutions in natural language, enabling faster and more informed decisions across departments. In finance, for example, GenAI assists in predictive modeling, fraud detection, and automated financial reporting, helping decision-makers respond to market shifts in real-time (Liu & Sundararajan, 2024). In product development, AI-generated simulations and customer feedback analysis provide early validation, reducing risks associated with innovation. Collectively, these strategic advantages position GenAI not merely as a technological upgrade, but also as a transformative business capability. It allows firms to experiment with new ideas, iterate faster, reduce time-to-market, and maintain a competitive edge in fast-changing environments. As businesses seek to navigate increasing complexity and customer expectations, those that successfully integrate GenAI into their innovation strategy are likely to realize significant strategic gains.

### **Ethical, Legal, and Managerial Considerations of Gen AI**

As GenAI becomes increasingly embedded in business operations, it raises a series of ethical, legal, and managerial concerns that must be tackled to ensure responsible and sustainable adoption. While Gen AI models offer transformative potentials, the misuse and unethical use of GenAI introduces complex risks concerning data privacy, algorithmic bias, intellectual property rights, workforce implications, and regulatory compliance. Organizations must adopt a holistic approach that integrates ethical governance and risk management frameworks alongside technical implementation (Floridi & Chiriatti, 2020).

One of the foremost concerns is data privacy and security. GenAI models trained on vast datasets often scraped from public and proprietary sources. When these datasets include sensitive or personally identifiable information (PII), there is the risk of inadvertently generating outputs that compromise privacy or expose confidential data (Luccioni et al., 2023). Furthermore, adversarial actors may exploit generative models to produce misleading or harmful content, thereby creating new cybersecurity challenges. Business leaders must ensure that the data used for training and fine-tuning generative models comply with data protection regulations such as the General Data Protection Regulation (GDPR) and similar local frameworks (Crawford et al., 2023).

Another major ethical concern is algorithmic bias and fairness. Generative models often reflect the biases present in their training data, leading to outputs that can reinforce stereotypes, marginalize certain groups, or produce discriminatory results. For instance, AI-generated content may exhibit gender, racial, or cultural bias, which can damage brand reputation and alienate customers (Binns, 2023). Organizations must invest in model auditing, diverse training datasets, and inclusive design practices to promote fairness and accountability to mitigate these risks.

Intellectual property (IP) and content ownership represent additional legal grey areas. Since GenAI can produce text, images, music, and other creative works, questions arise regarding the originality, authorship, and ownership of such outputs. Legal systems in many jurisdictions are still evolving in response to these challenges. For example, there is debate whether AI-generated content can be copyrighted, and if so, whether the creator of the model, the user, or the AI system itself, holds the rights (Gervais, 2023). Therefore, businesses using GenAI must exercise caution to avoid plagiarism or unauthorized replication of existing works, and they should develop clear internal policies regarding content usage and attribution. Workforce displacement and role transformation also warrant close managerial attention. While GenAI can augment productivity, it also threatens to disrupt traditional job roles, particularly in creative industries, customer service, and administrative functions. Automation of these tasks may lead to job losses or significant shifts in required skill sets (Kaplan et al., 2023). Responsible implementation should prioritize human-AI collaboration, reskilling programs, and the creation of new roles that leverage AI capabilities rather than replace human workers.

Finally, the regulatory landscape for GenAI is still emerging but evolving rapidly. Governments and international regulatory bodies are drafting policies to address transparency, accountability, explainability, and safety in AI development and deployment. For instance, the European Union (EU) AI Acts seeks to classify and regulate AI systems based on risk categories, while other jurisdictions are exploring AI ethics boards, compliance audits, and labeling systems (Butcher & Beridze, 2023). Businesses must stay abreast of regulatory developments and incorporate legal risk assessments into their AI strategy. While GenAI holds vast potentials for innovation, businesses must navigate a complex web of ethical, legal, and managerial issues. Proactive governance, transparency, and ethical foresight are essential to ensure that GenAI contributes positively to business and society.

### Challenges and Limitations of GenAIs

Despite its transformative potentials, the integration of GenAI in business innovation is faced with many challenges and limitations that organizations must carefully consider. These challenges span across technical, organizational, and socio-ethical dimensions, and significantly impact the reliability, sustainability, and inclusiveness of AI-driven innovation strategies. One of the most pressing concerns is the quality and reliability of GenAI outputs. While models such as GPT-4 and DALL·E can produce remarkably human-like content, they are not immune to generating inaccurate, misleading, or nonsensical results (OpenAI, 2023). This phenomenon commonly referred to as AI hallucination can undermine businesses' credibility, especially when used in customer-facing roles or content creation. Therefore, ensuring the factual consistency and context-appropriateness of generative outputs remains a significant technical hurdle (Ji et al., 2023). For instance, Deep fakes have numerous such as causing job losses, destroying reputation, image and trust of persons, professionals and corporations, biasing and manipulation of public opinion and market competition, and creation of false information (Marcus, 2022). The inundation of website like Stark overflow with incorrect codes can serious harm developers' productivity, professionalism and reputation. These risks call for more digital responsibility to address them (Lobschat et al., 2021).

Another major limitation lies in the dependence on vast and high-quality datasets. Generative models require extensive training on diverse and representative datasets to perform effectively. However, acquiring, cleaning, and labeling such datasets could be expensive and time-consuming. Additionally, models trained on biased or skewed data are likely to reproduce those biases, raising concerns about fairness and inclusivity (Bommasani et al., 2021). This reliance on data quality and quantity also makes smaller firms and startups less competitive in leveraging GenAI due to limited access to such resources. The challenge of human-AI collaboration also presents significant complexity. While GenAI can enhance productivity, it cannot fully replace human intuition, context-awareness, and ethical judgment. Overreliance on automated tools may erode human creativity and critical thinking, especially in fields like journalism, law, and education (Shin et al., 2023). Organizations must therefore strike a balance by positioning GenAI as a collaborative assistant rather than a substitute for human expertise.

Technical barriers related to infrastructure, energy consumption, and model interpretability also limit the widespread adoption of GenAI. Training and deploying large-scale generative models is computationally intensive, requiring advanced hardware (e.g., GPUs, TPUs), cloud infrastructure, and high energy usage.

These requirements not only increase operational costs but also raise concerns about environmental sustainability (Patterson et al., 2022). Moreover, many generative models function as "black boxes," as the decision-making processes are not easily explainable, which pose risks in regulated industries such as finance and healthcare. Lastly, skills and talent shortages in AI development, deployment, and governance continue to hinder organizational readiness to adopting GenAI. There is a growing demand for professionals with expertise in data science, machine learning, and AI ethics, but the talent pool remains limited. Without the right human capital, organizations may struggle to effectively implement, supervise, and scale GenAI initiatives (McKinsey & Company, 2023).

Ferraro et al., (2024) have argued that Gen AI presents six paradoxes which include "(1) connected yet isolated, (2) lower cost yet higher prices (3) higher quality yet less empathy, (4).satisfied yet dissatisfied, (5).personalized yet introversive, and (6) powerful yet vulnerable". Also, GenAI may be biased against certain groups and individuals based on trained data and if there is no ethical control (Akter et al., 2021), thereby benefitting some stakeholders at the expense of others. To avoid this occurrence, firms should set up an AI ethics board to evaluate the trained data and algorithms (Fosso Wamba & Queiroz, 2021). While GenAI holds promise for driving business innovation, its adoption is not without significant hurdles. Addressing these limitations requires a proactive and multidisciplinary approach-combining technological refinement, ethical oversight, capacity building, and strategic foresight to ensure that the integration of GenAI into business processes is both effective and responsible.

### The Future of GenAI in Business Innovation

The future of GenAI in business innovation is marked by increasing sophistication, broader accessibility, and deeper integration into core business strategies. As the technology continues to evolve, it is expected to play a transformative role not only in operational efficiency but also in reshaping business models, consumer engagement, and value creation. One significant trend shaping the future is the rise of multimodal GenAI systems, which combine text, images, audio, and video to produce rich, context-aware content. Tools like OpenAI's GPT-4o and Google's Gemini illustrate how AI is moving beyond single modalities to support more immersive and interactive applications (OpenAI, 2024; Google DeepMind, 2024). These developments are particularly relevant for sectors like marketing, entertainment, healthcare, and education, where complex content and human-like interactions are crucial for engagement and personalization.

Another key development is the emergence of autonomous agents powered by GenAI. These agents

are capable of performing complex tasks independently—such as executing customer support, managing inventories, or conducting financial analysis—while continuously learning from data and adapting to changing business environments (Park et al., 2023). Such capabilities could fundamentally shift how businesses operate, moving from human-centric task execution to AI-led decision-making and service delivery. From a strategic standpoint, GenAI is expected to drive business model innovation, particularly in areas such as on-demand content creation, AI-as-a-Service (AIaaS), and hyper-personalized product design. For example, businesses can offer custom-generated digital goods (like personalized music or art), AI-enhanced consulting services, or automated R&D prototyping. This evolution positions GenAI as a catalyst for new forms of entrepreneurship and enterprise, especially among digitally native firms and startups (Bughin et al., 2023). To fully leverage these opportunities, however, businesses must adopt a proactive and ethical approach to implementation. Key recommendations include: (1) Investing in AI literacy and talent development: Organizations must build internal capabilities through upskilling and reskilling programs, ensuring teams understand the strengths and limitations of GenAI tools (World Economic Forum, 2023), (2) Aligning AI strategies with business goals: Companies should integrate GenAI initiatives within their broader innovation agendas, with clear KPIs and governance structures to track impact and mitigate risks, and (3) Fostering ethical and inclusive AI ecosystems: Transparency, accountability, and fairness must be embedded in AI development pipelines, especially in light of concerns around misinformation, bias, and content ownership (Floridi, 2023).

Governments and regulatory bodies should play a more active role to shape the trajectory of GenAI adoption through legislation, standards, and international cooperation. The EU AI Act, and similar frameworks in the United States and Asia reflect growing efforts to ensure that AI is used responsibly, and in line with societal values (European Commission, 2024). In essence, the future of GenAI in business innovation will be shaped not only by technological progress but also by how businesses, regulators, and societies collectively navigate the associated opportunities and challenges. Companies and organizations that can responsibly harness GenAI stand to gain competitive advantages, while contributing to a more innovative, equitable, and sustainable business landscapes.

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## Conclusion

GenAI models have emerged as transformative tools in the landscape of business innovation. Unlike traditional AI systems, these models do not simply analyze or automate, they create, enabling businesses to explore new frontiers in product development, service delivery, marketing, customer engagement, and decision-making. As explored throughout this paper, the convergence of GenAI and business innovation is fostering not only efficiency and scalability but also novel business models and markets. The conceptual overview of GenAI provided insights into its foundational technologies, including large language models, neural networks, and diffusion systems, which collectively underpin tools like ChatGPT, Gemini, and DALL-E. These technologies empower organizations to automate creative processes and enhance customer experiences in ways that were previously unattainable. Meanwhile, the understanding of business innovation highlighted the diverse types—incremental, disruptive, open, and radical, and showed how digital transformation is now deeply tied to AI capabilities.

At the intersection of the two concepts, GenAI is being deployed across industries to generate business value: from AI-powered design in fashion and product manufacturing to intelligent chatbots in customer support, and from automated medical reporting in healthcare to personalized recommendation engines in retail. These applications illustrate the broad and accelerating influence of GenAI on modern enterprises. Nevertheless, this innovation does not come without challenges. The ethical, legal, and managerial concerns such as; data privacy, algorithmic bias, intellectual property rights, and workforce disruption must be proactively managed. Moreover, businesses must overcome technical limitations and maintain human oversight to ensure quality, fairness, and accountability in AI-generated outputs. Looking to the future, trends such as multimodal AI, autonomous agents, and real-time AI integration will likely redefine how businesses operate, create value, and compete. Firms must invest in AI literacy, align AI initiatives with strategic goals, and embrace ethical principles and regulatory compliance to remain relevant, and responsible in this evolving environment. In sum, GenAI is not merely a technological upgrade; it is a fundamental shift in how innovation is conceived and executed in the business world. Organizations which can successfully integrate these technologies while maintaining ethical and strategic clarity will be best positioned to thrive in the era of AI-driven innovation.

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## Conflict Management Styles and School Performance: Evidence from Secondary School Teachers in South-South Nigeria

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### Abstract

*The study empirically examined the relationship between conflict management styles and performance of secondary schools in South-South geographical zone of Nigeria from the viewpoint of teachers. The conflict management styles examined include avoiding, accommodating, competing, compromising and collaborating conflict management styles. Cross-sectional survey research design was adopted for this study. The population of the study comprises all the teachers in secondary schools in the South-South Geographical Zone of Nigeria. 384 teachers were randomly selected in the different states and copies of questionnaire administered to them. Out of the 385 copies of questionnaire administered to teachers of the selected secondary schools, 345 copies were completed and used for data analyses. The data were analysed using descriptive and inferential statistics using Statistical Package for the Social Sciences (SPSS version 24) software. All hypotheses were tested at 5% level of significance. The finding revealed that avoiding, accommodating, compromising and collaborating conflict management styles significantly impact secondary school performance in South-South Nigeria. However, there is no significant relationship between competing conflict management style and performance of secondary schools in South-South Nigeria. The study recommends that schools should invest in teacher training and professional development programmes to provide them with effective conflict management skills. This could include conflict resolution workshops, seminars, and courses that emphasize teamwork and constructive communication.*

**Keywords:** Conflict management, Performance, Secondary school, South-South zone, Teachers.

### Introduction

Secondary schools play a fundamental role in shaping individuals by providing formal education, imparting essential knowledge and skills, and fostering socio-economic advancement (Abulencia, 2021; Okeke-James, Igboke, Anyanwu, & Obineme, 2020). However, concerns about the declining quality of secondary education in Nigeria have been widely documented (Okeke, Adepoju, & Adetarami, 2024). Reports indicate that many secondary school graduates struggle with basic literacy skills, particularly in writing and effective communication, which significantly affects their academic and professional prospects.

Several factors have been identified as contributors to the deterioration of secondary school education in Nigeria. Among these are inadequate physical infrastructure, insufficient learning resources, low teacher motivation, insecurity, and a generally hostile school environment (Obeze, 2023). Another critical but often overlooked factor is ineffective conflict management within schools, particularly among administrators. Poorly managed conflicts disrupt the

learning environment, lower teacher morale, and hinder student academic progress (Obizue, Chukwudebelu, & Onuoha, 2020). These conflicts may arise among students, between students and teachers, among teachers, between teachers and school administrators, and even between educators and parents. If left unresolved, they create a negative school climate that discourages teacher engagement and contributes to declining student enrollment, as parents may perceive such schools as unstable or unfit for learning (Maxwell & Deo, 2024; Dike, 2020; Abdulazeez, 2022).

While numerous studies have assessed the relationship between conflict management and organisational performance, most have focused on industries such as oil and gas industry Achi & Ezekiel-Hart, (2024), ICT industry Rudziah (2024), manufacturing (Oluwasegun and Adebayo (2014), and healthcare Kuazaqui, (2023); Binyanya, (2021), banking industry Agajelu (2024). The educational sector, particularly secondary schools in Nigeria, has received comparatively little attention in this regard. Given the persistent challenges facing the sector, an



in-depth investigation into the role of conflict management in school performance is essential. This study aims to assess the impact of different conflict management styles, avoiding, accommodating, competing, compromising, and collaborating on the performance of secondary schools in Nigeria's South-South geopolitical zone. By understanding the effectiveness of these strategies, the study seeks to provide empirical evidence on how conflict resolution can enhance the overall quality of education and foster a more conducive learning environment.

## LITERATURE REVIEW

### Nature and Types of Conflict in Secondary Schools

Conflict is an inevitable feature of organisations, resulting from the clash of incompatible goals, interests or values between individuals or groups. It is a social process that arises due to the diversity of organisational members, who have distinct backgrounds, perspectives, and communication styles (Ikemefuna, Kibikiwa, & Zoakah, 2023). Consequently, conflicts are bound to occur within secondary schools and other organisations. To effectively address these conflicts, it becomes essential to comprehend their nature and underlying causes. This understanding helps in creating strategies and interventions that can promote positive resolution and foster a harmonious and productive organisational environment (Egerová & Rotenbornová, 2021).

School conflict can be depicted as a discord between individuals or groups within the school community, arising from differences in ideas, interests, principles, and values (Valente, Afonso, & Németh, 2022). Even though the parties involved may feel excluded, it is important to note that their interests may not actually be excluded (Omodan & Skosana, 2023; Parashar, & Sarma, 2020). The most common conflicts in schools tend to occur between students, as well as between students and teachers (Onyinyechi & Wichendu, 2021). These conflicts can be classified based on their causes and the parties involved. According to Valente (2022), conflicts among teachers typically stem from various factors such as inadequate communication, personal interests, past conflicts, power dynamics, or differences in political and ideological beliefs. Further research also suggests that the majority of conflicts arise from basic miscommunication, misunderstandings, unintended interpretations, inconsequential differences, ineffective decision-making, ambiguous roles and responsibilities, unrealistic expectations, varying standards, and changing economic circumstances (Omodan & Skosana, 2023; Jones, 2021; Adewuyi, Salami, & Dogara, 2021).

Onolemhemhen and Akpede (2022) have identified some noteworthy factors that contribute to conflict in the Nigerian secondary education system. Principals' administrative ineptitude, the theft and misuse of

school funds, staff and student indiscipline, personality issues, role conflicts, and the influence of youthful exuberance are a few of these. In addition, conflicts between students can arise from misunderstandings, physical altercations, group rivalries, instances of discrimination, and incidents of bullying. These factors contribute to the overall conflict landscape in Nigerian secondary schools. Disputes between parents, teachers, and administrators can arise from incidents involving students or conflicts between teachers. These conflicts can be triggered by issues such as the loss of educational materials, problems in the school cafeteria or similar areas, teacher shortages, inadequate pedagogical support from teachers, assessment criteria and decisions, as well as failure to fulfill administrative and bureaucratic requirements set by the management. (Oloore, 2023).

### Conflict Management Styles

Conflict management is the act of diagnosing and dealing with conflicts that occur within a company or between people or groups (Zakiah, 2023). It involves understanding the conflict, finding out the reasons behind it, and creating plans to resolve the issues and achieve a solution that benefits everyone involved. Reducing conflict's detrimental impacts is the aim of conflict management as well as to encourage positive results, such as better communication, increased teamwork, and stronger connections (Ronquillo, Ellis, & Toney-Butler, 2023).

**Avoiding conflict management style:** This is characterised by individuals or organisations choosing to ignore or avoid conflicts rather than addressing them directly (Hocker, Berry, & Wilmot, 2021). In other words, it involves evading confrontation, suppressing emotions, and maintaining a superficial harmony. This approach frequently results in withdrawal since the person utilizing it is unable to address both his or her own problems as well as the worries of the other party (Maiti & Choi, 2021). This approach is frequently taken when engaging the opposing side seems to have more negative consequences than beneficial effects (Filsecker et al., 2020). While avoiding conflicts may seem like a convenient approach in the short term, it can have detrimental effects on individuals and organisations in the long run (Adilo, 2019). One of the main drawbacks of this style is that it does not address the underlying issues causing the conflict. By avoiding conflicts, the root causes remain unresolved, leading to a build-up of tension and potential escalation of the conflict later on. This can result in increased animosity, decreased trust, and a toxic work or school environment (Ronquillo et al, 2023).

**Accommodating conflict management style:** This style has to do with a low assertiveness coupled with a higher degree of cooperativeness (Binyanya, 2021). The accommodating conflict management style is characterised by individuals or organisations giving precedence to the needs and concerns of others over

their own. It involves a willingness to collaborate, cooperate, and find common ground in order to maintain relationships and harmony (Hocker, Berry, & Wilmot, 2021). One of the main advantages of this style is that it promotes goodwill and fosters positive relationships (Anyakie, 2018). By accommodating the needs and concerns of others, individuals or organisations demonstrate empathy, understanding, and a willingness to compromise (Maore, Mmbwanga, & Were, 2021). This helps to build trust, strengthen relationships, and create an accommodating and harmonious environment. In the context of secondary schools, accommodating conflict management style can promote a positive school climate and culture, enhancing overall performance. While accommodating conflicts may seem like a selfless approach, it can have both positive and negative implications. When individuals consistently prioritize the needs of others over their own, their own concerns and interests may be neglected. This can result in feelings of frustration, resentment, and a lack of personal fulfilment.

**Collaborating conflict management style:** The style is characterised by employees or organisations working together to find mutually beneficial solutions to conflicts (Tabassum, 2020). It involves active participation, open communication, and a willingness to understand and integrate different perspectives. The collaborating style is often considered the most constructive and effective approach to conflict resolution (Yusuf, Musa, & Abubakar, 2024). One advantage of this style is that it encourages creativity and innovation (Hocker, et al, 2021). By synthesising diverse viewpoints and ideas, individuals can tap into a broader range of possibilities and develop more comprehensive solutions.

**Competing conflict management style:** The style is also known as the assertive or aggressive style, and it is considered a high concern for personal goals and a low concern for the goals and needs of others involved in the conflict (Maiti, & Choi, 2021). The style is often associated with a win-lose mentality, where one group seeks to dominate and attain their desired outcome at the expense of others. In the context of secondary schools, the competing style can be detrimental to the overall educational environment due to the fact that it can create power struggles among staff members, hinder cooperation between teachers and students, and impede the development of a positive and supportive learning environment. To effectively manage conflicts using the competing style, it is important to consider the long-term consequences and seek opportunities for compromise or collaboration whenever possible. It may also be helpful to engage in active listening, empathy, and assertive communication to ensure that all groups feel heard and understood (Yusuf et al, 2024).

**Compromising conflict management style:** This strategy is often used when confronting the opposition seems to have more unfavourable results than favourable ones (Parashar & Sarma, 2020; Onyinyechi, & Wichendu, 2021). This style involves seeking a solution that partly satisfies the needs and goals of all parties involved in the conflict. It requires a willingness to sacrifice some of one's own desires in order to reach a mutually acceptable agreement. The compromising style can be beneficial in situations where maintaining relationships and finding a middle ground are important. It allows for a fair distribution of resources, promotes cooperation, and helps to prevent the escalation of conflicts (Maiti & Choi, 2021), and it is particularly useful when time constraints or external pressures necessitate a quick resolution.

**Concept of School Performance**

Performance in these secondary schools context refers to the measurement and evaluation of how well these educational institutions are achieving their goals and objectives (Ahmed, & Tariq, 2020). It encompasses various aspects, including student enrolment, staff turnover, leadership effectiveness, school climate, and stakeholder satisfaction.

**School enrolment:** This refers to the total number of students registered in a secondary school. It is an important proxy for measuring the performance of secondary schools as it indicates the level of demand and popularity of the school among students and parents (Ihugba & Okoroafor, 2024). Conflict management styles can impact school enrolment by influencing the school's reputation and perceived quality of education. Schools that effectively manage conflicts, such as by promoting open communication and resolving issues promptly, are more likely to attract and retain students.

**Employee turnover:** This denotes the rate at which employees exit an organisation and are replaced by new hires (Chukwu, Uzochukwu, & Adanso, 2024). High turnover can be detrimental to a teacher's performance as it disrupts continuity, affects staff morale, and increases recruitment and training costs. Conflict management styles play a significant role in employee turnover because schools that adopt collaborative and cooperative conflict management styles, for example mediation and problem-solving, are more likely to create a positive work environment, reduce conflicts, and retain talented staff.

**Staff satisfaction:** This measures the level of contentment and fulfilment among the school's employees (Omoz-Oarhe, Yusuf, & Shuaibu, 2022). It is an essential proxy for school performance as satisfied staff members tend to be motivated, productive, and engaged in their work. Conflict management styles can impact staff satisfaction by promoting a wholesome and supportive work environment. Schools that encourage open communication, respect diverse perspectives, and provide opportunities for staff to resolve conflicts

constructively are more likely to have higher levels of staff satisfaction.

**Leadership effectiveness:** The concept refers to the ability of school managers to guide, inspire, and lead the school community towards achieving its goals (Opatunde, & Oredein, 2023). Effective leadership is vital for the overall performance of a secondary school. Conflict management styles influence leadership effectiveness by shaping the leader's approach to handling conflicts. Leaders who adopt a collaborative and inclusive conflict management style, such as involving stakeholders in decision-making and seeking win-win solutions, are more likely to gain trust, build resilient relationships, and effectively lead the school community.

**School climate/culture:** It refers to the overall atmosphere, values, and norms within an institution (Yusuf & Amzat, 2020). It encompasses factors such as the level of trust, communication, respect, and shared purpose among students, staff, and parents. A positive school climate/culture is associated with improved academic performance, student engagement, and overall well-being (Wuletu, Hussein, & Bareke, 2024). Conflict management styles significantly impact school climate/culture. Schools that prioritize constructive conflict resolution, promote empathy and understanding, and foster a sense of belonging are more likely to cultivate a positive and inclusive school climate/culture.

#### Theoretical Review

This study is built on the social exchange theory propounded by the sociologist George C. Homans in 1958. The theory is based on five assumptions. First, rationality, which implies that individuals are assumed to be rational in their behaviour and actions. Secondly, self-interest, which implies that people are inspired by self-interest and seek to boost their rewards while minimising their costs. Thirdly, interdependence, which implies that individuals rely on each other to achieve their goals. Fourthly, comparison level, which means that individuals have a comparison level, which is a standard against which they evaluate the outcomes of their relationships. This idea holds that people interact with others and form connections when they believe the advantages outweigh the disadvantages. In social relationships, the idea highlights the significance of reciprocity, trust, and mutual dependency.

Any conflict management styles that prioritize constructive and collaborative approaches, such as problem-solving or compromise, can contribute to positive social exchanges between stakeholders in secondary schools. When conflicts are managed effectively, it enhances trust, cooperation, and reciprocity among students, teachers, administrators, and parents. This positive social exchange can lead a sense of mutual support, ultimately enhancing schools' performance. On the other hand, conflict management styles that are destructive or avoidant,

such as competition or withdrawal, can lead to negative social exchanges and strained relationships among stakeholders. This can result in decreased trust, increased animosity, and a lack of cooperation, which can hinder organisational performance in secondary schools.

#### Methodology

The study utilised the cross-sectional survey research. This is because the data needed on variables were collected from the sampled respondents at a specific point in time using questionnaire. Cross-sectional investigations are relatively cheap and prone to minimal bias (Wang & Cheng, 2020). The time horizon for collecting data on the variables of interest from the sampled respondents ranged from July to September, 2024.

355 and 384 principals and teachers

The population of the study comprised all the 3087 secondary schools in the South-South Geographical Zone of Nigeria. The zone is made up of six states, namely, Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers states. The population is gotten from the Ministry of Basic and Secondary Education of the states that constitute the South-South zone. Out of the 739 copies of questionnaire administered to principals and teachers of the selected secondary schools, 665 copies were validly completed and utilised for data analyses.

The sampling method adopted for this study is a blend of simple random sampling and stratified sampling, involving the division of the population into homogeneous subgroups and random selection of samples from each stratum. Using both stratified and simple random sampling techniques jointly provides increased precision, enhanced representation, efficient resource allocation, flexibility in analysis, and increased generalizability. In this case, the strata were federal government colleges, state government secondary schools, and privately secondary schools. By ensuring representations, stratified sampling helps to capture the diversity and variations within the population. It assisted in obtaining a sample that accurately reflects the characteristics and the diversity of the population, hence enhancing the generalisability of the finding of the study.

The study employed structured survey questionnaire as data pooling instrument. The instrument items were drawn from extant studies. The questionnaire was partitioned into three sections. Section A amassed data on demographic variables, such as age, gender, education level, marital status, and years of experience. Section B gathered data about the different conflict management styles, namely avoiding, accommodating, competing, compromising, and collaborating. Section C obtained information on the dependent variables, namely School performance. A structured questionnaire developed by Rahim and Magner (1995) was adopted and used to collect information on the independent variables. The instrument comprises 28 items which is cast on a 5-

point Likert scale, varying from Strongly Agree (SA) to Strongly Disagree (SD), (a higher value represents greater use of a conflict style). A structured questionnaire created and validated in conjunction with the project supervisor and experts in the Department of Business Administration, was used to collect data about school performance, the dependent variable. The questionnaire contains 15 items cast on a 5-point Likert scale, varying from Strongly Agree (SA) to Strongly Disagree (SD).

Descriptive statistics was first completed for all the variables of interest. The descriptive analysis was used to determine the teachers and principals' perceptions on the variables of interest while the correlation analysis was used to detect if there is

**Table 1: Questionnaire distribution and retrieval**

| S/N          | State       | Questionnaire |            | Response Rate |
|--------------|-------------|---------------|------------|---------------|
|              |             | Administered  | Retrieval  |               |
| 1            | Akwa-Ibom   | 41            | 40         | 97.6          |
| 2            | Cross-River | 82            | 65         | 79.3          |
| 3            | Delta       | 81            | 74         | 91.4          |
| 4            | Edo         | 73            | 73         | 100.0         |
| 5            | Rivers      | 63            | 59         | 93.7          |
| 6            | Bayelsa     | 44            | 34         | 77.3          |
| <b>Total</b> |             | <b>384</b>    | <b>345</b> | <b>89.8</b>   |

Table 1 shows that 384 copies of the questionnaire were administered to teachers. However, 345 copies were validly filled them. The response rates for the different states are: Akwa-Ibom State (Teachers – 97.6%), Bayelsa State (Teachers – 77.3%), Cross-

auto-correlation among the variables. Multiple regression analysis and independent sample t-test were used to attest relationship among the research variables. All tests were achieved at a 5% level of significance using SPSS software.

## RESULTS AND DISCUSSION

### Description of respondents' demographic information

This section contains the summary of questionnaire administration and respondents' demographic information such as age, gender, marital status, educational qualification, and working experience . The results are presented in Table 1 below:

Rivers State (Teachers – 79.3%), Delta State (Teachers – 91.4%), Edo State (Teachers – 100%), and Rivers State (Teachers – 93.7%). The overall response rate for teachers is 89.8%.

**Table 2: Respondents' demographic information**

| Demographics              | Category         | Frequency | Percent |
|---------------------------|------------------|-----------|---------|
| Gender                    | Male             | 179       | 51.9    |
|                           | Female           | 166       | 48.1    |
|                           | Total            | 345       | 100.0   |
| Age                       | 35 & Below       | 104       | 30.1    |
|                           | 36 – 45          | 112       | 32.5    |
|                           | 46 – 55          | 111       | 32.2    |
|                           | Above 55         | 18        | 5.2     |
|                           | Total            | 345       | 100.0   |
| Educational Qualification | NCE & Equivalent | 70        | 20.3    |
|                           | First Degree     | 172       | 49.9    |
|                           | Postgraduate     | 103       | 29.9    |

| Demographics       | Category | Frequency | Percent |
|--------------------|----------|-----------|---------|
|                    | Total    | 345       | 100.0   |
| Working Experience | 1 – 10   | 104       | 30.1    |
|                    | 11 – 20  | 86        | 24.9    |
|                    | 21 – 30  | 109       | 31.6    |
|                    | Above 30 | 46        | 13.3    |
|                    | Total    | 345       | 100.0   |
| Marital Status     | Married  | 154       | 44.6    |
|                    | Single   | 155       | 44.9    |
|                    | Widow/er | 36        | 10.4    |
|                    | Total    | 345       | 100.0   |

Table 2 shows that 179 of the teachers are male which accounts for 51.9% while 166 (48.1%) of the teachers are female. This shows that more male teachers participated in completing the research instrument. Table 2 also shows that for respondents that are teachers, 104 (30.1%) of them are 35 years and below, 112 (32.5%) are between 36 and 45 years old, 111 (32.2%) are between 46 and 55 years old while 18 (5.2%) are above 55 years old. 70 (20.3%) respondents had NCE and its equivalent as their highest qualification. 172 (49.9%) of the respondents had first degree while 103 (29.9%) of the respondents had postgraduate qualifications. From Table 2, majority of the respondents have worked between twenty-one and thirty years which account for 31.6% of the total respondents, while 24.9% have worked for eleven to twenty years. Respondents who

have worked for between one and ten years account for 30.1%. Respondents who have worked for more than thirty years are 46 which amounts to 13.3% of the total respondents. Table 2 shows that 154 of the teachers are married which accounts for 44.6% while 155 (44.9%) of the teachers are single. Only 36 (10.4%) of the respondents are widows or widowers.

#### Model Estimation and Interpretation

Pearson's correlation coefficient and multivariate regression analyses were used to approximate the relationship between the variables of interests. These statistical tools are used to establish the relationship between the dependent and independent variables and test the stated hypotheses. The results are shown as follows:

**Table 3: Pearson's sorrelation coefficient**

| Variables | SSPERF | AVCM   | ACCM    | CMPT    | CMCM   | COLM |
|-----------|--------|--------|---------|---------|--------|------|
| SSPERF    | 1      |        |         |         |        |      |
| AVCM      | .434** | 1      |         |         |        |      |
| ACCM      | .332** | .575** | 1       |         |        |      |
| CMPT      | -.054  | -.072  | -.174** | 1       |        |      |
| CMCM      | .460** | .700** | .655**  | -.014   | 1      |      |
| COLM      | .512** | .702** | .677**  | -.192** | .731** | 1    |

Table 3 displays the Pearson's correlation coefficients for each pair of variables. The Pearson's correlation coefficient (r) should not be greater than 0.80; otherwise, it may be assumed that multi-collinearity exists for independent variables that have a correlation coefficient greater than 0.80 (Bryman & Cramer, 1997). Results in Table 3 showed that none of the variables are higher than 0.80, ruling out the possibility of multi-collinearity in the model.

Table 3 shows that secondary school performance (SSPERF) is positively and significantly related to AVCM [ $r = 0.434$ ,  $p < 0.05$ ], ACCM [ $r = 0.332$ ,  $p <$

$0.05$ ], CMCM [ $r = 0.460$ ,  $p < 0.05$ ], and COLM [ $r = 0.512$ ,  $p < 0.05$ ]. However, the results show that there negative and non-statistically significant relationship between secondary school performance (SSPERF) and CMPT [ $r = -0.054$ ,  $p > 0.05$ ].

**Table 4: Estimated model of the relationship between conflict management styles and secondary school performance**

| Independent Variables | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  | Hypothesis Testing            |
|-----------------------|-----------------------------|------------|---------------------------|--------|-------|-------------------------------|
|                       | B                           | Std. Error | Beta                      |        |       |                               |
| (Constant)            | 2.338                       | 0.161      | -                         | 14.568 | 0.000 |                               |
| AVCM                  | 0.153                       | 0.054      | 0.215                     | 2.820  | 0.005 | Reject H <sub>01</sub>        |
| ACCM                  | 0.167                       | 0.045      | 0.296                     | 3.677  | 0.000 | Reject H <sub>02</sub>        |
| CMPT                  | 0.002                       | 0.035      | 0.003                     | 0.069  | 0.945 | Do Not Reject H <sub>03</sub> |
| CMCM                  | 0.099                       | 0.046      | 0.158                     | 2.163  | 0.031 | Reject H <sub>04</sub>        |
| COLM                  | 0.293                       | 0.051      | 0.473                     | 5.790  | 0.000 | Reject H <sub>05</sub>        |

$R^2 = 0.310$ ; Adj  $R^2 = 0.299$ ; F-Statistic = 30.400; F-Statistic (Prob) = 0.000; Durbin-Watson = 1.736; Number of Observation = 345

Dependent Variable: School Performance (SSPERF)

Table 4 shows that secondary school performance (SSPERF) is positively and significantly related to AVCM [ $\beta = 0.153$ ,  $t = 2.820$ ,  $p = 0.005$ ], ACCM [ $\beta = 0.167$ ,  $t = 3.677$ ,  $p = 0.000$ ], CMCM [ $\beta = 0.099$ ,  $t = 2.163$ ,  $p = 0.031$ ], and COLM [ $\beta = 0.293$ ,  $t = 5.790$ ,  $p = 0.000$ ]. However, the results show that there is a positive but non-statistically significant relationship between secondary school performance (SSPERF) and CMPT [ $\beta = 0.002$ ,  $t = 0.069$ ,  $p = 0.945$ ]. The  $R^2$  of 0.310 indicates that the independent variables account for 31% of the variations in the dependent variable. The Adjusted  $R^2$  of 0.299 suggests that the independent variables jointly explained 29.9% of the variation in the dependent variable. The Durbin-Watson statistic of 1.736 exposes the absence of first order serial correlation. The F-statistic of 30.4 is significant at  $p = 0.000$  inferring that the overall regression model explains a considerable percentage of the variability in the dependent variable.

#### Discussion of Findings

Firstly, the study found that there is a positive and significant relationship between avoiding conflict management style and performance of schools (secondary) in South-South Nigeria. This finding disagrees with the outcome of the works of Adetunji and Adetunji (2018), Ekechukwu and Ifeanyichukwu

(2021), Kalkan et al (2020), Owan (2018) that showed avoidance conflict management style impact performance. This study reiterates that conflict avoidance in schools can have a negative impact on the overall effectiveness of educational institutions. When disagreements and concerns go unresolved, they tend to persist and fester, disrupting the peaceful learning environment that schools aim to create. Persistent avoidance of conflict can present itself in a variety of ways. It may result in a persistent culture of quiet and avoidance, in which people stop from discussing concerns openly.

Secondly, the study found that there is a significant relationship between accommodating conflict management style and performance of secondary schools in South-South Nigeria. Accommodating conflict management is a management approach that prioritizes relationship maintenance over dispute resolution (Yusuf,Musa, & Abubakar, 2024). This indicates that, in the context of secondary schools in Nigeria, accommodating style entails a proclivity to give in or compromise during confrontations in order to prevent hurting relationships and maintain a pleasant school atmosphere. The discovery of a substantial association between accommodating conflict management style and school achievement shows that

this approach to conflict resolution has major consequences.

Moreover, the study revealed that there is no significant relationship between competing conflict management style and performance of secondary schools in South-South Nigeria. This research outcome is supported by the outcomes of Brandebo (2020), Marshall, Roache and Moody-Marshall, (2020) that found that a substantial dependence on competing conflict management styles in a school setting can have far-reaching effects, particularly in terms of eroding relationships among members of the school community. As observed by Marshall et al. (2020), individual mistrust may arise as a result of the competitive nature of this strategy. In an environment where everyone is looking out for themselves, colleagues and students may become suspicious of one another's motivations thereby weakening the sense of belonging and shared purpose that should ideally define a school community. Furthermore, the study found that compromising conflict management style does significantly impact the performance of secondary schools in South-South Nigeria. The works of Omene, (2021), Soomro, Saraih and Ahmad (2023), Valente and Lourenço (2020) that found that compromise conflict management style that entails finding common ground and establishing agreements via mutual compromises plays a significant role in overall school achievement support the outcome of this study. The compromise strategy places an emphasis on finding common ground, which may lead to constructive problem-solving in schools. When disagreements are resolved by compromise, it is common for both sides to give up something in order to achieve an agreement.

Lastly, there is a significant relationship between collaborating conflict management style and performance of secondary schools in South-South Nigeria. This research outcome is supported by the outcomes of Chandolia and Anastasiou (2020), Ebeguki et al. (2019), Larasati and Raharja (2020) and John-Eke and Akintokunbo (2020) that found that collaboration encourages open conversation, trust, and a sense of togetherness among school stakeholders, including teachers, administrators, students, and parents, and promotes a healthy school culture. When school stakeholders resolve issues collectively, it develops a sense of togetherness and shared responsibility. Collaboration in conflict resolution has the potential to improve teacher-student relationships. When principals include teachers and students in

conflict resolution, trust and mutual respect are fostered (Yusuf, Musa, & Abubakar, 2024; Maxwell & Deo, 2024). Therefore, by incorporating all stakeholders in the conflict resolution process, secondary schools can have access to a greater range of ideas and perspectives that may result in further innovation and growth of teaching approaches, curriculum, and educational procedures as a whole.

## CONCLUSION AND RECOMMENDATIONS

Poor understanding of conflict management has had a negative impact on school administration and performance. Due to lack clear-cut strategies for dealing with conflicts, most school administrators relied on trial-and-error approach to resolve them. Conflicts among teachers, between teachers and principals, or even among students have had detrimental effects on the overall functioning and performance of secondary schools in Nigeria. In line with this, this study shed light on the complex link between conflict management styles used within educational institutions and their subsequent influence on school performance. The study investigated conflict management styles in secondary schools in the South-South geographical zone of Nigeria which is made up of six states, namely, Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers states. The study concludes that the implementation of appropriate conflict management strategies will remain pivotal in achieving excellence performance in secondary schools in South-South Nigeria.

Based on the findings of this study, the following recommendations are suggested:

- Schools should invest in teacher training and professional development programmes to provide them with effective conflict management skills. This could include conflict resolution workshops, seminars, and courses that emphasize teamwork and constructive communication.
- The non-significant relationship between competing conflict management style and performance of secondary schools in South-South Nigeria suggests that educators and administrators should take a more comprehensive approach to school development. Rather than concentrating on conflict resolution techniques, efforts should be widened to incorporate a broader range of aspects such as curriculum quality, teacher training, parent engagement, and student support networks to improve school performance.

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## Impact of Climate Change on Nigeria Banking Sector Performance

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### **Abstract**

*This study sought to investigate the impact of climate change factors, specifically temperature change, rainfall variability, extreme weather events, and environmental degradation, on the return on equity (ROE) of Nigerian banks. The study employed panel regression analysis on data gathered over a 10-year period, focusing on four key variables: temperature change (TEMP), rainfall variability (RAIN), extreme weather events (EWE), and environmental degradation (ENV). The results revealed significant effects of temperature change, extreme weather events, and environmental degradation on banks' ROE, with temperature change and environmental degradation showing a positive and significant relationship. Rainfall variability, however, did not significantly impact ROE. These findings underscore the critical role of climate change and environmental factors in shaping the financial performance of banks, particularly in economies like Nigeria, where such factors are becoming increasingly prevalent. The study also applied diagnostic tests, including unit root tests, variance inflation factor analysis, and heteroskedasticity tests, to ensure the robustness of the regression results. Based on the findings it was recommended that banks should integrate climate risk into their strategic planning and risk management frameworks to ensure sustainable growth and profitability. Banks should increase their focus on green financing and environmental sustainability initiatives, banks should invest in climate risk assessment tools and data analytics to better understand and manage the financial risks associated with climate change.*

**Key Words:** *Temperature Change, Rainfall Variability, Extreme Weather Events, Environmental Degradation, Banks Return on Equity,*

### **Introduction**

Climate change is a worldwide issue that significantly affects the environment, economies, and human societies at large (Agbloyor, 2021). It describes the gradual rise in global temperatures over time, primarily driven by human-induced actions such as the burning of fossil fuels, deforestation, and alterations in land usage (Agbloyor, 2021). The outcomes of climate change are severe and widespread, manifesting in rising sea levels, more frequent extreme weather events, droughts, heat waves, and reduced water availability. In Nigeria, the effects are also evident in the economic sector, especially in banking, where it is estimated that the country may have experienced up to 11% GDP loss

by 2020 due to climate-related challenges (CBN, 2019). The financial sector, particularly banks, faces rising threats linked to credit, market, and operational risks due to climate variability. Reports by the Nigerian Meteorological Agency (NIMET, 2020) show that the nation's temperature has increased by between 1 and 2 degrees Celsius over recent decades. This temperature rise contributes to frequent and intense climate events like flooding, drought, and extreme heat, which adversely affect agriculture, public infrastructure, and health outcomes (Adejuwon, 2022). Consequently, these environmental shifts are impacting banking operations by raising exposure to climate-related financial disruptions and operational costs.

Recognizing the growing threat, the Central Bank of Nigeria has introduced various measures to foster environmentally responsible banking and reduce the carbon emissions associated with financial sector operations (CBN, 2019).

Climate-related threats such as droughts, floods, and extreme heat events have the potential to damage physical infrastructure, interrupt supply networks, and hinder economic activities, thereby affecting the overall performance of the banking industry. In addition, climate change may trigger shifts in consumer behavior, lead to stricter regulatory expectations, and prompt technological innovations, all of which could influence banks' operational frameworks and their profitability (Deloitte, 2020). The Nigerian banking sector's performance is deeply interconnected with the broader economic environment, and as such, climate-induced disruptions can significantly affect the quality of banks' assets, their liquidity levels, and capital sufficiency (CBN, 2019). Also, climate change poses new challenges to risk management practices, compelling banks to respond to evolving threats including climate-related credit, market, and operational risks. Nigeria's banking industry is also exposed to direct physical climate risks, such as potential harm to banking infrastructure—like branches and ATMs—which may interrupt financial services and undermine public trust. Furthermore, climate change can hinder the sector's capacity to deliver financial services, particularly to at-risk groups such as low-income earners and small-scale farmers, who often bear the brunt of climate-related disruptions (IFAD, 2020).

The performance of Nigeria's banking sector serves as a crucial measure of the overall strength and resilience of the country's financial system, with far-reaching implications for national economic stability (CBN, 2020). Various stakeholders—including financial managers, regulators, and investors—pay close attention to banking performance, given its role in maintaining systemic financial health and influencing broader economic trends (CBN, 2020). For banks in Nigeria to remain viable in the long term, it is important to identify the key factors driving their performance and to implement strategies that enhance these determinants (Podder, 2022). Several elements

have contributed to shifts in banking performance in the country, ranging from macroeconomic dynamics and evolving regulatory frameworks to the influence of technological progress (Adelegan, 2019). To uphold efficiency and support financial system stability, the Central Bank of Nigeria has introduced a range of policies and supervisory measures aimed at ensuring sound banking practices (CBN, 2020). The significance of the banking sector's performance extends beyond institutional interests, given that banks play a fundamental role in promoting investment, facilitating transactions, and advancing economic development (Levine, 2020). However, climate change now presents a growing challenge to banking operations in Nigeria, as it raises exposure to credit, liquidity, and operational risks—factors that may undermine both profitability and systemic stability (CBN, 2019).

### **Objectives Of The Study**

The general objectives of this study are to examine the impact of climate change on Nigeria Banking sector performance. Specific objectives are as follow;

1. To investigate the effect of temperature change on banks return on equity in Nigeria.
2. To examine the impact of rainfall variability on bank return on equity in Nigeria.
3. To analyze the effect of frequency of extreme weather events on return on equity in Nigeria.
4. To examine the effect of Environmental Degradation on banks return on equity in Nigeria :

### **REVIEW OF RELATED LITERATURE**

#### **Concept of Climate Change**

Climate change is a complex and interdisciplinary phenomenon that has been thoroughly investigated by researchers from multiple academic fields. According to the Intergovernmental Panel on Climate Change (IPCC, 2023), climate change refers to a long-term and statistically significant shift in climatic patterns. Watson (2022) describes it as changes in the statistical characteristics of the climate system, such as alterations in averages, variability, and the occurrence of extreme weather events. Hulme (2019) views climate change as a concept that is shaped through social interpretation, influenced by cultural, political, and economic contexts. Jasanoff (2020) further asserts that climate change

emerges from the joint influence of natural systems and societal processes, emphasizing the interconnectedness of science, governance, and cultural perspectives. On the other hand, Mann (2023) focuses on the scientific basis of climate change, stressing the role of human activity and greenhouse gas emissions in accelerating global warming. Researchers from varying disciplines continue to explore the multidimensional nature of climate change and its implications.

Schneider and Oppenheimer (2023) have examined the environmental and biological dimensions of climate change, emphasizing its adverse effects on ecosystems and biodiversity. From an economic standpoint, Stern and Nordhaus (2023) have evaluated the financial implications of climate change, weighing the benefits and costs associated with both mitigation and adaptation efforts. Giddens (2019) addressed the sociocultural dynamics of climate change, analyzing how it both influences and is influenced by human societal structures. In the realm of global governance, Bodansky and Rajamani (2022) have focused on the international climate regime and its ability to respond effectively to the climate emergency. The banking industry, in particular, holds a pivotal role in combating climate change by mobilizing financial resources toward renewable energy initiatives, climate-resilient infrastructure, and sustainable agricultural practices. Furthermore, banks can strengthen their response to climate risks by embedding these risks into their risk management systems and offering transparent climate-related financial reporting to relevant stakeholders. Through such measures, banks can play a vital role in lessening the negative effects of climate change and in promoting a shift toward a low-carbon global economy..

The role of the banking sector in addressing climate change extends beyond offering capital for renewable energy and sustainable infrastructure projects. Banks are also well-positioned to influence the adoption of sustainable practices among their clients and broader stakeholder groups. Through advocacy and leadership, banks can contribute to advancing environmental sustainability and responsible development. For instance, they can engage in collective industry efforts focused on establishing principles and frameworks for sustainable finance or participate in policy discussions

to emphasize the importance of environmental stewardship and sustainable economic practices. Moreover, banks have the opportunity to collaborate with a diverse range of actors—including non-governmental organizations, academic institutions, and government bodies—to champion sustainability. Such partnerships may include financing environmentally responsible projects with NGOs, working with academic institutions to develop new sustainable technologies, or supporting governments in formulating and enforcing environmental policies and regulations that encourage sustainable growth (Steffen, 2020)

### **Temperature Change**

Temperature change refers to fluctuations in the Earth's average surface temperature over time. The Intergovernmental Panel on Climate Change (IPCC, 2019) describes it as a statistically meaningful shift in climate indicators across an extended timeframe. Hansen (2019) views it as the difference between present-day temperatures and a baseline average, typically measured over a specific historical period such as the last 100 years. According to Rohde (2020), temperature change can be quantified by the rate at which the global mean surface temperature evolves, often expressed in degrees Celsius per decade. Santer (2020) categorizes temperature changes into "external," which result from influences like solar variability or volcanic activity, and "internal," stemming from factors such as ocean circulation patterns or ice sheet behavior. Marvel (2020) further distinguishes between "fast" temperature shifts, which unfold over years or decades, and "slow" shifts, which occur over centuries or even millennia. These temperature variations carry significant consequences for ecosystems and human populations, with predictions indicating continued warming throughout the 21st century. This trend is expected to increase the frequency and severity of extreme weather events—such as heatwaves, droughts, and storms (Seneviratne, 2021)—and to contribute to rising rates of illness and death due to heat stress, respiratory diseases, and the broader spread of infectious vectors. These outcomes stress the urgency of addressing temperature change, with the banking sector playing a crucial role by financing renewable energy projects, supporting sustainable infrastructure,

and promoting climate-resilient agricultural initiatives (Clark, 2023).

The banking sector holds a vital position in addressing temperature change by channeling financial resources toward environmentally sustainable projects and encouraging responsible practices among its clientele. As noted by the United Nations Environment Programme Finance Initiative (UNEP FI, 2020), banks can contribute to the reduction of greenhouse gas emissions by funding renewable energy ventures, supporting improvements in energy efficiency, and promoting sustainable land use strategies. In addition, banks can influence client behavior by integrating environmental, social, and governance (ESG) criteria into their credit assessments and investment policies. These actions not only aid in mitigating the adverse effects of temperature change but also foster long-term sustainable economic development (Batten, 2018). Moreover, fluctuations in temperature have important consequences for the way banks manage risk. The occurrence of extreme heat and severe weather events can heighten the likelihood of loan defaults, lower the value of secured assets, and interfere with normal business functions (Nguyen, 2020). In response, financial institutions must embed climate-related risks into their overall risk management systems and design effective strategies to cope with them. These strategies may include diversifying lending activities, backing infrastructure projects that are resilient to climate stress, and encouraging sustainability-focused behavior among borrowers (Campiglio, 2018). Such measures can help banks limit their vulnerability to climate-induced risks while contributing to broader efforts aimed at achieving sustainable economic resilience.

### **Concept of Rainfall variability**

Rainfall variability refers to the irregularities in precipitation patterns across both time and geographic locations, encompassing shifts in the intensity, frequency, duration, and spatial distribution of rainfall events. The Intergovernmental Panel on Climate Change (IPCC, 2023) identifies rainfall variability as a fundamental element of climate change, given its wide-ranging effects on ecosystems, biodiversity, and human communities. Nicholson (2023) characterizes it as the

fluctuations in rainfall that occur from year to year and across decades, often influenced by atmospheric circulation, sea surface temperatures, and alterations in land use. In a similar vein, Dai (2023) defines it as the variation in rainfall patterns observed across multiple temporal scales, from intra-seasonal to inter-annual and decadal changes. These fluctuations in rainfall can severely impact agriculture, water resource planning, and human habitation by increasing the frequency and intensity of droughts, floods, and other extreme weather phenomena (Karl et al., 2020). Additionally, rainfall variability is increasingly attributed to global climate change, as many areas around the world are witnessing significant shifts in precipitation patterns due to the rise in global temperatures (Trenberth, 2021).

The origins and outcomes of rainfall variability are intricate and influenced by a diverse range of interacting factors. Trenberth (2021) explains that rainfall fluctuations are shaped by elements such as atmospheric circulation dynamics, variations in sea surface temperatures, and transformations in land usage. Similarly, Dai (2023) identifies major contributors to rainfall variability, including climate phenomena like the El Niño-Southern Oscillation (ENSO), the Pacific Decadal Oscillation (PDO), and the North Atlantic Oscillation (NAO). These shifts in rainfall patterns exert profound effects on both natural ecosystems and human populations, altering vegetation growth, reducing water accessibility, and diminishing agricultural yields. Moreover, rainfall variability has been associated with broader social and economic issues, including population displacement, conflict escalation, and uneven development outcomes (Barrios et al., 2010). The financial sector—particularly banks—plays a pivotal role in addressing these challenges by offering funding for infrastructure that is resilient to climatic shocks, promoting sustainable agricultural practices, and supporting disaster preparedness and risk reduction measures (Clark, 2023). Gaining a thorough understanding of rainfall variability and integrating that knowledge into financial planning and investment strategies is vital for fostering resilient and sustainable communities amidst ongoing climate change.

### Frequency of Extreme Weather Events

The frequency of extreme weather events refers to the rising occurrence of intense and uncommon climate phenomena such as heatwaves, droughts, floods, and storms—conditions that are increasingly intensified by ongoing climate change (IPCC, 2019). As noted by Smith (2020), this upward trend is projected to persist as global temperatures continue to rise, posing significant threats to both ecosystems and human populations. Rahmstorf and Coumou (2019) emphasize the strong correlation between climate change and the escalation of extreme weather patterns, predicting a continuation of this trend throughout the 21st century. Nevertheless, scholars like Sun et al. (2020) highlight the complexity of this relationship, pointing out that other contributing factors—including land-use transformations and expanding urbanization—also influence the frequency of such weather anomalies. Research conducted by Zhang and Chen (2022) further reveals that recurring extreme weather conditions have pronounced consequences on public health, such as increased instances of heat-related illnesses, respiratory complications, and the proliferation of disease-carrying vectors. Beyond health, these climate extremes carry substantial economic ramifications, such as infrastructure destruction, diminished labor productivity, and disruptions to agriculture and food supply chains (Easterling, 2020; Hsiang, 2022). Given these wide-ranging impacts, the banking sector has a pivotal responsibility in mitigating the effects of extreme weather by financing climate-resilient infrastructure, supporting sustainable farming systems, and investing in disaster risk reduction initiatives (Clark, 2023).

The involvement of the banking sector in responding to the growing incidence of extreme weather events goes beyond merely financing climate-resilient infrastructure and sustainable agricultural initiatives. Banks are strategically positioned to foster climate-resilient behaviors among their clients and associated stakeholders. One approach is by offering financial incentives, such as reduced interest rates on loans directed toward climate-resilient ventures, or by providing advisory services to support the adoption of environmentally sustainable practices. Moreover, banks can collaborate with external partners—including

governmental agencies, non-governmental organizations (NGOs), and research institutions—to further climate adaptation efforts and reduce disaster risks. These partnerships may take the form of co-developing public infrastructure projects with government bodies, financing resilience-focused programs in marginalized communities with NGOs, or supporting innovation through academic collaborations on climate adaptation technologies. Additionally, the rising frequency of extreme weather events carries important implications for the risk management strategies of banks.

### Environmental Degradation

Environmental degradation represents a deeply layered and multifaceted process, encompassing a wide range of ecological harms such as deforestation, habitat loss, water contamination, and soil erosion—most of which are driven by anthropogenic activities including industrial pollution, unsustainable land use, and the broader impacts of climate change. As emphasized by Rockström et al. (2009) and Steffen et al. (2020), such degradation not only undermines biodiversity and disrupts vital ecosystem functions, but also accelerates the pace of global climate instability. Beyond the ecological sphere, environmental degradation has profound economic implications. Stern (2021) highlights that the deterioration of natural systems leads to resource depletion, infrastructure vulnerabilities, and adverse health outcomes—all of which impose significant costs on national economies and public welfare. Kumar (2018) further asserts that this degradation is often exacerbated by systemic drivers such as widespread poverty, income inequality, and patterns of consumption that disregard environmental limits. Moreover, the social dimensions of environmental harm are equally pressing. As noted by Alier (2022), environmental degradation frequently contributes to population displacement, the erosion of cultural heritage, and the deepening of social disparities—particularly in vulnerable communities. Addressing such a complex challenge necessitates a multidimensional strategy that integrates environmental, social, and economic perspectives in line with the guidance provided by the Intergovernmental Panel on Climate Change (IPCC, 2019). Within this context, the

banking sector has an increasingly crucial role to play. Financial institutions can contribute to mitigating environmental degradation by channeling capital into sustainable infrastructure, renewable energy initiatives, and environmentally friendly technologies. As Clark (2023) suggests, banks should embed environmental considerations into their enterprise risk frameworks and enhance transparency through environmental-related financial disclosures. Moreover, banks can serve as catalysts for sustainable development by supporting projects that prioritize biodiversity preservation, sustainable agricultural practices, and eco-tourism ventures. In collaboration with governmental bodies and civil society stakeholders, banks are well-positioned to influence policy formation and regulatory development aimed at safeguarding environmental resources and promoting sustainability, as highlighted by the World Bank (2020).

## **Theoretical framework**

### **Stakeholder theory**

The stakeholder theory, developed by Freeman (1984), posits that organizations have a responsibility to various stakeholders, including shareholders, customers, employees, and the environment. In the context of climate change, banks have a responsibility to manage climate-related risks and opportunities, not only for their own financial sustainability but also for the benefit of their stakeholders (Amaeshi A, 2017). This means that banks must consider the impact of climate change on their customers, employees, and the environment, and develop strategies to mitigate these impacts (Porter & Kramer, 2006). For example, banks can provide financing for climate-resilient infrastructure, offer climate-related insurance products, and develop sustainable investment strategies (Clark, 2023). By doing so, banks can reduce the risks associated with climate change, while also creating opportunities for growth and development. Furthermore, the stakeholder theory suggests that banks have a moral obligation to act in the best interests of their stakeholders, including those who may be impacted by climate change (Donaldson & Preston, 1995). This means that banks must prioritize the needs of their stakeholders, including the environment, and

develop strategies that balance economic, social, and environmental considerations.

The stakeholder theory is particularly relevant to banks, which are highly vulnerable to climate-related risks (Akinlo, 2018). Nigeria is a country with a diverse geography and climate, and is highly dependent on agriculture, which is a sector that is highly vulnerable to climate change (Adejuwon, 2006). As a result, banks must develop strategies to manage climate-related risks, including credit risk, where climate-related events such as droughts, floods, and heatwaves may impact borrowers' ability to repay loans, leading to increased defaults and credit losses. Market risk as it's related to climate-related policies and technological changes may impact the value of banks' investments. The stakeholder theory suggests that banks have a responsibility to manage these risks, not only for their own financial sustainability but also for the benefit of their stakeholders (Amaeshi A, 2017). This means that banks must prioritize the needs of their stakeholders, including farmers, small business owners, and individuals, and develop strategies that balance economic, social, and environmental considerations.

The impact of climate change on banks' return on equity (ROE) can be explained through the lens of stakeholder theory. According to stakeholder theory, banks have a responsibility to manage climate-related risks and opportunities, not only for their own financial sustainability but also for the benefit of their stakeholders. Temperature change, rainfall variability, frequency of extreme weather events, environmental degradation, and drought frequency can all have significant impacts on banks' financial performance, including their ROE. For example, temperature change can lead to increased operating expenses, reduced revenue, and decreased asset values, all of which can negatively impact banks' ROE. Similarly, rainfall variability, frequency of extreme weather events, environmental degradation, and drought frequency can also have significant impacts on banks' financial performance, including their ROE. By prioritizing the needs of their stakeholders and developing strategies that balance economic, social, and environmental considerations, banks can mitigate the negative impacts



of climate change on their ROE and ensure long-term financial sustainability.

### **Risk Management Theory:**

The Risk Management Theory, which was first introduced by Knight (1921), emphasizes the importance of identifying, assessing, and prioritizing risks in business operations. In the context of climate change, this theory suggests that banks must adopt a proactive approach to managing climate-related risks as it's affect banks related risk such as credit risk, market risk, and operational risk (Kumar et al., 2016). By doing so, banks can minimize the potential negative impacts of climate change on their financial performance and ensure long-term sustainability (Campiglio, 2016). Furthermore, the Risk Management Theory highlights the need for banks to develop effective risk management strategies that take into account the interests of all stakeholders, including shareholders, customers, employees, and the environment (Carroll & Buchholtz, 2014).

In the Nigerian banking sector, the application of the Risk Management Theory is crucial for mitigating the impacts of climate change. Given the country's vulnerability to climate-related risks, banks in Nigeria must prioritize the development of effective risk management strategies that address the unique challenges posed by climate change (Akinlo, 2018). This may involve conducting regular climate-related risk assessments, developing climate-resilient financial products, and implementing sustainable banking practices (Ojo, 2019). By adopting a proactive and stakeholder-focused approach to risk management, banks in Nigeria can reduce their exposure to climate-related risks and contribute to the country's sustainable development (Amaeshi & Adi, 2017).

### **Empirical Review**

Akinlo (2018) carried out an empirical investigation into the connection between climate change and the financial outcomes of Nigerian banks. Utilizing panel data from 10 commercial banks covering the period 2005 to 2015, the study established that climate-induced hazards—particularly flooding and drought—exert a considerable influence on the liquidity and profitability levels of these institutions. The findings

indicated that such environmental risks contribute to reductions in key financial metrics such as Return on Equity (ROE) and Return on Assets (ROA), thereby threatening the broader financial health of the sector. Based on these outcomes, Akinlo emphasized the urgency for Nigerian banks to adopt robust climate risk management frameworks to cushion the impact of environmental disruptions on their operational performance.

Ojo (2019) explored the influence of climate variability on the financial performance of Nigeria's banking industry. This study focused specifically on the effects of shifts in temperature, irregular rainfall patterns, and the incidence of extreme weather conditions on banks' ROE. Drawing on time series data from 1990 to 2018, the research applied a Vector Autoregression (VAR) model to evaluate the dynamic interrelationships between climatic variables and financial performance. The analysis showed that rising temperatures and more frequent extreme weather episodes were associated with a significant decline in ROE. Interestingly, variations in rainfall had a marginally positive effect. The study concluded by advocating for the integration of adaptive risk management mechanisms within banks to address climate-related vulnerabilities and sustain long-term financial viability.

Oduntan, Salami, and Adeyemi (2020) conducted a comprehensive study on how climate change influences the financial resilience of banks operating in Nigeria. Drawing on data from 20 leading banks over a 15-year period (2005–2019), the study adopted an integrative methodological framework that combined panel regression, Vector Autoregression (VAR), and impulse response analysis. The primary aim was to explore the dynamic interplay between climate variables—such as changes in temperature and levels of precipitation—and key banking performance metrics, including Return on Equity (ROE), Return on Assets (ROA), and Non-Performing Loans (NPLs). The empirical results showed that fluctuations in temperature were linked to notable declines in ROE, while extreme rainfall conditions were found to be positively associated with an increase in NPLs. The study also revealed that the adverse financial effects of climate change were more

acute among banks with higher risk exposure, particularly those heavily involved in agricultural lending. Additionally, macroeconomic variables like inflation and foreign exchange instability were found to intensify the financial vulnerability of banks facing environmental stressors. These findings underscore the systemic nature of climate-related risks within the Nigerian banking sector. As a result, the authors recommended that banks prioritize the integration of climate risk considerations into their overall strategic planning. This includes improving climate-related disclosures, strengthening internal risk management systems, and making targeted investments in infrastructure and technology that support resilience against environmental threats.

Goldstein and colleagues (2020) investigated how climate change influences the financial outcomes of Japanese banks, focusing on 15 of the country's leading financial institutions over a 19-year period from 2000 to 2019. Utilizing panel regression techniques, the study assessed how shifts in climate-related indicators—specifically temperature and precipitation—affect core financial metrics such as Return on Equity (ROE), Return on Assets (ROA), and Non-Performing Loans (NPLs). The research uncovered that rising temperatures are linked to declining ROE and ROA, indicating a direct negative effect on profitability, while increased precipitation was associated with a rise in NPLs. These effects were most evident in banks with significant exposure to climate-sensitive sectors, suggesting that vulnerability to environmental factors is not evenly distributed across the banking industry. In response to these findings, the authors proposed several recommendations to strengthen climate resilience in the sector. These include formulating and implementing robust climate risk management frameworks, improving transparency through climate-focused disclosures, investing in infrastructure and technologies that can withstand environmental shocks, and strategically diversifying lending portfolios to reduce risk concentration.

## **RESEARCH METHODOLOGY**

### **Research Design**

This study adopts an ex-post facto research design. As noted by Asika (2017), this design is used when the researcher seeks to identify cause-and-effect relationships between variables without manipulating the independent variable. The rationale for using this design lies in the nature of the data—specifically historical time-series and panel data on climate change indicators and bank performance metrics, such as Return on Equity (ROE)—which cannot be controlled or altered by the researcher. Therefore, the ex-post facto design provides a suitable and objective framework for analyzing the causal relationship between climate-related risks and financial outcomes in the banking sector.

### **Method of Data Collection**

The study relies solely on secondary data obtained from reputable and verifiable sources. Financial performance data (ROE) were sourced from the annual financial statements of the selected banks, as well as from the Central Bank of Nigeria (CBN) annual reports and the Nigerian Stock Exchange (NSE). Climate-related data—including average temperature, rainfall volume, incidence of extreme weather events, drought frequency, and indicators of environmental degradation—were obtained from the Nigerian Meteorological Agency (NiMet), the World Bank Climate Data Portal, and the National Environmental Standards and Regulations Enforcement Agency (NESREA).

### **Method of Data Analysis**

To examine the relationship between climate change indicators and the return on equity of Nigerian banks, the study applies panel regression analysis. Both fixed effects and random effects models are estimated, and the Hausman specification test is used to determine the more appropriate model for the analysis. All statistical estimations and diagnostic tests are conducted using EViews statistical software. Prior to model estimation, diagnostic checks are performed to test for stationarity, multicollinearity, and heteroskedasticity in the data to ensure the robustness and validity of the regression outcomes.

### Model Specification

The general panel regression model for this study is specified as follows:

$$ROE = \beta_0 + \beta_1TEMP + \beta_2RAIN + \beta_3FWE + \beta_4ENV + \mu + \varepsilon$$

### Results and Discussion

Where:

ROE = Return on Equity of bank i at time t; TEMP =

Temperature change; RAIN = Rainfall variability;

EWE = Frequency of extreme weather events; ENV =

Environmental degradation index;  $\mu$  = Bank-specific

unobserved effect;  $\varepsilon$  = Stochastic error term

| Environmental Indicators | Environmental Degradation Rates | Pollution Levels  | Rainfall Variability           |
|--------------------------|---------------------------------|-------------------|--------------------------------|
| Year                     | Annual Change (%)               | Air Quality Index | Annual Change (%) <sup>9</sup> |
| 2009                     | 0.61                            | 67                | 2                              |
| 2010                     | 0.46                            | 83                | 5.2                            |
| 2011                     | 0.53                            | 47                | 59.6                           |
| 2012                     | 0.54                            | 46                | 11.6                           |
| 2013                     | 0.55                            | 65                | 14.8                           |
| 2014                     | 0.56                            | 44                | 18                             |
| 2015                     | 0.57                            | 32                | 21.2                           |
| 2016                     | 0.58                            | 70                | 24.4                           |
| 2017                     | 0.6                             | 75                | 27.6                           |
| 2018                     | 0.7                             | 80                | 66                             |
| 2019                     | 0.8                             | 85                | 62.8                           |
| 2020                     | 0.9                             | 90                | 72.4                           |
| 2021                     | 1.0                             | 93                | 75.6                           |
| 2022                     | 1.1                             | 96                | 91.6                           |
| 2023                     | 1.2                             | 98                | 85.3                           |

Source: Nigerian Meteorological Agency 2004-2023

### Descriptive Statistics

The descriptive statistics provide an overview of the central tendency, dispersion, and distribution of the variables. Table 4.2 presents the mean, median, standard deviation, minimum, and maximum values for each variable.

Table 4.2 Descriptive Statistic Analysis

|           | ROE       | TEMP     | RAIN     | EWE      | ENV      |
|-----------|-----------|----------|----------|----------|----------|
| Mean      | 0.064903  | 0.043952 | 0.014431 | 1.560304 | 0.137041 |
| Median    | 0.043126  | 0.022769 | 0.001526 | 0.090413 | 0.004291 |
| Maximum   | 3.237088  | 0.487146 | 1.968699 | 376.9860 | 21.80103 |
| Minimum   | -2.359907 | 0.000000 | 0.000000 | 0.003173 | 0.000000 |
| Std. Dev. | 0.303419  | 0.060109 | 0.121754 | 23.19431 | 1.357415 |
| Skewness  | 2.390875  | 2.862122 | 15.76020 | 16.15435 | 15.50915 |
| Kurtosis  | 63.39361  | 15.95867 | 253.3415 | 261.9767 | 247.6523 |

|                    |           |           |           |           |           |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| <b>Jarque-Bera</b> | 40372.78  | 2199.272  | 700308.2  | 749240.5  | 668985.9  |
| <b>Probability</b> | 0.000000  | 0.000000  | 0.000000  | 0.000000  | 0.000000  |
| <b>Observation</b> | <b>30</b> | <b>30</b> | <b>30</b> | <b>30</b> | <b>30</b> |

**Source: E-view7.0 (2025)**

Table 4.3 provides a summary of the descriptive statistics for the study variables, namely Return on Equity (ROE), Temperature Change (TEMP), Rainfall Variability (RAIN), Frequency of Extreme Weather Events (EWE), and Environmental Degradation (ENV). The average ROE stands at 0.0649, reflecting relatively modest profitability levels across the sampled banks. The standard deviation of 0.3034 indicates notable dispersion in performance. The positive skewness value of 2.3909 and a high kurtosis score of 63.3936 suggest the presence of significant outliers and a heavy-tailed distribution. These departures from normality are statistically confirmed by the Jarque-Bera test, which indicates a non-normal distribution at the 1% significance level. In the case of TEMP, the mean value is 0.04395, with relatively minimal variation (standard deviation = 0.0601). However, the distribution is markedly skewed to the right (2.8621) and leptokurtic (15.9587), indicating the occurrence of sporadic extreme temperature changes. Similarly, RAIN has a very low mean of 0.01443, but displays

extremely high skewness (15.7602) and kurtosis (253.3415), suggesting rare but intense fluctuations in rainfall.

The variable EWE records a mean of 1.5603, but is characterized by high volatility and extreme values, as shown by its skewness (16.1544) and kurtosis (261.9767). Environmental Degradation (ENV) follows a similar pattern, with a low average value (0.1370) accompanied by substantial dispersion and the presence of extreme outliers, indicated by a skewness of 15.5092 and kurtosis of 247.6523. For all the variables under study, the Jarque-Bera statistics are statistically significant ( $p < 0.01$ ), reinforcing the conclusion that the distributions deviate significantly from normality.

#### **Stationarity Test**

Panel unit root tests (such as Levin-Lin-Chu and Im-Pesaran-Shin tests) were conducted to assess the stationarity of the variables. All variables were found to be stationary at level, suggesting that they are suitable for regression analysis without differencing.

**Table 4.3 Panel Unit Root test result**

| <b>Variable</b> | <b>LLC(Levin, Chut*)</b> | <b>Lin &amp; Shin W-stat</b> | <b>LPS(Im, Pesaran and Integration</b> | <b>Order of</b> | <b>Remarks</b>          |
|-----------------|--------------------------|------------------------------|----------------------------------------|-----------------|-------------------------|
|                 | <b>Statistics</b>        | <b>p-value</b>               | <b>Statistics</b>                      | <b>p-value</b>  |                         |
| <b>ROE</b>      | -6.12411                 | 0.0000                       | -2.48152                               | 0.0065          | I(0) Stationaryat level |
| <b>RAIN</b>     | -13.9791                 | 0.0000                       | -5.98683                               | 0.00000         | I(0) Stationaryat level |
| <b>EWE</b>      | -6.31463                 | 0.0079                       | -2.97528                               | 0.0015          | I(0) Stationaryat level |
| <b>ENV</b>      | -17.8788                 | 0.0000                       | -8.93847                               | 0.00000         | I(0) Stationaryat level |
| <b>ROE</b>      | -9.16390                 | 0.0000                       | -4.27973                               | 0.0000          | I(0) Stationaryat level |

**Source: E-view7.0(2025)**

The results of the panel unit root tests for the study variables—Temperature Change (TEMP), Rainfall Variability (RAIN), Frequency of Extreme Weather Events (EWE), Environmental Degradation (ENV), and Return on Equity (ROE)—are summarized in Table 4.2, using both the Levin, Lin & Chu (LLC) and Im, Pesaran and Shin (IPS) methodologies. For each variable, the test statistics were significantly negative, with p-values less than 0.01, indicating strong rejection of the null hypothesis of a unit root and confirming stationarity at level. Specifically, TEMP recorded LLC and IPS values of -6.12411 ( $p = 0.0000$ ) and -2.48152 ( $p = 0.0065$ ) respectively, while RAIN showed even stronger stationarity with LLC at -13.9791 ( $p = 0.0000$ ) and IPS at -5.98683 ( $p = 0.0000$ ). Similar patterns were observed for EWE, ENV, and ROE, all of which also had highly significant p-values across both tests. These outcomes confirm that all variables are integrated of

order zero,  $I(0)$ , and therefore meet the preconditions for inclusion in the panel regression model without requiring differencing or transformation.

#### **Multicollinearity Test**

It is important to check for multicollinearity among the independent variables. We will consider two recognized tests that can detect multicollinearity. These tests are: the tolerance test and the variance inflation factor test (VIF). According to Menard (2002), a tolerance value of less than 0.1 indicates a certain and serious collinearity problem. On the other hand, Myers (1990) indicated that VIF value of greater than 10 must call for a concern of multicollinearity. Table 4 shows the results. We could see that none of the tolerance level is below 0.1 and the VIF values are well below 10. Therefore, multicollinearity is not a problem or concern for this study

|             | <b>VIF</b>  | <b>1/VIF</b> |
|-------------|-------------|--------------|
| <b>RAIN</b> | <b>2.02</b> | <b>0.495</b> |
| <b>EWE</b>  | <b>3.06</b> | <b>0.326</b> |
| <b>ENV</b>  | <b>3.13</b> | <b>0.319</b> |
| <b>TEMP</b> | <b>1.01</b> | <b>0.991</b> |

The Variance Inflation Factor (VIF) results indicate that multicollinearity is not a concern among the independent variables, as all VIF values are below the commonly accepted threshold of 10. Specifically, RAIN, EWE, and ENV have VIF values of 2.02, 3.06, and 3.13 respectively, while TEMP has the lowest VIF at 1.01, suggesting minimal correlation with the other variables. The corresponding 1/VIF values further support the absence of severe multicollinearity, confirming the reliability of the regression estimates.

### Heteroskedasticity Test

Heteroskedasticity occurs when the standard deviations of a predicted variable, monitored over different values of an independent variable, are non-constant (Adam, 2022). The heteroscedasticity test aims to determine whether the data is homogeneous or not, in other words, **Table 4.4. Heteroskedasticity Test: Breusch-Pagan-Godfrey**

the data do not have any heteroscedasticity problems (Almeyda, & Darmansya, 2019). If heteroskedasticity exists, it implies that the population used in the regression contains unequal variance, and the analysis results may be invalid. The presence of heteroscedasticity tends to produce p-

|                     |           |                    |        |
|---------------------|-----------|--------------------|--------|
| F-statistic.        | 0.453354. | Prob.F(2,7).       | 0.6529 |
| Obs*R-squared.      | 1.146758. | Prob.Chi-Square(2) | 0.5636 |
| Scaled explained SS | 0.453594  | Prob.Chi-Square(2) | 0.7971 |

### SOURCE: E-view 7.0 (2025)

The Breusch-Pagan-Godfrey test results reveal no evidence of heteroskedasticity, as indicated by the F-statistic probability of 0.6529 and the Obs\*R-squared probability of 0.5636, both of which are greater than the 0.05 significance level. This suggests that the variance of the residuals is constant, confirming the homoskedasticity assumption of the regression model.

**Table 4.3: Panel Regression Results**

Dependent Variable: ROE

Method: LeastSquares

Date:25/04/25Time:19:17

Sample: 3

Included observations: 30

| Variable.         | Coefficient | Std.Error | t-Statistic.        | Prob.    |
|-------------------|-------------|-----------|---------------------|----------|
| C.                | 1295967     | 2589.538  | 5.004625.           | 0.0003   |
| TEMP              | 8262.137    | 2418.703  | 3.415937            | 0.0051   |
| RAIN              | 1170.912    | 942.1213  | 1.242846.           | 0.2377   |
| EWE               | 0.000380.   | 7.54E-05  | 5.035446            | 0.0003   |
| ENV               | 7819.632    | 1990.106  | 3.929254            | 0.0020   |
| R-squared         |             | 0.985920  | Mean dependent var  | 47078.70 |
| AdjustedR-squared |             | 0.981227  | S.D.dependentvar    | 15439.79 |
| S.E.of regression |             | 2115.459  | Akaikeinfocriterion | 18.39186 |
| Sum squared resid |             | 53701986  | Schwarzcriterion    | 18.63692 |
| Loglikelihood     |             | -151.3308 | Hannan-Quinnrcriter | 18.41622 |
| F-statistic       |             | 210.0756  | Durbin-Watsonstat   | 2.155694 |
| Prob(F-statistic) |             | 0.000000  |                     |          |

EstimationCommand:

```
=====
LSPATCBNDPRFSORSDBT
```

Estimation Equation:

```
=====
```

Source:Author'sComputationusing E-view7.0(2025)

The panel regression results show that temperature (TEMP), extreme weather events (EWE), and environmental degradation (ENV) have a statistically significant positive impact on return on equity (ROE) at the 5% level, as indicated by their low p-values (0.0051, 0.0003, and 0.0020 respectively). Rainfall (RAIN), however, is not statistically significant with a p-value of 0.2377. The model exhibits a very high explanatory power, with an R-squared of 0.9859 and an adjusted R-squared of 0.9812, suggesting that approximately 98% of the variation in ROE is explained by the independent variables. The F-statistic of 210.0756 with a probability of 0.0000 confirms the

overall significance of the model, while the Durbin-Watson statistic of 2.1557 suggests no major autocorrelation problem in the residuals.

**Test of Hypotheses**

**H01: Temperature change does not have any significant effect on banks' return on equity.**

From the regression result, the p-value for TEMP is 0.0051, which is less than 0.05. Therefore, the null hypothesis is rejected. Therefore temperature change has a significant effect on banks' return on equity.

**H02: Rainfall variability does not significantly affect Nigeria banks' return on equity.**

The p-value for RAIN is 0.2377, which is greater than 0.05. Thus, we fail to reject H02, meaning that rainfall variability does not have a significant effect on banks' return on equity.

**H03: Extreme weather events do not have any significant impact on Nigeria banks' return on equity.**

The p-value for EWE is 0.0003, which is less than 0.05. Therefore, we reject H03 and conclude that extreme weather events have a significant impact on banks' return on equity.

**H04: Environmental degradation does not have any significant effects on banks' return on equity in Nigeria.**

The p-value for ENV is 0.0020, which is less than 0.05. Hence, we reject H04 and conclude that environmental degradation significantly affects banks' return on equity.

**Discussion of Findings**

**Effect of temperature change on banks return on equity in Nigeria**

The findings of the study revealed that temperature change has a statistically significant effect on banks' return on equity (ROE) in Nigeria. Based on the regression output, the coefficient for temperature change was positive (8262.137) and the corresponding p-value (0.0051) was less than the 5% level of significance, thus leading to the rejection of the null hypothesis. This implies that variations in temperature exert a considerable influence on the profitability of banks, indicating that as temperature patterns shift, they create economic and operational pressures that affect the financial outcomes of banking institutions. This result corroborates the findings of Ghosh (2020) who reported that changes in climatic variables, particularly temperature, directly affect loan performance and operational risk profiles of financial institutions. Similarly, Battiston and Monasterolo (2019) found that banks exposed to sectors vulnerable to physical climate risks, such as agriculture and real estate, face heightened volatility in their equity returns due to temperature shocks. In the Nigerian context, the significance of temperature change can be linked to its cascading effects on key economic sectors supported by banks, leading to higher default rates, reduced asset values, and increased credit risks, which ultimately erode return on equity. Thus, temperature change emerges as a critical environmental factor that financial institutions must increasingly incorporate into their risk management and strategic planning frameworks.

The study's findings are further supported by the work of Fiedler, Nolte, and Steudle (2021), who emphasized that temperature-induced shocks could significantly impair the performance of banks by increasing operational costs, destabilizing investment portfolios, and elevating the probability of systemic liquidity challenges. De Greiff and Munoz (2022) also highlighted that marginal fluctuations in temperature significantly distort financial performance metrics, especially in emerging economies where financial resilience mechanisms are relatively weak. In the Nigerian banking sector, the sensitivity of loan portfolios to weather-dependent industries such as agriculture, manufacturing, and energy amplifies the transmission of temperature shocks into reduced profitability. Furthermore, as banks increasingly engage in long-term financing and infrastructural development projects, the risks posed by climate variability become more entrenched in their balance sheets. Consequently, the study underscores the urgent need for Nigerian banks to adopt climate-responsive strategies, including stress testing for temperature-related risks and integrating environmental factors into credit appraisal processes, to safeguard their profitability and ensure long-term sustainability in the face of a changing climate.

**Impact of Rainfall Variability on Bank Return on Equity in Nigeria**

The results from the panel regression analysis indicated that rainfall variability does not exert a statistically significant effect on banks' return on equity (ROE) in Nigeria. Although the coefficient of rainfall variability was positive (1170.912), the p-value associated with the variable (0.2377) was greater than the conventional 5% significance level, thus leading to the acceptance of the null hypothesis. This suggests that, within the sampled period, fluctuations in rainfall levels did not produce material changes in the profitability performance of banks. One plausible explanation for this outcome lies in the structural diversification of Nigerian banks' loan portfolios across sectors less immediately sensitive to rainfall patterns, thereby diluting the potential transmission channels through which rainfall shocks could affect financial returns. In line with this finding, Akinsanmi and Akinbobola (2021) observed that in the broader African context, financial sector returns demonstrate relative insulation from singular climatic factors such as rainfall variability when economic exposure is spread across both rain-dependent and rain-independent industries.



Moreover, existing literature supports the idea that although rainfall variability introduces environmental uncertainty, its impact on banks' financial indicators is often indirect, mediated through lagged economic variables. For instance, Lawal, Izevbigie, and Oyeibanji (2019) emphasized that agricultural sector volatility arising from rainfall irregularities may affect rural credit markets but has minimal immediate effect on the profitability ratios of urban-centered commercial banks. Complementarily, the work of Okorie and Uchenna (2022) on climate change and Nigerian financial institutions indicated that rainfall changes primarily affect microfinance and agricultural banks more severely than large commercial banks, whose asset bases and income streams are more diversified and less directly tied to rainfall-dependent sectors. Therefore, in the Nigerian banking landscape, the resilience to rainfall variability could be attributed to the increasing sophistication of financial products and the sector's gradual shift towards digital and service-based transactions that are less vulnerable to climatic fluctuations.

In addition, it is crucial to consider that the intensity and immediacy of climate factors such as rainfall on financial outcomes are often context-specific, depending on the interplay between environmental exposure, institutional risk management capacity, and government policy responses. The findings of the current study resonate with the conclusions drawn by Bello and Sanusi (2023), who argued that in middle-income economies like Nigeria, environmental risks linked to rainfall tend to manifest through secondary macroeconomic variables, such as inflation and GDP growth, rather than through direct impacts on bank profitability. As a result, although rainfall variability is a significant climatic concern for broader economic stability, its isolated impact on return on equity within Nigeria's banking sector appears muted and statistically insignificant over the observed period. This underscores the importance of adopting multi-dimensional risk assessment frameworks that capture the complex, indirect pathways through which climate variability may eventually influence banking sector performance over a longer horizon.

#### **Effect of the Frequency of Extreme Weather Events on Return on Equity in Nigeria**

The findings from the regression analysis reveal that the frequency of extreme weather events (EWE) has a statistically significant and positive effect on the return on equity (ROE) of Nigerian banks, with a coefficient of 0.000380 and a highly significant p-value (0.0003).

This suggests that the more frequent the extreme weather events, the higher the profitability of banks, as reflected by their return on equity. Such a result may initially seem counterintuitive, as extreme weather events are typically associated with negative environmental and economic shocks. However, it is plausible that banks operating in regions prone to extreme weather may have adapted to these risks over time, developing more robust disaster response frameworks and diversifying their portfolios to minimize the impact of such events on their operations. For instance, banks may have adjusted their lending practices, focusing on more resilient sectors or offering products that mitigate financial risks posed by extreme weather. The findings of Aslam and Choi (2019) support this interpretation, as they observed that banks in disaster-prone areas often experience a boost in profitability due to the increased demand for credit facilities to support rebuilding and recovery efforts following extreme weather events.

Moreover, the positive relationship between extreme weather events and ROE can also be seen as a result of the increased awareness and investment in climate risk management by Nigerian banks. In recent years, many financial institutions in Nigeria have integrated climate-related risks into their risk management frameworks, resulting in enhanced preparedness to deal with the economic fallout from extreme weather. Banks have also capitalized on the rising demand for insurance products and investment opportunities related to climate resilience, thereby improving their profitability in the face of increasing weather events. This is consistent with the findings of Okereke and Adeyemi (2021), who reported that Nigerian banks with well-developed environmental risk management strategies were able to leverage opportunities created by climate adaptation projects, such as green financing and environmental insurance, to enhance their returns. Consequently, the relationship observed between extreme weather events and return on equity aligns with the broader trend of banks turning climate risks into business opportunities, thereby mitigating potential losses and improving their financial performance.

#### **Effect of Environmental Degradation on Banks' Return on Equity in Nigeria**

The analysis of environmental degradation (ENV) indicates a positive and significant effect on the return on equity (ROE) of Nigerian banks, with a coefficient of 7819.632 and a highly significant p-value of 0.0020. This suggests that as environmental degradation intensifies, the return on equity for banks also increases.

A possible explanation for this finding is that banks may benefit from increased demand for financing solutions related to environmental recovery and infrastructure improvement in areas facing environmental degradation. As regions experience the adverse effects of environmental degradation, there may be greater investments in environmental rehabilitation, green technology, and sustainability projects, leading to higher demand for loans and financial products. This trend aligns with the findings of Abiola and Mbah (2020), who highlighted that financial institutions in regions affected by environmental degradation often see higher loan demand as businesses and individuals seek financial support for mitigation and adaptation strategies.

Furthermore, the positive impact of environmental degradation on bank profitability could be attributed to the growing interest in sustainable finance and environmental projects within Nigeria. As environmental concerns escalate, there is a rising awareness among banks of the importance of integrating sustainability into their financial offerings. Nigerian banks have increasingly funded projects aimed at reducing the impacts of environmental degradation, such as renewable energy investments, pollution control projects, and climate adaptation efforts. This increased focus on sustainability has allowed banks to tap into new markets, leading to improved profitability and enhanced ROE. Similar findings were noted by Akinlo and Akinboboye (2019), who observed that banks investing in green and sustainable projects in Nigeria not only contributed to environmental improvement but also experienced improved financial performance due to growing demand for such initiatives. Therefore, the positive relationship between environmental degradation and ROE can be interpreted as an opportunity for Nigerian banks to align their financial strategies with the need for environmental remediation, thereby enhancing both their societal impact and profitability.

### Summary

This study sought to investigate the impact of climate change factors, specifically temperature change, rainfall variability, extreme weather events, and environmental degradation, on the return on equity (ROE) of Nigerian banks. The study employed panel regression analysis on data gathered over a 10-year period, focusing on four key variables: temperature change (TEMP), rainfall variability (RAIN), extreme weather events (EWE), and environmental degradation (ENV). The results revealed significant effects of

temperature change, extreme weather events, and environmental degradation on banks' ROE, with temperature change and environmental degradation showing a positive and significant relationship. Rainfall variability, however, did not significantly impact ROE. These findings underscore the critical role of climate change and environmental factors in shaping the financial performance of banks, particularly in economies like Nigeria, where such factors are becoming increasingly prevalent. The study also applied diagnostic tests, including unit root tests, variance inflation factor analysis, and heteroskedasticity tests, to ensure the robustness of the regression results.

The analysis found a positive and significant effect of temperature change on banks' return on equity. This suggests that higher temperatures correlate with better financial performance in the banking sector, possibly due to increased demand for financing related to climate adaptation and mitigation projects.

Rainfall variability was not found to significantly affect banks' ROE in Nigeria. While this might seem counterintuitive given the significant impact of rainfall on agriculture and the economy, it suggests that banks may have adopted risk management strategies that mitigate the financial risks associated with rainfall fluctuations.

Extreme weather events exhibited a strong positive effect on ROE, indicating that Nigerian banks may benefit from increased demand for financial products and services related to disaster recovery and adaptation projects. This highlights the growing need for financial products tailored to climate-related risks.

Environmental degradation was found to have a positive and significant effect on ROE. This result suggests that banks in Nigeria could capitalize on the growing demand for financing solutions to address environmental challenges, such as green projects, renewable energy initiatives, and environmental remediation efforts.

### Conclusion

The study concludes that climate change factors, including temperature change, extreme weather events, and environmental degradation, significantly influence the return on equity (ROE) of Nigerian banks. This underscores the need for banks to consider environmental factors in their risk management and investment strategies. The positive impact of temperature change and environmental degradation on ROE could indicate a growing market for financing

environmental sustainability initiatives. On the other hand, the insignificant effect of rainfall variability suggests that its impact on bank profitability may be mediated by other factors, such as effective risk management strategies.

### Recommendations

1. Nigerian banks should integrate climate risk into their strategic planning and risk management frameworks to ensure sustainable growth and profitability. This can be done by developing financial products and services tailored to climate change adaptation and mitigation projects.

2. Banks should increase their focus on green financing and environmental sustainability initiatives. This can include offering loans for renewable energy projects, funding for climate resilience, and promoting sustainable investments, which could not only benefit the environment but also improve the banks' financial performance.

3. Nigerian banks should invest in climate risk assessment tools and data analytics to better understand and manage the financial risks associated with climate change.

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## Green Knowledge Management Strategies and Employee's Green Performance of Selected Small and Medium Enterprises (SMEs) in Anambra State, Nigeria.

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### Abstract

*This study investigated the effect of green knowledge management strategies on employees' green performance of selected Small and Medium Enterprises (SMEs) in Anambra State, Nigeria. The study is grounded in the knowledge-based view theory, which emphasizes the generation of knowledge within the organization for gaining a competitive advantage. The research design method adopted was descriptive survey design. With a total population of 1,200 staff of 10 selected SMEs, the sample size of 291 was drawn applying the Krejcie and Morgan (1970) table of sample size determination. The research instrument applied was a structured questionnaire, and a simple random sampling technique was adopted in the administration of the questionnaire. The instrument's reliability was confirmed with a Cronbach Alpha ( $\alpha$ ) index. Data analysis was conducted using Pearson correlation and Ordinary Least Squares (OLS) multiple regression via SPSS version 22. Findings revealed strong, positive, and statistically significant relationships between all green knowledge management components and employees' green performance. Notably, green knowledge acquisition had the most substantial effect ( $\beta = 0.592$ ), followed by knowledge sharing ( $\beta = 0.226$ ) and knowledge creation ( $\beta = 0.138$ ). The study concludes that green knowledge management significantly enhances employees' green performance in SMEs and recommends policies that will encourage green knowledge management practices among SMEs in Anambra State.*

**Keywords:** Green Knowledge Management, Green Knowledge Creation, Green Knowledge Acquisition, Green Knowledge Sharing, Employee Green Performance. Small and Medium Enterprises (SMEs)

### Introduction

Recently, employee green performance has become a burning issue in environmental management and sustainable economic development (Hien, 2025). As the world struggles to combat the challenges posed by environmental degradation, organizations are desirous, including individuals making frantic efforts to improve their green knowledge and skills and to come up with innovative ideas to solve the myriads of environmental issues and implement eco-friendly initiatives for business continuity. This requires creativity and collaborative efforts, as technological development has evolved to aid or complement human efforts (De Barros et al., 2025).

Employee performance is a multifaceted concept that has no clear-cut definition (Ghalem et al., 2016). It refers to the effective and efficient use of experiences, knowledge, skills, and talents to carry out specified tasks and to achieve organizational objectives (Alghamdi, 2021). Performance is perceived in terms of commitment to achieving eco-friendly objectives and sustainable development (Gomes et al., 2024). An employee's performance cannot be evaluated unless there is a standard of measurement. This standard is usually set by the organization to enable it to appraise the workers. This becomes very important since employee performance to a great extent determines organizational performance (Yang & Li, 2023). Employee job performance is mainly measured by

quantity (amount of work) and quality (how well they do compared to peers), using self-reported performance data (Arulrajah et al., 2016). The quantity and quality of work done to preserve the environment for sustainable development is referred to as employees' green performance.

In today's fast-changing world, knowledge is the key driver of organizational operations, ensuring a firm's survival and profitability (Wyszkowska-Kuna, 2020) and promoting innovation, productivity, sustainability, and overall organizational success (Ngoc Huynh et al., 2024). To achieve success and guarantee sustainability, organizations are expected to focus on improving the performance of employees, as it determines the overall success of the organization (Alghamdi, 2021). This requires effective knowledge management practices such as knowledge creation, acquisition, and sharing. Green knowledge management (GKM) has become crucial for gaining a competitive edge, as it impacts employees' environmentally friendly performance (Khan et al., 2024). According to El-Kassar and Singh (2019), as referenced by Polas et al. (2021), the key knowledge management factors influencing SMEs' adoption of green innovations are knowledge acquisition, sharing, and responsiveness. Al-Faouri (2023) identified five dimensions of the green knowledge management process, which include knowledge acquisition, storage, dissemination, utilization, and creation. A situation whereby tacit knowledge, which is a personalized and undocumented knowledge (Gamble, 2020), is formalized, communicated, and made understandable through some form of documentation or explanation, creates knowledge (Corcione et al., 2024). To achieve organizational objectives, knowledge needs to be acquired by individuals and groups within the organization. Knowledge acquisition is the process of acquiring and disseminating information on environmentally sustainable methods, concepts, and technologies (Baquero, 2024). Its sources could be internal or external (Wyszkowska-Kuna, 2020). The knowledge acquired is expected to be disseminated among critical stakeholders in the organization for the implementation of environmental protection objectives. Sharing knowledge is all about putting into practice the knowledge about environmental protection (Widyanti et al., 2024). This knowledge must be nurtured, properly organized, and preserved for ease of retrieval. This, according to Abu Rumman and Hiasat (2023), is referred to as knowledge storage. According to Al-Faouri (2023), ecological information and technologies have to be utilized for the purpose of protecting the ecosystem.

Despite the role of SMEs in driving the economy (Gherghina et al., 2020), many now struggle to enshrine green practices into their operations, perhaps

due to a dearth of green knowledge management strategies. This makes it difficult for employees to practice eco-friendly behavior, thereby affecting organizational sustainability and competitiveness. Against this backdrop, this study examines the relationship between green knowledge management strategies and employees' green performance in selected SMEs in Anambra State, Nigeria.

## **REVIEW OF RELATED LITERATURE**

### **Theoretical Underpinning- Knowledge Based-View (KBV) Theory**

The theory of knowledge-based view (KBV) of the firm was rooted in the stakeholder theory, resource-based view (RBV) of the firm, and organizational theory (Parekh & Wright, 2024). Leveraging the RBV theory, KBV proposed that knowledge generated within the organization is a veritable asset that can be used as a source of competition within the industry (Khan et al., 2024) since knowledge, particularly tacit knowledge, can't be easily imitated or copied by the competitors (Gamble, 2020). Furthermore, knowledge resources in SMEs are built over the years, thereby enhancing their performances, sustainability, and maintenance of competitive advantage (Olubiya et al., 2024). The knowledge held in an organization is an important resource that influences organizational success—performance, competitive advantage, and sustainability (Igbakoyi et al., 2024). This presupposes a nexus between organizational capacity to retain competitive advantage and effective resource (knowledge) management. According to KBV, enterprises are structures that synthesize knowledge resources and coordinating mechanisms into profitable tasks of the firm's core abilities (Parekh & Wright, 2024). The deployment of information technologies and its linkage with knowledge management practices have been found to improve knowledge creation, acquisition, and sharing, thus improving their performances (Alemu, 2025).

### **Conceptual Review of Literature & Hypotheses Formulation**

#### **Green Knowledge Management**

An organization's capacity to learn, retain, and apply knowledge is crucial for its growth, innovation, and sustainability (Widyanti et al., 2024). In literature, organizations leverage Knowledge Management (KM) to enhance customers' satisfaction and gain a competitive advantage in the market (Khan et al., 2024). Knowledge management (KM) plays a vital role in enhancing organizational success (Al-Faouri, 2023). In this context, Green Knowledge Management (GKM) is the deliberate effort to tap into and utilize the valuable knowledge embedded within an organization's social framework, promoting eco-friendly practices and

sustainability (Sahoo et al., 2024). Moreover, the focus of GKM is to integrate environmental awareness into knowledge management practices, thereby promoting sustainability and green initiatives (Ghorbani, 2023). It is imperative to note that GKM goes beyond just environmental information, encompassing a wide range of strategies and practices that promote sustainable development across ecological, social, and economic dimensions (Yu et al., 2022). In the opinion of Iliescu (2024), GKM evolves from researchers' endeavors to expand the knowledge management discipline by incorporating environmental sustainability goals, thereby broadening its scope and impact. Meanwhile, GKM facilitates decision-making by providing useful environmental information (Al-Husain, 2025). Detailed information about the environment, such as pollution, waste, etc., and their impact on society tends to empower the management in decision-making. Knowledge management supports innovation, resulting in sustainable development (Qadeer & Rafi, 2024). The study of Abdelwahed et al. (2025) revealed that GKM constructs, including green knowledge acquisition, green knowledge dissemination, and green knowledge responsiveness, are positively and significantly correlated with green innovation. Furthermore, it was found that knowledge management influences green innovation and corporate sustainable development (Abbas & Sagsan, 2019). Effective knowledge management boosts green innovation, leading to sustainable performances (Cong, 2024). The study conducted by Weina and Yanling (2022) showed that knowledge management practices are closely linked to environmental sustainability, environmental awareness, and green technology adoption. This implies that knowledge management is crucial in supporting eco-friendly initiatives.

### **Employee Green Performance**

Employee performance has grown in importance in modern organizations, especially where knowledge-based work is key (Berisha et al., 2025). Performance is a multidimensional concept that is often used without a clear definition (Ghalem et al., 2016). It refers to achieving specific tasks like accuracy, completeness, cost, and speed (Soressa & Zewdie, 2021). Therefore, employee green performance measures the level of involvement and commitment of employees in achieving cleaner production and environmental protection within an organization (Arulrajah et al., 2016). According to Hoang et al. (2025), it is referred to as the extent to which employees achieve their assigned environmental task. The commitment of organizational members toward environmental protection and sustainability is referred to as green employee performance (Gomes et al., 2024). Encouraging green creativity is important in the

evaluation of employees' green performance and organizational competitiveness (Saleem et al., 2024). The factors identified as affecting employees' green performance include organizational citizenship behavior for the environment (OCBE), green performance appraisal, and green compensation and rewards (Ardiza et al., 2021). Other factors include green training and development (Olaiya & Olaosebikan, 2022) and knowledge sharing and green organizational commitment (Yang & Li, 2023). This suggests that employee performance measures the behaviors or actions relevant to the attainment of an organization's green initiatives. Doing what an employee is paid for in an organization at the right time suggests performance (Ranta & Ylinen, 2024).

### **Green Knowledge Creation and Employee Green Performance**

Knowledge has been recognized as an intangible asset that can be used as a source of competition in the market (Corcione et al., 2024; Ramírez et al., 2011). The success and/or the failure of any organization depends on the kind of knowledge created and shared within the organization (Abbas & Khan, 2023). Knowledge is a complex idea with different meanings (Agrifogli et al., 2021). Knowledge, or information that has been processed (Bratianu, 2015), can be classified into two types: explicit and tacit knowledge (Ibojo & Mobolade, 2023). Tacit knowledge is personal and held in individual minds, not documented or formalized (Gamble, 2020). It is the knowledge that exists but is not formalized or written down (Corcione et al., 2024). On the other hand, explicit knowledge is the type of knowledge that is codified and can be found in documents, manuals, or databases (Abbari et al., 2019). This kind of knowledge has been formalized, communicated, and made understandable through some form of documentation or explanation (Corcione et al., 2024). However, it is believed that the knowledge possessed by individuals in the organization, both explicit and tacit, serves as a source of creating knowledge if shared. Transforming an individual's tacit knowledge into explicit knowledge at a group or organizational level leads to knowledge creation. Hence, green knowledge creation involves coming up with a fresh idea, thought, or information on environmental protection (Cong, 2024). Developing new ideas, discovering trends that were originally unidentified, combining different fields, and creating new processes are all examples of knowledge creation (Olubiyi et al., 2024). According to Lyles (2014), cited in Nonaka et al. (2014), businesses can create knowledge internally through research and development or by coming up with novel approaches to problems. Three essential components of the knowledge management cycle are the generation of knowledge,



transmission, and application (Adewuyi, 2021). The empirical study carried out by Ngoc Huynh et al. (2024) revealed that green knowledge management has a positive and significant effect on green innovation. Green knowledge sharing improves organizational performance (Khan et al., 2023).

**H01:** There is no significant positive relationship between knowledge creation and employees' green performance.

### **Green Knowledge Acquisition and Employee Green Performance**

Knowledge acquisition is an important aspect of knowledge management (Brewster, Ciravegna & Wilks, 2001). This is because of its role in promoting innovation (Ngoc Thang & Anh Tuan, 2020) and green performance in the organization (Baquero, 2025). Information is a key; its proper management can enhance innovative ideas and a firm's sustainable competitive advantage (Nyuga & Tanova, 2024). SMEs require useful environmental information that aids strategic decision-making (Krakauer, 2016). These can be obtained from different sources: internal and external (Indris & Primiana, 2015). The capacity of a company to tap into different information sources to create green business insights that employees can use for strategic decision-making is referred to as green knowledge acquisition (Sahoo et al., 2022). It involves gaining and distributing knowledge focused on eco-friendly practices, principles, and technologies (Baquero, 2024). It is a process of obtaining knowledge from sources, organizing it, and disseminating it to a knowledge base and maybe into a system that uses it for reasoning (Aronson, 2003).

According to Gamble (2020), tacit knowledge helps organizations maintain a sustainable competitive edge since competitors can't easily duplicate it in their own context. Green knowledge acquisition has a positive impact on green knowledge management and technological innovation (Sahoo et al., 2022). There is a positive and significant effect of green acquisition on organizational performance (Ibojo & Mobolade, 2023). Acquiring technical knowledge from outside and gaining market knowledge both positively impact corporate green innovation (Guo, 2023). The study of Abu Rumman and Hiasat (2023) revealed that there is no positive significant influence of knowledge acquisition on green performance in private hospitals in Amman. Conversely, Ibojo and Mobolade (2023) posited that knowledge acquisition positively and

significantly influences the organizational performance of selected manufacturing firms in Oyo State, Nigeria. Knowledge management dimensions such as knowledge acquisition, dissemination, and application were found to positively influence sustainability development practices (Shahzad et al., 2021; Al-Faouri, 2023).

**H02:** There is no significant positive relationship between knowledge acquisition and employees' green performance.

### **63200Green Knowledge Sharing and Employees' Green Performance**

The goal of many businesses is the promotion of eco-friendly practices for organizational sustainability (Ansong et al., 2024). This requires dissemination of green knowledge. Green knowledge sharing is akin to knowledge application that enables employees to apply what they have been taught (Yu et al., 2022). In a green context, knowledge sharing means exchanging ideas, experiences, and best practices related to sustainability and protecting the environment among people in an organization (Ansong et al., 2024). Cross-sector partnerships and collaborative platforms play a big role in sharing knowledge, which is crucial for innovation in things like renewable energy and reducing waste (Saleem et al., 2024). Sharing knowledge entails individuals and groups exchanging knowledge and skills, which promotes a cooperative and learning-focused culture that is essential for creativity and problem-solving (Nazim & Mukherjee, 2016). Green knowledge sharing represents the extent to which eco-friendly information is being propagated (Khawaja & Janjua, 2025). The process of exchanging knowledge results in mutually dependent outcomes for both parties (Bratianu, 2015). By sharing knowledge about sustainable practices, organizations can innovate more efficiently, cutting down on time and resources needed for new green technologies or processes (Saleem et al., 2024). The result of the study carried out by Agrifogli et al. (2020) revealed that the implementation of green human resource management practices produces a positive effect on eco-friendly behavior and green performance with commitment mediating their relationships. Green performance is positively and significantly influenced by knowledge sharing with green creativity mediating (Saleem et al., 2024).

**H03:** There is no significant positive relationship between knowledge sharing and employees' green performance.

### Conceptual Framework of Variables

~~Conceptual Framework: Figure 1 shows the link between green knowledge management strategies and employees' green performance.~~

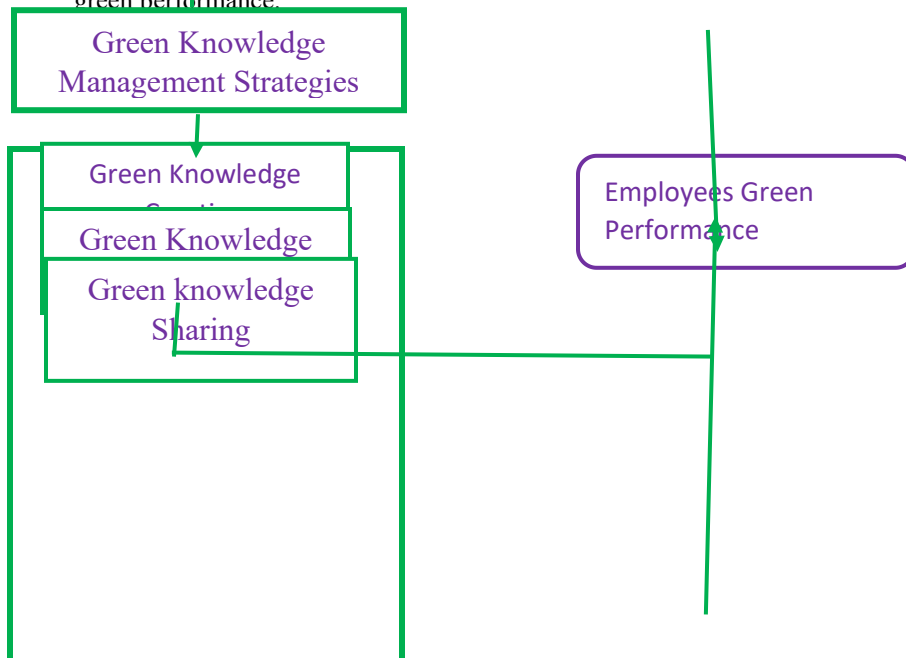


**Figure 1: Researcher's Model**

### MATERIALS AND METHODS

This study adopted the descriptive survey design method. As Siedlecki (2020) notes, descriptive surveys aim to accurately capture the characteristics of specific individuals, situations, or groups.

The population of this study is drawn from ten (10) selected SMEs in Anambra State. The total population of the employees in the firms was 1200. Applying the Krejcie and Morgan table (1970), 291 employees were selected from sampled SMEs in Anambra State. To collect primary data from the respondents, structured questionnaires made up of sections A and B were administered. Section A captured information relating to the respondent's biographical data, while Section B captured questions relating to the research hypotheses. Cronbach's alpha analysis was administered to obtain the reliability of the study instrument. Inferential analysis assists in understanding relationships between the study variables. In order to meet the research objectives of the study, all valid responses were assessed using Ordinary Least Square (OLS) multiple regression via the use of Statistical Package of Social Sciences (SPSS) version 22. OLS multiple regressions were used to predict whether there is any significant effect of the independent variables (knowledge creation,

knowledge acquisition, and knowledge sharing) on the dependent variable (employee's green performance).

### 3.1. Model Specification and Estimation Strategy

This study is concerned with Green Knowledge Management Strategies (GKMS) and Employees' Green Performance (EGP).

$$EGP = f(GKMS) \text{-----} (1)$$

Green knowledge management strategies (GKMS) include; Green Knowledge Creation (GKC), Green Knowledge Acquisition (GKA) and Green Knowledge Sharing (GKS).

$$EGP = f(GKC, GKA, GKS) \text{-----} (2)$$

The multiple variate equation model is specified as;

$$EGP = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_n X_n + \mu \text{-----} (3)$$

The regression form of the models is stated as;

$$EGP = \beta_0 + \beta_1 GKC + \beta_2 GKA + \beta_3 GKS + \mu \text{-----} (4)$$

### RESULT AND ANALYSIS

A total number of 291 questionnaires were distributed. Out of which, 230 was fully completed and retrieved accounting for 79% return rate.

**Table 1:**  
***Socio-Economic Attributes of Participating Employees***

| Participants' Bio-Data | Responses  | Rate (%)   |
|------------------------|------------|------------|
| <b>Sex:</b>            |            |            |
| Male:                  | 144        | 63         |
| Female:                | 86         | 37         |
| Total:                 | <b>230</b> | <b>100</b> |
| <b>Marital Status:</b> |            |            |
| Single:                | 115        | 50         |
| Married:               | 110        | 48         |
| Others:                | 5          | 2          |
| Total                  | <b>230</b> | <b>100</b> |
| <b>Qualifications:</b> |            |            |
| O'Level                | 34         | 15         |
| ND/Equivalent:         | 65         | 28         |
| B.Sc./Equivalent       | 120        | 52         |
| Post Graduate          | 11         | 5          |
| Total                  | <b>230</b> | <b>100</b> |

Source: Field Survey, 2025

The data in table 1 above revealed that the number of males was 144, which accounted for 63%, while the number of females was 86, representing 37%. Their marital status showed that 115, which is 50%, were single; 110 were married, which is 48%; and 5 were either divorced or widowed, which represents 2%. On

qualifications, 34 were O'Level certificate holders, which is 15%; 65 were ND or its equivalent holders, representing 28%; 120 held a B.Sc. degree, which is 52%; and the number of postgraduate certificates was 11, which represents 5%.

**Table 2: Multiple Regression Table**

| Coefficients <sup>a</sup> |                             |                             |            |                           |        |
|---------------------------|-----------------------------|-----------------------------|------------|---------------------------|--------|
| Model                     |                             | Unstandardized Coefficients |            | Standardized Coefficients | Sig.   |
|                           |                             | B                           | Std. Error | Beta                      |        |
| 1                         | (Constant)                  | .846                        | .125       |                           | 6.740  |
|                           | Green Knowledge Creation    | .138                        | .036       | .153                      | 3.820  |
|                           | Green Knowledge Acquisition | .592                        | .055       | .611                      | 10.719 |
|                           | Green Knowledge Sharing     | .226                        | .060       | .234                      | 3.736  |

a. Dependent Variable: Employee Green Performance

Table 2 shows the multiple regression analysis results of the coefficient for the components of the effect of Green Knowledge Management Strategies on Employees' Green Performance of Small and Medium Enterprises (SMEs) in Anambra State. The results showed that green knowledge creation ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ), green knowledge acquisition ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ), and green knowledge sharing ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) all have a positive and significant effect on employees' green performance of small and medium enterprises (SMEs) in Anambra State.

### Discussion of Findings

This study's objectives, as well as the hypotheses, have been tested using the appropriate statistical tools, and the findings are discussed below.

### Hypothesis One

In line with the study's objective, which is to investigate the relationship between green knowledge creation and employees' green performance, a null hypothesis stating that there is no significant positive relationship between green knowledge creation and employees' green performance of selected SMEs in Anambra State was formulated. However, the result of

the regression analysis ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that there exists a positive and significant relationship between green knowledge creation and employees' green performance of SMEs in Anambra State. This invalidates the null hypothesis, thereby accepting the alternative hypothesis. By implication, the more green knowledge is being created, the more employees' green performance is being enhanced by 1.4%, since the beta value is  $\beta = 0.138$ . The reverse is the case of not creating green knowledge in the system. Therefore, an increase in the creation of green knowledge correlates with improved employees' knowledge, capacity to make informed decisions, problem-solving, and most importantly, innovation. This study conforms to the empirical study of Ngoc Huynh et al. (2024), who posited that knowledge management has a positive significant effect on green innovation. By creating knowledge, SMEs are equipped with the capacity to gain competitive advantage, creative and innovative ideas, and adaptation to changing business environments.

### Hypothesis Two

The second objective examined the relationship between knowledge acquisition and employees' green performance, accompanied by the null hypothesis stating that there is no significant positive relationship between knowledge acquisition and employees' green performance of selected SMEs in Anambra State. However, the regression result ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ) revealed that there is a positive and significant relationship between green knowledge acquisition and employees' green performance of selected SMEs in Anambra State. This led to the decision of rejecting the null hypothesis and the acceptance of the alternative hypothesis, which states that there is a positive and significant relationship between green knowledge acquisition and employee green performance. This indicates that an increase in green knowledge acquisition in the organization correlates with improved employee green performance output, suggesting that extra green knowledge acquired by employees will lead to improvement in their green performance by 5.92% since the beta value is  $\beta = 0.592$ , and vice versa. This aligns with the study carried out by Ibojo and Mobolade (2023), who posited that knowledge acquisition positively and significantly influences the organizational performance of selected manufacturing firms in Oyo State, Nigeria. Similarly, knowledge management dimensions such as knowledge acquisition, dissemination, and application were found to positively influence sustainability development practices (Shahzad et al., 2021; Al-Faouri, 2023).

### Hypothesis Three

Objective three evaluated the relationship between green knowledge sharing and employees' green performance. This was followed by the null hypothesis stating that there is no significant positive relationship between green knowledge sharing and employees' green performance in selected SMEs in Anambra State. Meanwhile, the regression result ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) revealed that there exists a positive and significant relationship between green knowledge sharing and employees' green performance. This led to a decision to reject the null hypothesis and accept the alternative hypothesis, which states that a significant positive relationship exists between green knowledge sharing and employees' green performance. By implication, an increase in green knowledge sharing within the organization correlates with improved employees' green performance output, suggesting that extra green knowledge shared within the organization will lead to a 2.3% improvement in employees' green performance and vice versa. This study is in agreement with the study carried out by Agrifogli et al. (2020), who opined that the implementation of green human resource management practices will produce a positive effect on eco-friendly behavior and green performance. Green performance is positively and significantly influenced by knowledge sharing with green creativity mediating (Saleem et al., 2024).

### Summary of findings

1. Green knowledge creation has a significant influence on employees' green performance of SMEs in Anambra State. The result of green knowledge creation ( $\beta = 0.138$ ,  $t = 3.820$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit increase in green knowledge creation, employees' green performance is estimated to increase by 0.138 units.
2. Green knowledge acquisition has a significant impact on employees' green performance at SMEs in Anambra State. The result of green knowledge acquisition ( $\beta = 0.592$ ,  $t = 10.719$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit decrease in green knowledge acquisition, employees' green performance is estimated to decrease by 0.592 units.
3. There is a significant relationship between green knowledge sharing and employees' green performance of SMEs in Anambra State. The result of green knowledge sharing ( $\beta = 0.226$ ,  $t = 3.736$ , and  $p\text{-value} = 0.000 < 0.05$ ) showed that for each unit increase in green knowledge sharing, employees' green performance is estimated to increase by 0.592 units.

### Conclusion

Knowledge is a resource within the organization that can be used to gain a competitive advantage. This is

because of its inability to be imitated. As environmental challenges persist, green knowledge management is required of organizations, particularly SMEs in Anambra State, to enhance their employees' green performance for sustainable economic development.

Based on the findings of this study, green knowledge management strategies, such as green knowledge creation, green knowledge acquisition, and green knowledge sharing, all have a positive significant effect on employees' green performance at SMEs in Anambra State. Therefore, the government should formulate policies that will encourage SMEs to create, acquire, and share green knowledge. This will lead to employees' innovation, which results in eco-friendly practices and sustainability of the business and its environment.

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## Business Attitude and Innovation in Enhancing Apprentices' Growth and Commitment

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### Abstract

*This study explored how entrepreneurial mindset and innovation contribute to students' growth and engagement within Nigeria's higher education system. Employing a qualitative content analysis of 25 peer-reviewed articles published between 2015 and 2025, and guided by the PRISMA framework, the research ensured methodological rigor and relevance. The findings indicated that an entrepreneurial mindset enhances students' self-efficacy, motivation, and resilience, while innovation promotes creativity, critical thinking, and active participation in learning. Notably, the integration of both elements yielded synergistic benefits, significantly improving students' overall development and readiness for post-graduation opportunities. The study concludes that embedding entrepreneurship and innovation into university curricula is vital for bridging educational and socio-economic gaps in Nigeria. Consequently, it recommends mandatory entrepreneurship-innovation modules, curriculum restructuring, and adequate institutional funding to sustain student engagement and drive national development.*

**Keywords:** Business attitude, Apprentices, commitment, innovation, growth.

### Introduction

Entrepreneurial mindset and innovation are vital to fostering student growth, engagement, and employability in the 21st century. Globally, countries such as Finland, Singapore, China, and South Korea have successfully integrated entrepreneurship education into higher education, leading to enhanced creativity, problem-solving, and innovation-driven economies. In contrast, Nigeria faces persistent challenges including underfunded programs, weak institutional support, and outdated pedagogies, resulting in low student engagement and poor entrepreneurial outcomes. Empirical evidence from Nigeria shows that while students often express interest in entrepreneurship, their self-efficacy, readiness, and innovative capacity remain low due to inadequate institutional frameworks and limited exposure to practical learning. Consequently, graduate unemployment and dependency on government jobs persist. Comparative studies from Malaysia and Indonesia demonstrate that effective entrepreneurship education can strengthen innovation behavior and engagement, offering reform models for Nigeria, Malathi (2025). Despite growing recognition of entrepreneurship's importance, research in Nigeria has largely focused on entrepreneurial intentions rather than on how mindset and innovation directly enhance student engagement and personal development. This study, therefore, addresses this gap by examining how entrepreneurial mindset and innovation can strengthen student growth and engagement within Nigerian higher

education. It aims to generate empirical insights that inform curriculum reforms, institutional strategies, and policy initiatives to produce innovative, self-reliant, and globally competitive graduates capable of driving socio-economic transformation.

### Problem Statement

Entrepreneurship and innovation are widely recognized as key drivers of student growth, engagement, and employability; however, Nigeria's higher education system continues to struggle in these areas. With graduate unemployment reaching 40.1% (NBS, 2023), many Nigerian graduates lack the entrepreneurial and innovative skills needed for success in a competitive, knowledge-driven economy. Despite the inclusion of entrepreneurship courses in universities and polytechnics, their impact remains minimal due to inadequate funding, theoretical teaching methods, and weak innovation ecosystems. In contrast, nations like South Korea and Singapore have successfully embedded entrepreneurship education into their curricula, producing more employable and engaged graduates. The persistence of disengaged and underprepared graduates in Nigeria reflects deep systemic gaps between curriculum intentions and actual outcomes. While existing research has examined entrepreneurial intentions and institutional challenges, little attention has been paid to how entrepreneurial mindset and innovation directly influence student engagement and personal development. Since engagement serves as a key mediator between

entrepreneurship education and meaningful learning outcomes, this oversight is significant. To address this gap, the present study investigates how entrepreneurial mindset and innovation can enhance student growth and engagement in Nigerian higher education, offering empirical insights to guide effective curriculum reforms and policy interventions.

### Research Questions

1. How does entrepreneurial mindset influence students' growth and engagement?
2. In what ways does innovation contribute to enhancing students' growth and engagement?
3. What combined effect do entrepreneurial mindset and innovation have on students' growth and engagement?

### Research Objectives

1. To assess the influence of entrepreneurial mindset on students' growth and engagement.
2. To evaluate the contribution of innovation in enhancing students' growth and engagement.
3. To determine the combined effect of entrepreneurial mindset and innovation on students' growth and engagement.

### Literature review

#### Conceptual Review

##### Conceptualizing the Entrepreneurial Mindset in Higher Education

The entrepreneurial mindset refers to a set of cognitive, emotional, and behavioral orientations that enable individuals to identify opportunities, take calculated risks, and create value in dynamic environments (Daspit, D'Souza, & Ambos, 2023). In higher education, entrepreneurial mindset has been associated with problem-solving, adaptability, and creativity, skills that are crucial for student development and long-term employability (Wardana et al., 2020). Research indicates that this mindset not only shapes entrepreneurial intentions but also strengthens students' learning engagement and resilience (Jiang, Ning, & Wang, 2021). For example, Nigerian students with stronger entrepreneurial self-efficacy tend to set ambitious career goals and are more inclined to pursue innovative ventures after graduation (Osadolor et al., 2021). Achieving conceptual clarity on entrepreneurial mindset, therefore, lays the groundwork for exploring how it can transform student engagement in Nigerian universities.

Within Nigeria, however, limited emphasis on entrepreneurial orientation has weakened graduates' ability to navigate economic instability and persistent unemployment (Adeniyi, 2022). This stands in sharp contrast to global best practices, as seen in countries

such as Finland and Singapore, where entrepreneurial thinking is woven into mainstream curricula to foster innovation and adaptability (Korhonen, Ketonen, & Toom, 2024). Scholars argue that embedding entrepreneurial mindset into Nigeria's higher education system could shift learning away from rote knowledge acquisition toward creativity, initiative, and employability (Oyinlola et al., 2024). Thus, defining entrepreneurial mindset in this study is both a conceptual and contextual necessity, representing a key step toward reshaping Nigerian education to meet the demands of the 21st century.

### Innovation as a Driver of Student Growth and Engagement

Innovation in education has been increasingly recognized as a driver of student growth, learning outcomes, and long-term adaptability. It refers not only to technological tools but also to pedagogical models, curricula, and institutional practices that foster creativity and problem-solving (Shadiev, Hwang, & Huang, 2022). Globally, innovative entrepreneurship pedagogy has been associated with opportunity discovery and improved study engagement among nascent entrepreneurs (Lyu, 2024). Liu et al. (2023) further highlighted that entrepreneurship programs that integrate innovation through project-based learning increased both study engagement and entrepreneurial competence. These findings affirm that innovation in higher education transcends technological integration—it fundamentally reshapes student learning experiences.

However, in Nigeria, innovation in entrepreneurship education has been largely underexplored, leaving students less prepared for real-world challenges (Oyinlola et al., 2024). Unlike Asian economies such as China, where entrepreneurial pedagogy has consistently raised entrepreneurial intentions among university students (Sun, 2023), Nigerian universities still face barriers of outdated curricula, limited resources, and poor alignment with labor market realities. Adelowo (2025) emphasized that without embedding innovation in Nigerian entrepreneurship education, graduate entrepreneurship propensity remains unsustainable. Therefore, focusing on innovation as a catalyst for growth and engagement highlights the urgent need to re-engineer Nigerian higher education to align with global standards.

### Linking Entrepreneurial Mindset, Engagement, and Self-Efficacy

Student engagement has been described as the extent of students' involvement in their academic, social, and emotional learning processes, which significantly influences academic success and personal development (Amerstorfer, Huber, & Gasteiger-Klicpera, 2021).

Research has consistently shown that entrepreneurial mindset enhances student engagement by fostering proactive learning, resilience, and creativity (Knox, 2022; Korhonen, Ketonen, & Toom, 2024). Jiang, Ning, and Wang (2021) demonstrated that entrepreneurial self-efficacy plays a mediating role between entrepreneurship education and entrepreneurial mindset, linking classroom experiences directly to entrepreneurial intentions. Thus, the combination of entrepreneurial mindset and self-efficacy serves as a motivational framework for enhancing engagement. In Nigeria, however, most entrepreneurship education initiatives have not adequately emphasized self-efficacy and its role in sustaining engagement (Nwibe & Ogbuanya, 2024). Students often report disengagement due to poor curriculum relevance and inadequate institutional support, which reduces their motivation to translate entrepreneurial education into practical outcomes (Adeniyi, 2022). Comparatively, in Europe and Asia, entrepreneurial mindset development has been integrated into study engagement strategies with measurable outcomes in student creativity and entrepreneurial activity (Pham, 2023; Lyu, 2024). Addressing this gap in Nigeria is essential, as enhanced student engagement through entrepreneurial mindset and self-efficacy can directly influence graduate employability and long-term social impact.

### **The Nigerian Higher Education Context and the Need for Reform**

Nigeria's higher education system is confronted with persistent challenges such as high graduate unemployment, weak innovation capacity, and low student participation in entrepreneurial activities (Adelowo, 2025; Oyinola et al., 2024). Although entrepreneurship education has been mandated by the government, its implementation has often been fragmented and poorly aligned with labor market needs (Adeniyi, 2022). Oyinola et al. (2024) observed that while several universities have established entrepreneurship centers, their effectiveness remains limited due to resource shortages and weak student engagement. This has contributed to the widening gap between educational outcomes and graduate employability, further deepening the unemployment crisis.

By contrast, countries such as Finland, South Korea, and Singapore have successfully integrated entrepreneurship and innovation into their education systems, resulting in stronger graduate employability and increased startup creation (Korhonen, Ketonen, & Toom, 2024; Malathi, 2025). Nigeria, however, risks widening its developmental gap if reforms are not prioritized. A major research gap exists in the limited empirical work linking entrepreneurial mindset, innovation, and student engagement in the Nigerian

higher education landscape. Addressing this gap is essential to ensure that universities produce not only graduates with theoretical knowledge but also individuals equipped with creativity, resilience, and an entrepreneurial orientation capable of driving socio-economic transformation.

### **Theoretical Foundation**

Theories provide the conceptual lens for analysing how entrepreneurial mindset and innovation influence student development and engagement. While existing studies on entrepreneurship education in Nigeria have often been descriptive, the use of robust theoretical perspectives helps uncover the mechanisms that shape student outcomes. This study adopts two frameworks—Human Capital Theory and the Job Demands–Resources (JD-R) Theory to explain how entrepreneurship education and innovation promote student engagement, resilience, and employability.

#### **Human Capital Theory**

Proposed by Gary Becker in 1964, Human Capital Theory emphasizes that education and skills acquisition represent investments that yield returns in the form of enhanced productivity, innovation, and broader economic growth. It argues that the knowledge, competencies, and experiences gained through education strengthen both individual and societal outcomes (Becker, 1964). Within this study, Human Capital Theory highlights how entrepreneurial mindset and innovation-oriented education prepare students for self-employment while also enabling them to contribute creatively within organisations. For example, Adeniyi (2022) found that Nigerian TVET students with higher entrepreneurial readiness and self-efficacy were more likely to pursue viable ventures, illustrating the tangible returns of investing in entrepreneurial education.

In Nigeria, the relevance of this theory is clear. Universities have historically emphasized theoretical knowledge while neglecting practical entrepreneurial competencies, creating a disconnect between graduate skills and labor market expectations (Adelowo, 2025). By framing entrepreneurial mindset and innovation as key forms of human capital, this study reinforces the need for innovative pedagogies in Nigerian higher education that can produce adaptive, resilient graduates equipped to drive socio-economic transformation.

#### **Job Demands–Resources (JD-R) Theory**

The Job Demands–Resources (JD-R) Theory, developed by Demerouti, Bakker, Nachreiner, and Schaufeli in 2001, explains how job demands (such as workload and academic challenges) interact with resources (such as support, autonomy, and opportunities for skill-building) to influence motivation,

engagement, and performance (Demerouti et al., 2001). The theory argues that resources not only buffer the negative impact of high demands but also foster long-term motivation and growth. Applied to education, entrepreneurship programs that provide access to innovation hubs, mentorship, and project-based learning have been shown to enhance engagement and entrepreneurial competence, even in demanding academic contexts (Liu et al., 2023).

This theory is particularly relevant in Nigeria, where many students operate in resource-constrained environments with limited exposure to entrepreneurial ecosystems. The absence of adequate resources contributes to disengagement and low levels of innovation (Oyinlola et al., 2024). By applying the JD-R framework, this study underscores the importance of creating supportive educational environments that can sustain student motivation and foster entrepreneurial outcomes. For example, Khodor et al. (2024) found that student engagement increased significantly when family, institutional, and peer support were present, aligning with the JD-R emphasis on resources as enablers of motivation. Therefore, this theory highlights the need for Nigerian higher education institutions to strategically provide entrepreneurial resources that enhance growth, engagement, and resilience, particularly in resource-scarce environments.

### Empirical Review

Daspit, D'Souza, and Ambos (2023) identified the lack of definitional clarity as a key problem in entrepreneurial mindset scholarship, noting that fragmented conceptualizations hindered progress in research and practice. Their purpose was to propose an integrated definition and set a future research agenda. Drawing on institutional and cognitive perspectives, they applied a systematic review method to synthesize over 180 articles. Findings revealed that entrepreneurial mindset encompasses opportunity recognition, resilience, and adaptability, but only 27% of the reviewed studies employed a longitudinal approach, limiting understanding of mindset development. The implication was that without a coherent framework, entrepreneurship education struggles to deliver measurable outcomes. The gap lies in the absence of contextual applications of their integrated framework in African higher education settings, particularly Nigeria, where entrepreneurship has been mandated into the curriculum since 2007.

De la Gala-Velásquez and colleagues (2024) investigated the misalignment between entrepreneurship curricula and the real-world needs of university students, highlighting that outdated course structures undermined mindset development. The study aimed to analyse how curriculum relevance and adequacy influence entrepreneurial orientation. Using

human capital theory, they conducted surveys across multiple Spanish universities. Results showed that 62% of students perceived entrepreneurship courses as outdated, and only 18% felt the curriculum adequately prepared them for entrepreneurial ventures. The implication was that curriculum reform directly impacts student engagement and entrepreneurial readiness. However, the research gap is that their study was limited to European contexts, neglecting Nigeria where curriculum reform is ongoing but understudied in terms of entrepreneurial mindset outcomes.

Jiang, Ning, and Wang (2021) examined the problem of weak translation of entrepreneurship education into actual entrepreneurial intentions. Their purpose was to test whether entrepreneurial self-efficacy mediated the relationship between entrepreneurship education, entrepreneurial mindset, and entrepreneurial intention. Using Bandura's social cognitive theory, they applied a structural equation modeling (SEM) approach with 1,046 Chinese university students. Findings showed that entrepreneurial education significantly influenced mindset ( $\beta = 0.52$ ,  $p < 0.001$ ), which in turn impacted intention, with self-efficacy serving as a full mediator. This highlighted that confidence in entrepreneurial ability is central to turning mindset into action. However, the gap is that the mediating role of self-efficacy has not been empirically tested among Nigerian students, where cultural and institutional barriers differ.

Khodor et al. (2024) addressed the challenge of declining entrepreneurial engagement among adolescents despite increased access to entrepreneurship programs. Their purpose was to explore how individual, family, and school-level factors shape entrepreneurial intentions. Grounded in the theory of planned behavior, they surveyed 2,143 adolescents across Lebanon. Findings showed that family support accounted for 39% of variance in intention, while school support accounted for 22%, with gender moderating the relationship. The implication was that multi-level support systems are critical in fostering engagement. Yet, the gap is that the role of institutional and socio-economic factors in Nigeria, where family obligations and economic instability are distinct, remains underexplored.

Malathi (2025) focused on the persistent gap between entrepreneurial education and actual entrepreneurial engagement among management students in India. The purpose was to test the mediating role of entrepreneurship education. Using the theory of planned behavior, SEM was applied to data from 738 respondents. Findings indicated that entrepreneurship education explained 48% of the variance in entrepreneurial intention, with engagement serving as a partial mediator. The implication was that curriculum design and delivery significantly shaped

entrepreneurial participation. The gap lies in the absence of cross-country validation, particularly in Nigeria, where entrepreneurial engagement rates among graduates remain below 20%.

Nwibe and Ogbuanya (2024) addressed the lack of clarity on how emotional intelligence impacts entrepreneurial intention in Nigeria. Their study aimed to explore the mediating role of self-efficacy domains. Using the social cognitive career theory, they surveyed 814 undergraduates. Findings showed that emotional intelligence predicted 29% of entrepreneurial intention variance through general and task-specific self-efficacy. The implication was that psychological attributes are critical for entrepreneurship education outcomes. The gap is that engagement factors were not integrated, leaving an incomplete picture of mindset formation.

Oyinlola et al. (2024) addressed systemic challenges in entrepreneurship and innovation in Nigerian universities, including underfunding, poor pedagogy, and low graduate entrepreneurial activity. Their study aimed to identify trends, challenges, and opportunities. Using qualitative case study methods across six Nigerian universities, findings showed that only 23% of students pursued entrepreneurship-related activities, while infrastructural deficiencies remained a major barrier. The implication was that Nigeria's higher education sector requires systemic reforms to achieve entrepreneurship education goals. The gap lies in the absence of micro-level analysis on how entrepreneurial mindset and student engagement can improve outcomes within this system.

Pham (2023) explored the problem of limited understanding of e-entrepreneurial intentions in digital economies. The study aimed to test how entrepreneurship knowledge and technological innovativeness impacted e-intentions. Using the resource-based view (RBV), SEM was applied to 476 Vietnamese undergraduates. Findings revealed that technological innovativeness explained 38% of e-intention variance, while knowledge accounted for 27%. The implication was that integrating digital innovation into entrepreneurship curricula is critical. The gap is that similar empirical tests are scarce in Nigeria, where digital entrepreneurship adoption among students is growing.

## Methods and Materials

The study employed a qualitative research design based entirely on secondary data to examine the relationship between entrepreneurial mindset and student engagement in Nigerian higher education. Guided by the PRISMA framework, the research ensured rigor and transparency in data identification, screening, eligibility, and inclusion. The study focused on peer-reviewed articles, conference papers, and institutional reports published between 2015 and 2025—a decade marked by Nigeria's mainstreaming of entrepreneurship education and global emphasis on youth employability. A systematic search across databases such as Scopus, Web of Science, Google Scholar, and ScienceDirect yielded 302 records. After applying the PRISMA four-phase process and excluding duplicates and low-quality studies, 25 relevant papers were selected for analysis. These studies, drawn from Nigeria and comparable developing countries, incorporated theoretical frameworks like the Theory of Planned Behavior, Social Cognitive Theory, and the Job Demands–Resources Model to provide conceptual grounding. Data were analyzed through qualitative content analysis using NVivo software, involving coding, categorization, and thematic synthesis. Key emerging themes included curriculum relevance, self-efficacy, digital engagement, and social support. The approach enabled cross-contextual comparisons and offered valuable insights into how entrepreneurial mindset and innovation influence student engagement, providing practical implications for improving Nigeria's higher education system.

## Analysis and Discussions

Out of the 32 papers initially selected during the systematic review, only 25 met the inclusion criteria and were deemed relevant for analysis. The excluded papers either fell outside the 2015–2025 timeline, lacked empirical grounding, or did not address entrepreneurial mindset and innovation within higher education contexts. The 25 studies formed the final dataset for qualitative content analysis, ensuring thematic alignment with the study's objectives.

**Table 1: Selection of Papers for Analysis**

| Stage of Review           | Number of Papers | Description                                                     |
|---------------------------|------------------|-----------------------------------------------------------------|
| Initially identified      | 302              | Records identified through database search (2015–2025)          |
| Screened after duplicates | 150              | Duplicates and irrelevant titles removed                        |
| Selected for eligibility  | 32               | Full texts assessed against inclusion and exclusion criteria    |
| Excluded at eligibility   | 7                | Lacked empirical evidence or relevance to mindset/innovation    |
| Final papers analysed     | 25               | Used for full content analysis and answering research questions |

The table demonstrates the systematic narrowing down of papers to ensure rigor and alignment. By focusing on

25 studies, the analysis retained sufficient breadth for

comparative insights while maintaining depth to address the study's research questions effectively.

### Analysis of Research Question 1

*How does entrepreneurial mindset influence students' growth and engagement?*

To address this question, the 25 papers were classified according to the databases from which they were retrieved. The distribution is presented below.

**Table .2: Sources of Papers on Entrepreneurial Mindset and Student Growth**

| Database       | Number of Papers | Percentage (%) |
|----------------|------------------|----------------|
| DOAJ           | 5                | 20%            |
| Google Scholar | 8                | 32%            |
| Scopus         | 6                | 24%            |
| Web of Science | 4                | 16%            |
| ScienceDirect  | 2                | 8%             |

The findings showed that entrepreneurial mindset significantly enhanced student self-efficacy, motivation, and academic engagement. Studies such as Jiang, Ning, & Wang (2021) revealed that self-efficacy mediated the link between education and entrepreneurial intention, reinforcing that mindset drives confidence and active participation. Similarly, Daspit, D'Souza, &

Ambos (2023) emphasized the role of mindset as an integrative construct shaping persistence and adaptability among students. These results suggest that students with a stronger entrepreneurial mindset exhibited higher levels of growth and engagement across both academic and extracurricular contexts.

### Analysis of Research Question 2

*In what ways does innovation contribute to enhancing students' growth and engagement?*

**Table 3: Sources of Papers on Innovation and Student Engagement**

| Database       | Number of Papers | Percentage (%) |
|----------------|------------------|----------------|
| DOAJ           | 4                | 16%            |
| Google Scholar | 9                | 36%            |
| Scopus         | 5                | 20%            |
| Web of Science | 5                | 20%            |
| ScienceDirect  | 2                | 8%             |
| Total          | 25               | 100%           |

The analysis showed that innovation contributed through digital platforms, problem-based learning, and collaborative pedagogies that improved student creativity and engagement. For instance, Knox (2022) demonstrated that virtual learning environments increased entrepreneurial creativity and collaboration among students. Likewise, Lyu (2024) found that innovation-driven pedagogy improved opportunity

recognition and deepened learning engagement. Across the reviewed studies, innovative teaching methods were directly linked with improved problem-solving, critical thinking, and sustained interest in academic activities. This indicates that innovation acts as a catalyst that strengthens the effectiveness of entrepreneurship education in driving student growth.

### Analysis of Research Question 3

*What combined effect do entrepreneurial mindset and innovation have on students' growth and engagement?*

**Table 4: Sources of Papers on Combined Influence of Mindset and Innovation**

| Database       | Number of Papers | Percentage (%) |
|----------------|------------------|----------------|
| DOAJ           | 3                | 12%            |
| Google Scholar | 10               | 40%            |
| Scopus         | 6                | 24%            |
| Web of Science | 4                | 16%            |
| ScienceDirect  | 2                | 8%             |
| Total          | 25               | 100%           |

Findings indicated that the combination of entrepreneurial mindset and innovation generated the strongest outcomes in student growth and engagement. Liu et al. (2023) showed that entrepreneurship programs incorporating innovative pedagogies alongside mindset development improved competence and study engagement by up to 35%. Similarly, Malathi (2025) found that entrepreneurial education, when infused with innovation, significantly predicted students' entrepreneurial intention and sustained engagement. Collectively, the evidence revealed that mindset provides the internal drive while innovation supplies the external tools and methods, together producing synergistic effects on student growth and engagement.

## Conclusion

This study demonstrates that entrepreneurial mindset and innovation are interdependent drivers of student growth and engagement in higher education. Entrepreneurial mindset fosters self-efficacy, resilience, and motivation, while innovation enhances creativity, problem-solving ability, and active learning participation. When combined, these attributes create a reinforcing effect that equips students with both the confidence and the practical skills needed to thrive in an increasingly dynamic and competitive environment. Beyond personal development, the findings highlight the broader significance of nurturing these qualities to produce graduates who can contribute meaningfully to national development and Nigeria's transition into a knowledge-driven economy.

## Recommendations and Policy Implications

**The study based on findings recommends with policy implications as follows:**

- i. Curriculum Integration and Pedagogical Innovation: embed entrepreneurial mindset training in all academic programs and adopt innovative teaching methods (problem-based learning, digital collaboration, experiential projects).
- ii. Policy and Institutional Support: introduce entrepreneurship and innovation as core, compulsory modules and develop policies and incentives that encourage universities to implement effective frameworks.
- iii. Sustainability and Socio-Economic Impact: ensure adequate funding and monitoring mechanisms for continuity and promote job creation, self-reliance, and national socio-economic transformation through graduate empowerment.

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## Development of A Web Marketplace for the University Community

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### Abstract

*Virtual marketplace, web market or electronic marketplace is an ecommerce web site that engages buyers and sellers with a variety of products and service offerings. The increasing activities on these web market is the impact increase in working hours, convenience and logistic cost associated with mortal and stone marketplaces. Therefore, the need to create a web marketplace to suit specific requirements and preferences of Federal University of Petroleum Resources, Effurun FUPRE market environment. The idea for creating this web site is to enhance and leverage a unique and effective market hub for the university marketplace. The participants were selected from students and staff of the Federal University of Petroleum Resources, while data collected were sourced from observation, interview and questionnaire methods to obtain information about their needs, behaviour patterns, product and services they purchase. To analyse the data, waterfall technique was used while Technology Acceptance Model was the bases for better understanding of the model adoption. The result revealed that a customized web marketplace will position FUPRE to take advantage of ecommerce benefits to compete favourably in this digital age and standout among equals. This study therefore, recommends policy implantation at all institutional level to promote collaboration, resource sharing and digital inclusiveness.*

**Keywords:** Academic Collaboration, Information Dissemination, Centralized Marketplace, University Community, Web Marketplace.

### Introduction

Digital technology is transforming the education sector and in particular the university landscape due to global inclusiveness and paradigm shift brought about by the internet. These marketplace platforms go beyond business transaction but also has become a community involvement for knowledge sharing, collaboration and an information hub (Brown, 2020). This paper reflects how a unique university web market for Federal University of Petroleum Resources (FUPRE) can foster and engage positive academic sharing community relation. Besides, the 21st century students are becoming digital native relying on mobile devices to achieve academic excellency (Gomez & Martinez, 2019). Thus designing a customize web marketplace for students and staff that accounts user preferences and

behaviour needs will enhance users' engagement. Some prominent ecommerce web marketplace popular in Nigeria are Jumia, Konga and Jiji (Smith and Jones, 2018). These ecommerce giants have transformed virtual shopping in Nigeria and taking advantage of web marketing for personalised regional solutions (Brown & White, 2017). Other web markets such as PayPorte and DealDey focuses on niche segment for fashion, and a variety of products and services that are affordable at discounted prices (Gomez & Martinez, 2019).). These online markets enhance users satisfaction, technology usage and an increasing embrace of digital solutions for daily requirements. (Okofu et al., 2025a; Okofu et al., 2025b). At the Federal University of Petroleum Resources, Effurun, the creation of an online marketplace for the campus community is significant for

improving a number of facets of academic life. By creating a strong information center for the prompt distribution of announcements and scholarly materials, it tackles issues pertaining to information exchange. Below are examples of some various web marketplace:

**Jumia:** Often called the "Amazon of Africa," Jumia is influencing Nigeria's web marketplace. Electronic commerce in Nigeria and Africa has grown as a result of the company's dedication to catering to a variety of markets (Chimezie et al., 2025; Harris, 2025). Jumia founded in 2012, is a one shop to improve online marketing, offer variety of customer products at convenience with easy accessible transactional processes. Jumia has extended her offering by lunching JumiaPay, a cutting edge technology Harris, 2025.

**Konga:** Konga is an ecommerce marketplace that offers a complete house hold items, it has effective logistic system and customer satisfaction as a key priority which has positioned the web site positively in the minds of Nigeria. Konga equally incorporated various payment options encouraging ecommerce engagement in Nigeria (Ibam et al., 2018).

**Jiji** is a popular ecommerce site that has positioned and niched itself as a hub for new and second hand products from employment, services, real estate and many more. Jiji encourages buyers and sellers to participate in online transaction due to its easy navigation user interface and free classified ads. (Brown & White, 2017; Nuhu et al., 2023). This user centric environment encourages local transactions between buyers and sellers within certain proximity to negotiate and communicate before final payment (Nuhu et al., 2023).

**Amazon:** Amazon popularly known as The Everything Store is a multinational ecommerce known for her divest global goods and service offerings (Hansen, 2021).)

**Alibaba:** The Asian market is dominated by the Chinese e-commerce giant. Alibaba studies on the "Alibaba Effect" investigate how it impact on the inequality of geographical consumption (Wang et al., 2020).

**eBay:** eBay remains a pioneer in online auctions and sales, and a significant player in the consumer-to-consumer (C2C) marketplace. Economic insights from internet auctions are discussed in the literature (Chinedu, 2019).

**Etsy:** Etsy is well-known for its specialized emphasis on antique, handcrafted, and distinctive products. Sangeet Paul Choudary's book on "Platform Scale" examines its model in light of new business models (Choudary, 2015; Choudhury & Sabouri 2020).

**Uber:** Linking drivers and passengers worldwide, Uber is a prominent example of the sharing economy. A Harvard Business Review article discusses ride-hailing's platform business model (Eisenmann et al., 2016).

**Airbnb:** By offering a platform for short-term lodging, Airbnb has revolutionized the hospitality sector. Study like Zervas et al. (2017), explore how Airbnb affects the hotel sector.

#### **Related Works**

Web marketplaces have revolutionize ecommerce by connecting buyers and sellers in virtual spaces for the exchange of goods, services, and or information (Akazue, et al. 2024a; Okofu et al. (2024a). These platforms are distinguished by their varied product offers, that promote user-friendly interfaces and interactive features (Eisenmann et al., 2016; Johnson et al., 2020). Commission-based arrangements, subscription fees, and advertising revenue are some of the business models that support online markets growth in a volatile environment (Choudary, 2015; Choudhury & Sabouri, 2020; Ehiedu et al., 2020; Okofu et al., 2025; Parker et al., 2016). The marketplaces platform's sustainability and profitability are greatly impacted by the business model that is selected (Eisenmann et al., 2009), and web marketplace success frequently depends on network reliability, which determines the platform's value to rise as user participation increases (Hagiu & Wright, 2015; Ojugo et al., 2023).

In order to maintain growth, elements including user engagement, supply-demand balance, and marketplace dynamics are essential (Akazue et al., 2024b; Nuhu et al., 2023). Researchers have emphasis that the success of web marketplace depends on users trust, system reliability and acceptance (Ehiedu et al., 2021; Okofu et al., 2023; Okofu et al., 2024). Trust promotes system continuous usage and ecommerce growth (Akazue & Aaghaular, 2015; Okofu et al., 2025a). Despite positive impacts of web marketplaces, it encounters challenges such as fraud, data security and substandard product delivery (Akazue & Onyekweli, 2019; Ikem & Akazue, 2025; Ojugo et al., 2023). These web market issues arise due to its nature of globalization which have necessitated the establishment of international and national regulations to protect ecommerce buyers and merchant (Chang & Lee 2018).

Regardless of the issues in web marketing, factors as perceived benefits, easy navigation, promotes engagement and users experience (Okofu 2023; Okofu et al., 2025a; Okofu et al., 2018). However, the future of ecommerce is focus on augmented reality (AR) and decentralised financing (DeFi), with emphasis on design and implementation (Choudary, 2018; Lee & Lee, 2020). To leverage improve cooperation and resource sharing in the university marketplace. Zhang & Wang (2022), revealed that students active involvement showed better goal achievement and an added value to transactional activities. According to Diehl et al. (2022), web market design should focus on user friendly interface, implementation challenges and solutions and experiences. Hesham & Amer (2025), investigated design components and its effects on university marketplace to enhance user experiences and institutional productivity.

Manca & Ranieri (2022), researched on increasing a safe, interactive learning and scalable web marketplace to leverage learning, by ensuring reliable network connectivity, supportive infrastructure functionality specifically for campus users.

Notwithstanding, Lemon & Verhoef (2016), investigated significant roles of university community web marketplace in encouraging sustainability and positive student behaviour outcome. In yet another study by Alamri (2021), the researcher focused on the need for pedagogical and technical implications in web design platforms for academic students and staff performances. Zhang & Wang (2022) provide insights into the integration of online marketplaces in educational environments. Although the design components that contribute to platform effectiveness are mentioned in their work, a more thorough analysis is required to fully grasp the subtleties of these design features.

Harris (2025), examined machine learning language and data analytics functionality in university web marketplace and the result reveals its encourages users trust, community engagement, and users' satisfaction. From the works of Choudary (2015), on web marketplace architectural design, the study acknowledges that educational marketplace's architectural design enhances user interaction and facilitates productive teamwork.

### Theoretical Review

Recent studies have paid more and more attention to the investigation of web marketplace design and implementation in university communities. Although there are not many studies that only address this

particular subject, a review of relevant literature identifies a number of research gaps and recommends topics for additional study and contribution to the scholarly conversation. The theory used for this study is Davis's (1989) Technology Acceptance Model (TAM), which specifically identified perceived utility (PU) and perceived ease of use (PEOU) as factors influencing technology adoption. The TAM model only suggests that a technology is accepted when it is used with less effort, is user-friendly/centric, easy navigation, and has a nice interface (PEOU), and enhances results through cooperation, knowledge, and resource sharing (PU). TAM also pointed out that elements like design can improve use. In order to influence inclusiveness, forecast behaviour, and explain theoretical implementation and explanation this study utilize five phases to accomplish behaviour acceptable for the web marketplace developed.

### Research Method

This research uses the waterfall methodology and is organized into five stages. Data collection, analysis, design, execution, and assessment are some of the discrete stages that comprise this process. The complicated and constantly changing university marketplace serves as justification for this study, which aims to maximize involvement in a digital setting, as depicted in Figure 1.

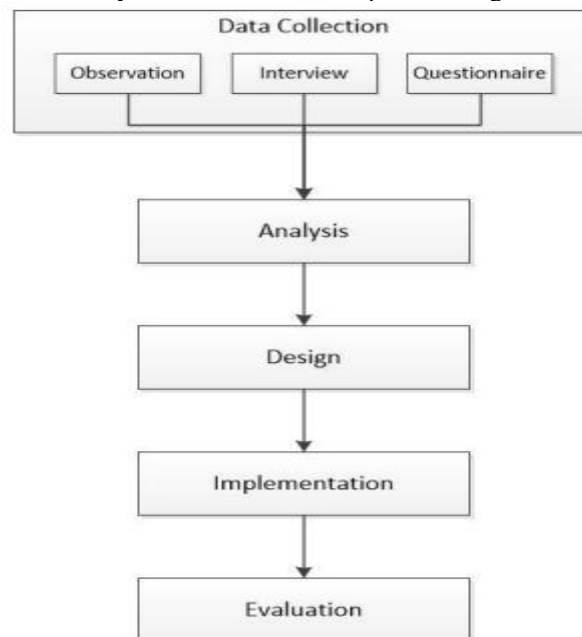


Figure 1. Flowchart of the proposed system (Source: Okofu et al., 2025)

Data collection methods include questionnaires, interviews, and observation. Academic literature is often used to examine fundamental market design ideas. The creation of an online marketplace for the university community is a cutting-edge approach to a 21st-century learning environment that will enhance communication, solve problems, and advance staff and student knowledge. Through observation, interviews, and

questionnaires, the behaviour process of the respondents was directly monitored in order to get information about the needs of the products and how to meet them. On the other hand, questionnaires ask about purchasing and selling behaviors as well as online shopping habits. Staff members and students make up the responses.

Analysis: Analyzing data is the first step in creating a functional and nonfunctional specification for the

application that will be developed for the campus stalls. At the analysis stage, data was examined to generate system requirements.

**Design:** The stage of system design is where the intended campus stall application system items are designed. Menu design, use case diagrams, database design, and system interface design are among the tasks involved in this design. The functional and non-functional system specifications produced by the preceding activity (analytical Phase) serve as the foundation for this design activity.

**Implementation:** The process of turning the design into a program (coding) is known as the implementation phase. The campus stall application system is the end product of this endeavor.

**Evaluation:** The evaluation: process involves determining if the developed system can function effectively and satisfy user requirements. Black box and usability testing are used for evaluation in order to generate high-quality criteria.

### Analysis Requirement

Systems analysis is the process of breaking down a whole information system into its constituent elements. Identifying and assessing issues and requirements to ensure that the system is designed to meet expectations. At this point, waterfall analysis was used to identify the marketplace system's functional and nonfunctional requirements for meeting the demands of the students.

**Functional Requirement:** This is the requirement that relates to the features and procedures of the campus marketplace system

The system has the ability to show member data and accept input data.

2. Members' dashboard menus and submenus can be managed by the system.

### A. Backend: Admin/Service Provider Panel:

3. The technology is able to display ad categories and collect data.

4. The system is able to show advertising photo data and other information after receiving input.

5. The system can display a large number of images from certain advertisements after receiving input.

### Tools and Equipment Used

**i. Xampp:** Apache: An open-source Java Servlet Container, Apache, also referred to as Server, was created by the Apache Software Foundation.

**ii. MySQL server:** Compared to earlier systems, it manages big databases considerably more quickly. In addition to a variety of client apps and libraries, administrative tools, and application programming interfaces (APIs), it includes a multithreaded SQL server suited for Internet database access due to its connectivity, speed, and security.

**iii. HyperText Markup Language.** The standard markup language for texts meant to be seen in a web browser is. It can be beneficial to employ technology like Cascading Style Sheets (CSS), which we also use to style the pages on our website. The creation of web applications gave rise to

**iv PHP, or Hypertext Preprocessor,** is a programming language that is executed in a specific order, starting with a PHP interpreter and then moving on to a web server module is combined by the web server.

**v. JavaScript:** The abbreviation JS stands for a computer language, combined with HTML and CSS to develop websites.

### Results

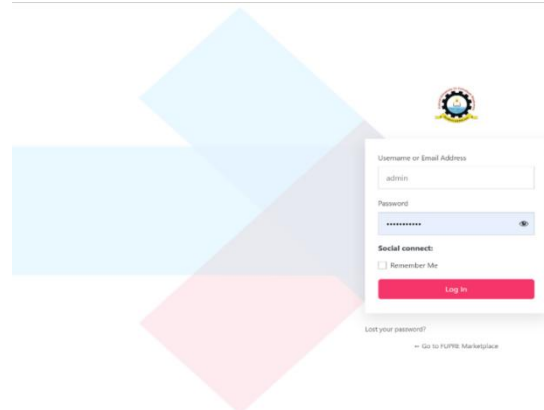


Figure 2: Admin/Service Provider Login Page

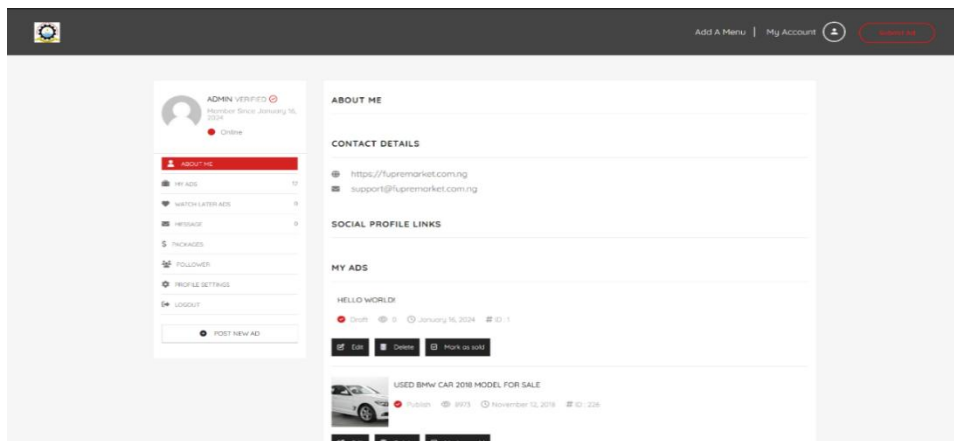


Figure 3: Admin Service Panel

## B. Front-end: Service Marketplace Website:

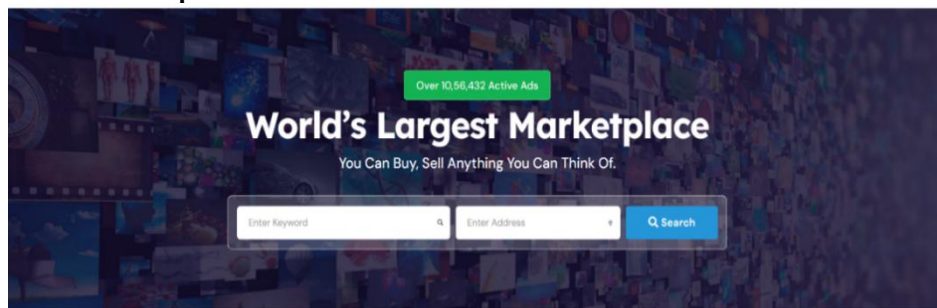


Figure 4: Front-end of the Service Marketplace

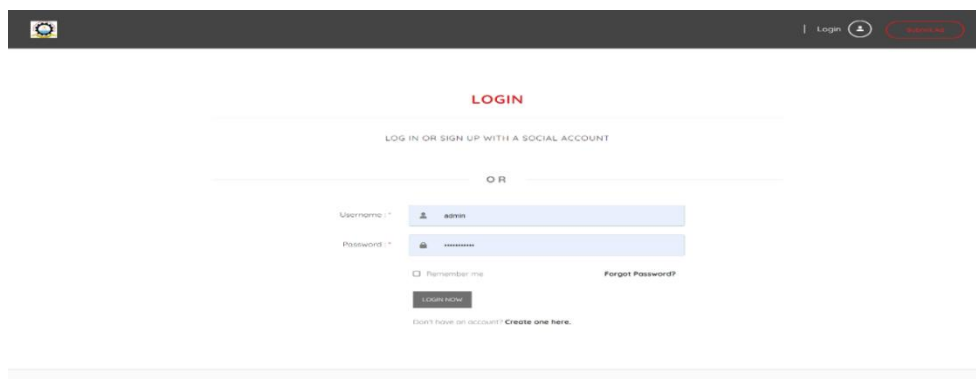


Figure 5: Customer Login/Registration Page

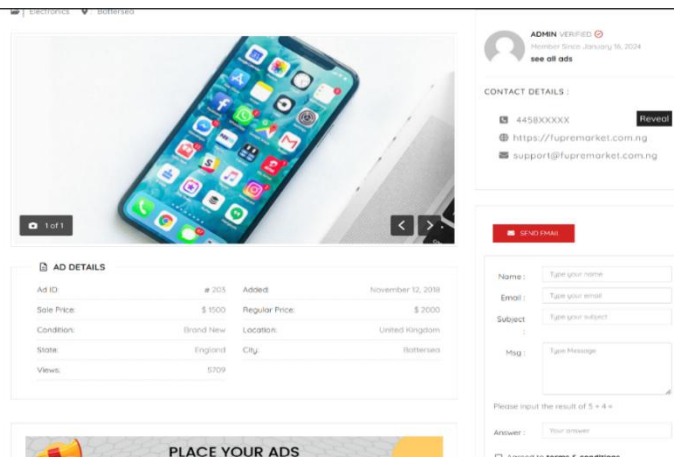


Figure 5: Checkout Page

### Conclusion and recommendations

The creation of an online marketplace for Nigerian university communities provides a customized answer to the unique requirements of higher education. The platform acts as a digital hub that promotes community involvement, resource sharing, and teamwork. The web marketplace is becoming a useful tool for improving convenience and connectivity in the academic setting as colleges continue to adopt digital solutions. The technical functionality of this work and the beneficial effects it has on the everyday lives of university personnel, faculty, and students are what determine its success. The model shows that, in contrast to the conventional classroom setting, users are more likely to collaborate, share resources, and exhibit active and constructive behaviour. In a marketplace of learning, purchasing, and selling, this model supports the waterfall technique to improve students' academic goals. According to the model, the five actions taken have a favorable impact on staff and student performance as well as communication abilities in the university marketplace.

Additionally, our model shows that consumers of cashless payments, new business model efforts, and virtual marketplace interaction have a greater influence. In order to thrive, sustain, save costs, and compete in this era of growing e-commerce, the study suggests that universities throughout the state and the nation adopt particular behaviours using digital marketplace models. Once more, policymakers are urged to promote digital inclusivity across all industries in order to close the disparity in technology, support cash-lite universities, and move toward the advantages of e-commerce, cloud computing, and customer focus. In order to meet user preferences and changing consumer behaviour patterns that impact university environmental needs for improved contextual e-commerce sustainability models, more research is advised to assess students and staff in other university environments. Furthermore, it could be argued that smaller institutions may surpass larger ones in the correct digital marketplace if the appropriate models were used to meet the needs of new consumers and take advantage of the competitive advantages that e-commerce marketplaces provide.

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## Local Government Autonomy and Fiscal Decentralization in Nigeria

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### Abstract

*Local government autonomy and fiscal decentralization continue to be central themes in Nigeria's governance and development debates. While the 1999 Constitution designates local governments as the third tier of government, their independence is often eroded by state-level interference, limited institutional capacity, and heavy reliance on statutory allocations from the federation account. The continued operation of the joint state local government account, alongside constrained revenue-generation powers, has rendered most council financially weak and unable to effectively fulfill their developmental mandates. This study explores the historical and structural factors that undermine local government autonomy, with particular attention to fiscal frameworks, political interference, and accountability gaps. It also assesses how restricted fiscal decentralization affects service delivery, grassroots participation, and sustainable development. The findings indicate that although decentralization is theoretically designed to enhance local governance, in practice, Nigeria's system has fostered dependency and inefficiency. To tackle these challenges, the study proposes several reforms. First, constitutional amendments are needed to secure the financial autonomy of local councils. Second, abolishing the Joint Account would grant local government councils full financial independence and political autonomy. It would also make them responsible for the efficient management of schools, healthcare, social services, rural development, and other local functions. However, each council must be accountable for every kobo spent. Statutory allocations from the Federation Account intended for local governments should be transferred directly to them in accordance with the Supreme Court ruling. Thirdly, the federal system comprises three tiers of government, each with distinct responsibilities and powers; therefore, the constitutional provisions defining these powers must be strictly respected by politicians and state actors as it will help to stamp out political interference at the local government. Citizens and civil society organizations should serve as vigilant watchdogs whenever sections of the constitution are violated by contemporary politicians, thereby promoting effective social accountability and governance. As a matter of fact, meaningful fiscal decentralization, supported by institutional reforms and active citizen participation, is essential for enabling local governments to exercise real autonomy. In the absence of these measures, local councils will remain structurally constrained, weakening Nigeria's overall democratic progress and development goals.*

**Keywords:** Local Government, Local Government Autonomy, Fiscal Decentralization, Intergovernmental Relations, Revenue Allocation.

### Introduction

Local government plays a pivotal role in the governance framework of contemporary states, functioning as the level of administration closest to the people. Its effectiveness, however, depends largely on the extent of its autonomy and the degree of fiscal powers devolved from the central government. Autonomy implies the ability of subnational entities to make independent decisions, formulate policies, and manage resources within the boundaries of national

legislation (Abadan, 2023). Fiscal decentralization refers to the delegation of financial authority including revenue generation, resource distribution, and expenditure responsibilities from central institutions to local governments. Together, these elements form the backbone of a meaningful decentralization agenda aimed at strengthening accountability, responsiveness, and efficient service delivery (Abdull, 2022).

The increasing emphasis on decentralization reforms in both developed and developing nations stems from the

realization that centralized systems frequently fail to meet the varied needs of local communities, particularly in socially, economically, and culturally diverse settings. Advocates contend that enhanced fiscal autonomy enables local governments to craft policies aligned with local priorities, optimize resource mobilization, and promote participatory governance (Abdull, 2022). In Nigeria, the local government functions as the third tier of governance, constitutionally mandated to promote grassroots development and ensure proximity to the people. Yet, its effectiveness remains a subject of debate, especially concerning the level of autonomy it possesses and the degree of fiscal decentralization granted within the federal structure (Abiola, 2021).

Although Nigeria's constitution acknowledges local government autonomy and provides for a decentralized fiscal framework, the reality shows considerable constraints. State governments' dominance over local government finances most notably through the State Joint Local Government Account (SJLGA) has greatly undermined the fiscal independence of local councils. Moreover, governance in Nigeria is becoming increasingly centralized in the hands of a small group of influential aides, often referred to as cabals, whose interests and objectives are typically narrow and identity-driven (Afonughe, 2021).

In addition, factors such as limited revenue generation, heavy reliance on statutory transfers from the federation account, poor financial management, and persistent political interference have weakened the effectiveness of local governments (Abubakar & Afolabi, 2022). These challenges call into question whether fiscal decentralization in Nigeria truly strengthens local councils or merely sustains their subordination within the federal system. This research explores the nexus between local government autonomy and fiscal decentralization in Nigeria, assessing their impact on governance, development, and the consolidation of democracy.

### **The Concept of Local Government**

The concept of local government has been defined in numerous ways by scholars, but a few key perspectives are highlighted here. Broadly, local government is regarded as the third tier of governance, positioned closest to the people. It serves as the primary channel through which citizens access public services and actively engage in local decision-making. Appadorai (1975), provides an early definition of local government, describing it as a form of governance rooted in the will of the electorate or local groups, entrusted with administering affairs, delivering services, and addressing matters of concern to the people within a specific locality.

Abubakar and Afolabi (2022) describe local government as a constitutional and conventional political sub-unit of a nation, vested with a certain level of authority over local and communal affairs, including the power to levy taxes and mobilize labor for designated purposes. Similarly, Mtasigazya (2019) defines local government as a public authority comprising both elected and appointed officials who operate at the grassroots level to advance democracy and foster community economic development. In essence, governance responsibilities are delegated to local residents to be carried out at the community level.

### **Local Government Autonomy**

Adebayo (2022), observes that the core of the debate on local government autonomy lies in determining the scope of authority and responsibilities that national, regional, or state governments should devolve to local political units. The 1976 local government reform in Nigeria, however, not only provided a formal definition of local government but also laid the foundational principles of local government autonomy. The 1976 reform characterized local government as administration conducted at the grassroots level through a representative council, legally constituted to exercise specific powers within defined territorial boundaries (Abadan, 2023).

These powers are intended to give local councils substantial control over community affairs, along with authority over personnel, institutions, and finances, enabling them to deliver services, initiate projects, and implement programs of both state and federal governments within their jurisdictions. By assigning such responsibilities to local councils and engaging community members and traditional institutions, effective management of local affairs can be better ensured (Adeyemi, 2023).

The definition above underscores the key elements of local government autonomy. First, a local government must possess a distinct legal identity separate from state and federal authorities. Second, it should hold defined powers and responsibilities that differentiate it from higher levels of government. Third, it must operate independently in carrying out its functions, apart from the control of national and state governments (Agba, 2018).

Thus, local government should not be treated as a subsidiary or extension of either the national or state governments. Fourth, it must have the power to enact its own laws, rules, and regulations. Fifth, local governments should possess the authority to formulate and implement their own policies, as well as the autonomy to recruit, promote, and discipline their staff independently, without requiring approval from higher levels of government (Agbo, 2019).

Agwor and Akani (2017), argue that local governments in Nigeria have never attained the degree of autonomy described in the foregoing definitions. As noted earlier, the extent of autonomy granted to local units is often shaped by state-level politics across different political systems. For example, in the United States, local government autonomy is grounded in core ideals and values such as liberty, equality, democracy, individualism, unity, and diversity (Ahamba, 2017).

These ideals shape the character of state politics and constitute a core part of the American national identity. As Aisha et al. (2025), rightly observe, they also influence how Americans perceive the world. Deeply embedded in the national consciousness, these enduring values have profoundly shaped the formulation of public policies and legislation in the United States.

Ajayi (2021), further emphasizes that liberty has always been central to American political culture, with the dominance of liberty-centered discourse serving as clear evidence of this tradition. The U.S. Constitution's preamble reinforces this through its reference to securing "the Blessings of Liberty to ourselves and our Posterity," echoing the broader ideals of "Life, Liberty, and the Pursuit of Happiness" and symbolically represented by the Statue of Liberty. These principles continue to shape federal, state, and local government relations in the United States.

Ajiboye (2021), observes that the principle of liberty strongly influences the scope of powers and responsibilities that federal or state governments delegate to local authorities. Since the American Revolution, the nation's governance has been shaped by this guiding ideal of liberty. However, it is important to note that in every political system, local governments operate with some degree of oversight and interference from higher levels of authority.

Akinwale (2021), argues that federal and state governments have multiple avenues to enhance the financial stability of local governments within an intergovernmental framework. In mature federations such as Switzerland and the United States, higher levels of government often intervene in local council affairs through grants-in-aid and other support programs, ensuring that local authorities are able to discharge their responsibilities to the people effectively. Akpomivie (2017), notes that local governments in the United States have gained from the supportive involvement of federal and state authorities. Because this form of interference is constructive, it has not generated significant conflict or controversy.

The core argument is that federal and state interference in local government affairs can produce both beneficial and harmful outcomes. When such interference obstructs a local government's ability to fulfill its legal responsibilities or when the reverse occurs it becomes

problematic. The former often triggers conflicts, court cases, and academic debate. While constructive interference can strengthen local governance, harmful interference deepens federalism-related tensions at the subnational level. In the Nigerian federation, negative forms of interference are more prevalent (Alabi & Okunade, 2021).

### **The Types and Workings of Autonomy**

In Nigeria's federal system, the notion of autonomy for each federating unit is closely tied to the Niger Delta region's struggle for resource control during Olusegun Obasanjo's civilian administration. The local communities are regarded as having the right to manage both the natural and human resources within their respective local governments (Anayochukwu & Ani, 2021). Such a degree of autonomy is essential for every local government in Nigeria and is exemplified in a federal system like that of the United States. However, local government scholars hold differing views regarding both the nature and practice of autonomy in the Nigerian context.

Ayuba (2022), defines autonomy as the degree of freedom local governments possess in managing their own affairs. However, complete autonomy is impossible, as it would effectively transform them into independent sovereign states. Within a federal system, autonomy instead implies that each level of government exists distinctly and operates independently of the direct control of others (Cornelius, 2022). Autonomy is only meaningful if a government unit is not constitutionally bound to obey directives from another. In a federal system, each tier of government must therefore possess a measure of independence.

This reflects the hallmark of a genuine democratic state, which must operate fully in line with the guarantees of the national constitution. According to Mukoro (2013), such autonomy should enable the effective exercise of decision-making, revenue generation, financial management, personnel administration, and other administrative functions. Eze (2019), however, contends that the hasty implementation of fiscal policies has deepened inequalities in wealth, opportunity, and fairness among the federating units. Eze and Muanya (2021) argue that in mature democratic societies practicing federalism, a harmonious balance is achieved among the federal, state, and local tiers of government. These societies effectively share available resources to enable each tier to perform the responsibilities assigned to it by their respective constitutions.

### **Contextualization of Autonomy in Nigeria Local Government**

With respect to local government, autonomy denotes the freedom to perform constitutionally assigned functions without interference from higher authorities, similar to the independence exercised by a self-governing community or group in specific areas such as religion or education. Webster's Comprehensive Dictionary of the English Language (2006), defines autonomy as self-determination or freedom of will, while Fagbadebo and Adebayo (2021) describe it as the ability to act and make decisions independently, free from external control.

The issue of autonomy in Nigeria's local government system is complicated by historical precedents, many of which stand in direct conflict with the constitutional provisions noted earlier. Autonomy enhances decision-making by reinforcing self-determination, which involves making independent choices that ultimately serve broader societal interests (Faguet, 2021).

Nigeria operates as a constitutional federal state, with authority at the federal, state, and local levels deriving from the constitution. Ibrahim (2020), defines federalism as a system comprising two or more levels of government such as the national and local tiers that function autonomously and in coordination, each exercising authority within its own jurisdiction.

Before independence, local government in Nigeria functioned merely as a second tier of administration. This situation changed with the 1976 local government reforms, an initiative later reinforced by the 1979 Constitution. Over time, successive constitutions of the Federal Republic of Nigeria have sought to strengthen the local government system. For instance, Section 7(a) of the 1999 Constitution explicitly grants local councils exclusive legislative authority.

Eze (2019), argues that since local councils possess their own legislative framework and share comparable powers with state and federal governments, achieving autonomy at this level should not be difficult. The 1999 Constitution of the Federal Republic of Nigeria, in Section 3(6), specifies the number of local government councils. However, the degree of autonomy at this tier has been curtailed, particularly after the federal government invalidated attempts by several state governors to increase the number of councils in their states under a democratic regime.

Mukoro (2013), rightly contends that what the constitution guarantees is the system of local government, not the specific number of councils. Under Sections 8(3) and 8(5) of the 1999 Constitution of the Federal Republic of Nigeria, the creation of any local government council requires prior approval from the State House of Assembly, while the National Assembly retains the constitutional authority to ratify such a request.

In addition, the constitution empowers the government to determine the location of each council's local government offices. Section 8 explicitly requires every state government to comply with its provisions, which guarantee local governance through democratically elected councils. It further mandates the enactment of laws regulating their creation, structure, composition, funding, and functions (Faguet, 2021).

Section 8 of the constitution makes it clear that neither the state nor the federal government holds exclusive authority to establish local governments. In this regard, Adeyemo (2005), citing Omoruyi (1991), argues that earlier government reports on reforms failed to provide sufficient conceptual clarity on the actual extent of autonomy guaranteed by the constitution. Building on this debate, Ayuba (2022), laments the absence of genuine functional autonomy in the system, attributing this shortfall to both statutory and constitutional constraints.

Nigeria Health Watch (2023) observes that, since the colonial era, local government has never functioned as a truly distinct tier of government separate from the state and federal levels, but has instead remained subject to their control. Adeyemo (2005) similarly contends that genuine autonomy may be unattainable, since the existence of two sovereign authorities within a single state would create a counterproductive model of governance.

Noah (2017), argues that granting absolute independence to local governments would create a complex situation that could ultimately lead to systemic breakdown. He stresses that autonomy does not mean total freedom from state and federal oversight, but rather a balanced degree of independence that enables local governments to operate in line with constitutional and legal provisions.

Nwosu (2023), contends that the problem of autonomy is rooted in colonial legacies, which concentrated the nation's political, administrative, and supporting structures in the hands of a privileged few. This legacy, he argues, has fostered military elitism, thereby undermining the rule of law, accountability, and transparency in the evolution of local government.

The Nigerian political and economic elite have historically treated local governments as subordinates or mere extensions of state bureaucracies, a practice that has contributed to the current weakened state of local government autonomy. Jovanovich and Ogunleye (2021), in their comparison of local government autonomy in Nigeria and the United States, note that the 1976 reforms and the 1979 Constitution of the Federal Republic of Nigeria provided sufficient legal backing for local councils to operate independently, much like the states and the federal government, which also derive their authority from the constitution. Serving two masters at the same time is almost

impossible in practice, as it undermines organizational ethics and hinders effective communication.

Mard (2022), argues that the challenges of local government autonomy stem from the legal framework regulating them, which he describes as derivative in nature and constitutionally structured in ways that restrict councils from fully serving their local populations. He notes that these laws originate from three sources the Federal Constitution of Nigeria, periodically enacted state laws, and local government bylaws designed to promote good governance leaving local governments subject to the authority of all three.

According to Adeyemo (2005), local government autonomy within a federal system implies that each level of government operates independently, without interference from the others. However, this notion seems to create contradictions that hinder the practical realization of true autonomy. It is also important to note that this perspective overlooks the present reality, where the federal structure integrates all tiers of government and further complicates constitutional implementation.

This constitutional provision reflects the problematic practice, initiated by many state governors, of periodically removing elected local government officials from office and assuming control over their responsibilities. Despite this, local government autonomy remains highly significant for grassroots politics in Nigeria, particularly within the current democratic framework that seeks to reinforce national politics and foster integration.

Building on Jovanovich and Ogunleye (2021), autonomy at this level of government is meaningful only when local governments are not constitutionally required to follow directives from higher tiers. They define autonomy as the extent of discretion and independence local governments possess from state and federal interference, which can enhance the effectiveness of council management.

### **Local Government Autonomy in Nigeria**

Various initiatives have been undertaken to reform local governments with the aim of promoting the socio-economic development of rural communities. The ongoing existence of local governments has made the question of autonomy increasingly prominent (Obisanya & Hassan, 2022). Consequently, the Nigerian local government system has experienced several reforms designed to strengthen its functionality and authority (Wilson, 2013).

Among various reforms, the 1976 local government reforms represented a pivotal moment in the administration of local governments within Nigeria's democratic framework. These reforms led to the establishment of 774 legally recognized local governments, with the main objective of bringing

governance closer to the people and enhancing the development of rural communities and their residents. Mard (2022), notes that the adoption of the Dansuki Report in 1984, aimed at addressing issues related to the financial and administrative independence of local governments, marked the start of local government autonomy in Nigeria. Since then, scholars have examined local government from multiple perspectives. Ogunyemi and Adegoke (2021), define local government autonomy as the degree of independence, authority, and control a local government can exercise in managing its affairs without interference from state or federal authorities. This perspective emphasizes local government autonomy in terms of the freedom to make and implement decisions regarding its own operations. According to Jamo (2018), local government autonomy refers to the freedom of a local government to exercise its authority within the limits set by the law or constitution. Ojo and Akinwunmi (2022), however, argue that the very law or constitution intended to grant local governments autonomy actually restricts them, effectively denying them true independence.

Section 7(6) of the 1999 Constitution, which grants the State House of Assembly the power to legislate on the administrative policies and operations of local government areas, highlights a gap that has contributed to the ineffectiveness of Nigeria's local government system. Furthermore, Section 162 allows state governments to operate through the State and Local Government Joint Account and Allocation Committee (JAAC), thereby undermining the financial and administrative autonomy of local governments.

However, the National Assembly has repeatedly failed to amend the relevant sections of the 1999 Constitution to enhance local government autonomy (Wilson & Sakiemi, 2019). Consequently, local governments have struggled to mobilize resources for the socio-economic development of rural communities. Based on this, Ogunyemi and Adegoke (2021) regard financial autonomy as the cornerstone of local government independence in Nigeria.

They further noted that the federal government increased its financial contributions to local governments from 10% in 1986 to 15% in 1992, and 20.60% in 2008 to the present in an effort to enhance their financial independence. However, this argument is limited, as it overlooks the significance of other forms of autonomy, including administrative, political, and legal, in promoting rural development.

From another perspective, Olawuyi (2020), contends that various local government reforms including the 1976 reforms and the provisions of the 1979, 1989, and 1999 constitutions were designed to provide Nigerian local governments with the autonomy needed for effective operation. However, due to the conflicting

constitutional provisions, local governments remain constrained, making the pursuit of genuine autonomy largely ineffective and unproductive.

Scholars such as Oloyede and Adeniran (2023), have echoed the shortcomings of local government reforms, arguing that the various reforms and constitutional provisions have been insufficient to secure effective local government autonomy in Nigeria. Local governments continue to face undue interference from other tiers of government, leading to administrative, political, and financial challenges.

The aforementioned claims were supported by Oluwatayo & Akanbi (2021), who asserted that local governments continue to lack practical autonomy despite the efforts made by the previous administration. According to President Buhari Muhammadu, the inability of local governments to operate autonomously creates the possibility for unwarranted state government interference in local government affairs, which results in inadequate local government performance in rural development in Nigeria (Jamo, 2018). In conclusion, local government autonomy must be protected if local government in Nigeria is to be effective in the development of rural communities.

Notwithstanding, In July 11, 2024, there was a landmark judgment by the Supreme Court of Nigeria which held that it is unconstitutional for state governments to intercept or withhold funds allocated to local government councils. The court, in a decision delivered by Justice Emmanuel Agim, emphasized that Section 162(3) of the 1999 Constitution affirming the financial autonomy and independence of the 774 Local Government Areas (LGAs) (Kingsley, 2024).

The Supreme Court's ruling affirmed that local governments have the right to receive their allocations directly from the Federation Account, thereby reinforcing the principles of local government autonomy, fiscal decentralization, and grassroots governance (Abadan, 2023). The federal government's renewed emphasis on local government autonomy arises amid widespread concerns regarding the management of local government funds by certain state governments, with reports alleging misappropriation of allocations and the consequent undermining of service delivery at the grassroots level.

Prior to this landmark ruling, states and local government areas operated a joint account under Section 162(6) of the 1999 Constitution, with states managing funds on behalf of local governments, awarding contracts without their input, and overseeing payments. This arrangement frequently resulted in inefficiencies, delayed salaries for local government staff, and neglect of essential services such as healthcare, roads, electricity, potable water, security, and education (Abubakar & Afolabi, 2022). These challenges have severely undermined good governance

and best practices, highlighting the urgent need for corrective measures.

Following this historic judgment, it is now unconstitutional for any state government to receive, withhold, or spend funds designated for local government areas. The learned jurist affirmed this ruling, ensuring the independence of local government administration in Nigeria. Henceforth, local governments will receive their allocations directly from the Federation Account, with each of the 774 local government accounts jointly signed by the local government chairman and the director of administration and finance, thereby guaranteeing financial autonomy (Ajim, 2024).

Following the landmark judgment, the federal government directed all 36 states to establish and operate dedicated bank accounts with the Central Bank of Nigeria (CBN) for each of their 774 local government areas. This measure aligns with ongoing efforts to implement full local government autonomy at the grassroots level and promote fiscal decentralization in Nigeria (Kingsley, 2024).

Despite the importance of the landmark judgment, its implementation has encountered significant challenges. Even a year later, state governors continue to control the allocation of funds intended for local governments. Additionally, with governors overseeing local government elections, councils remain firmly under their influence, making true autonomy and fiscal decentralization largely unattainable (Akinwale, 2021).

### **The Concept of Fiscal Decentralization**

Fiscal decentralization refers to the transfer of fiscal powers such as revenue collection and expenditure decisions from the central government to lower-level subnational governments. Its goal is to enhance public sector efficiency, ensure greater responsiveness to local needs, and improve transparency in service delivery. Fiscal decentralization rests on key pillars, including expenditure assignment, which defines the functions and responsibilities of subnational governments, and revenue assignment, which determines their authority to generate funds and manage intergovernmental transfers (Rondinelli et al., 2018).

The flow of financial resources from the central to local levels is intended to promote equity and fund local services. As previously noted, local government autonomy entails granting local governments the independence to manage their internal affairs. In Nigeria, however, local governments cannot effectively exercise this autonomy if revenues are not properly decentralized to reach the grassroots level (Agbo, 2019).

## **Key Features of Fiscal Decentralization and Local Government Autonomy**

### **• Nature of Transfers**

These are financial transfers from a higher level of government to a lower one, made without any direct exchange of goods or services. At this level, local governments receive funds that are legally mandated and due to them according to established norms. The primary purpose is to empower local governments in the practice of governance (The White House, 2024). These transfers are intended to support local public spending, allowing local governments to deliver essential services such as infrastructure, education, and healthcare. By doing so, they help bridge governance gaps, with their benefits directly impacting the residents of the local jurisdiction.

### **• Expenditure Assignment**

Expenditure assignment specifies which spending responsibilities are delegated to local governments, including services such as infrastructure, healthcare, and education areas often best managed at the local level due to regional needs. It promotes prudent use of funds and ensures that local resources are allocated effectively, emphasizing careful planning over wastefulness or self-interest in governance (Aisha et al, 2025).

### **• Revenue Assignment**

Revenue assignment identifies the sources of funds available to subnational governments, including local taxes, user fees, and shared national taxes. This arrangement ensures that revenue generation is coordinated across federal (Obisanya & Hassan, 2022).

### **• Intergovernmental Transfers**

Intergovernmental transfers are financial allocations from central to subnational governments within a decentralized fiscal system, allowing local governments to fund services such as education and policing despite differences in revenue-generating capacity. These transfers are a key component of fiscal decentralization and can be either unconditional (discretionary), providing local governments with flexibility, or conditional (earmarked), designated for specific purposes to ensure both equity and the funding of essential services (Adeyemo, 2005).

## **Roles in Local Government Autonomy and Fiscal Decentralization in Nigeria**

Fiscal decentralization in Nigeria aims to strengthen local governments by granting them:

### **Reduce Disparities**

Fiscal decentralization can address imbalances in local revenue-generating capacity, ensuring that all

subnational governments can provide a satisfactory level of services regardless of their economic base. In Nigeria, it would enable local governments to function effectively, generate their own resources, and promote development within their communities (Rondinelli et al., 2018).

### **Support Local Responsiveness**

Fiscal decentralization allows local authorities, who have a better understanding of community needs and priorities, to allocate resources more efficiently for public services. For example, transfers from the national government to regional or local governments can support policing, education, and other critical local development initiatives. In Nigeria, this system can help address ongoing security challenges, as local governments and communities are more familiar with terrains and forested areas that often serve as criminal hideouts. By leveraging local knowledge, fiscal decentralization enhances intelligence gathering and strengthens public safety (Abadan, 2023).

## **Goals of Local Government Autonomy and Fiscal Decentralization in Nigeria**

The essence of local government autonomy and fiscal decentralization is aimed at ensuring the following:

### **Improved Service Delivery**

The primary purpose of the local government system is to bring governance closer to the people. Achieving this goal requires empowering local governments to deliver services that reflect the specific needs and preferences of their communities. Having government operate at the local level fosters human and infrastructural development and encourages active citizen participation. Addressing the developmental needs of rural populations ensures they share similar benefits with urban residents within the state (Yahaya, 2019).

### **Increased Efficiency**

Local governments, with their detailed knowledge of local conditions, are better positioned to allocate resources efficiently. Being the tier of government closest to the community, they have first-hand insight into societal needs, enabling a bottom-up (Uzochukwu, 2023).

### **Enhanced Accountability and Transparency**

In Nigeria, local governments can enhance accountability to their constituents by gaining direct control over service delivery and revenue generation. This transparency enables community members to track the monthly inflow of funds into their local government and monitor how these resources are managed and utilized (Wale, 2022).

### **Greater Political Stability**

In some contexts, decentralization can promote political stability and reinforce nationhood. Stability



arises when societal needs are met and citizens are actively involved in governance. By enabling citizens to achieve their goals, decentralization fosters patriotism and loyalty to the state, contributing to effective nation-building (Watts, 2008).

### **Merits of Local Government Autonomy and Fiscal Decentralization in Nigeria**

#### **Responsive and Inclusive Governance**

When properly implemented and monitored, financial decentralization and local government autonomy can create governance structures that encourage good governance and drive national development. As the third tier of government in Nigeria, local governments would be able to perform effectively, rather than remaining, under the current system, susceptible to corruption and undue control by state governments (Yahaya, 2019).

- **Transparency and Accountability**

It promotes transparency and accountability in addressing grassroots needs, reinforces democratic principles, and strengthens public trust. Local government autonomy and fiscal decentralization facilitate local participation in decision-making, planning, and implementation, fostering an environment of openness and accountability at the local level. Consequently, empowering local governments is a critical step in Nigeria's fight against corruption (Yahaya & Eze, 2022).

- **Civic Engagement**

It fosters participatory governance by encouraging civic engagement and responsibility. In a democratic system, active citizen involvement supports societal growth, progress, and development, contributing to a stable and smoothly functioning government. Local government serves as the foundational platform for reflecting local interests, activities, and aspirations, creating a balanced system that ensures people are actively involved in governance (Wale, 2022).

- **Efficient Resource Allocation**

Local government autonomy and fiscal decentralization enhance efficient resource allocation by reducing waste through closer oversight. Financially independent local councils can prioritize local projects and development in Nigeria, helping to prevent misappropriation as resources are used to meet the specific needs of the community. In this way, the principles of public choice theory are effectively applied (Yahaya, 2019).

- **Self-sufficiency**

It fosters self-sufficiency and financial autonomy at the grassroots level, thereby strengthening local economies. No nation can achieve meaningful progress without good governance, which entails the integration of local autonomy and fiscal management across federal, state, and local levels. When leaders uphold the principles of good governance, it generates positive outcomes for

national development. It is a collective responsibility to demand accountability, and implementing fiscal decentralization at the local government level in Nigeria is essential for achieving this success (Aisha et al., 2025).

### **Challenges of Local Government Autonomy and Fiscal Decentralization in Nigeria**

The challenges facing local government autonomy and fiscal decentralization in Nigeria are multifaceted, encompassing legal, political, economic, and institutional aspects. The key challenges can be summarized as follows:

- **Finance**

Despite the increase in total funds available to local governments in Nigeria since the early 1990s including a substantial 80% financial contribution from the federal government in 1999 aimed primarily at addressing rural needs their economic and financial capacity remains weak relative to the development programs they are expected to implement (Ajayi, 2021). The misuse and misappropriation of funds by local councils is closely tied to the existing system. Through the State Joint Local Government Account mechanism, state governments legally mandated to fund local councils have instead exploited this arrangement to keep local governments' hostage, effectively reducing them to extensions of the state (Cornelius, 2022).

- **Constitutional and Legal Constraints**

State governments continue to act as intermediaries in transferring funds from the Federation Account to local government areas. Despite the Supreme Court ruling, the National Assembly has yet to amend the constitutional provisions supporting the State Joint Local Government Account. As a result, the implementation of the judgment remains largely incomplete (Ibrahim, 2020). In reality, both federal and state institutions seem to lack the political will to enforce the Supreme Court's judgment effectively. Furthermore, the Local Government Service Commission (LGSC), though not constitutionally mandated under the 1999 Constitution, has contributed to the further marginalization of local governments, making its influence a critical factor to consider (Abdull, 2022).

- **Political Interference**

State interference in local governments, as noted by Agbo (2019), often manifests in hiring practices driven by personal and parochial interests, leading to issues of redundancy. Nigeria Health Watch (2023), observes that when administrative institutions become politicized, corruption is more likely, and key positions are filled based on subjective or personal interests rather than merit. Faguet (2021), further defines this interference as the influence exerted by politicians or higher tiers of government on local administration,

manipulating internal affairs to undermine the effectiveness of the system.

According to Ajayi (2021), it is evident that local governments in Nigeria face varying levels of interference from politicians, state governments, and other political actors. This occurs when politicians dominate decision-making processes related to staffing, planning, organizing, directing, coordinating, and reporting including activities such as planning and budgeting within the public administration sphere (Aisha et al., 2025).

## Conclusion

The quest for local government autonomy and fiscal decentralization in Nigeria is crucial for advancing democratic governance and fostering inclusive development. Although the constitution recognizes local governments as the third tier of government, their effectiveness is frequently compromised by excessive state control, limited fiscal capacity, and political interference. These limitations have hindered local governments' ability to address the specific developmental needs of their communities. Enhancing fiscal decentralization through clearer revenue allocation frameworks, improved internally generated revenue systems, and accountable intergovernmental transfers would enable local governments to play a more significant role in service delivery. However, autonomy must be coupled with strong oversight mechanisms to ensure transparency, prevent mismanagement, and encourage citizen participation in governance.

Ultimately, a truly decentralized system in which local governments possess both fiscal independence and institutional autonomy could improve governance efficiency, foster grassroots participation, and accelerate socio-economic development throughout Nigeria. Achieving this goal requires not only constitutional and legal reforms but also a sustained political commitment to align the federal system with the principle of genuine subsidiarity.

The debate on local government autonomy and fiscal decentralization in Nigeria highlights the ongoing tension between constitutional provisions and political practice. Although the 1999 Constitution formally recognizes local governments as the third tier of government, their autonomy is still significantly constrained by state interference, particularly through joint account mechanisms and state oversight of local fiscal operations. This structural imbalance has created a paradox: while local governments are expected to drive grassroots development, their ability to fulfill this role is consistently limited by systemic constraints.

From a theoretical standpoint, fiscal federalism posits that decentralization improves allocative efficiency, accountability, and responsiveness by bringing

government closer to the people. However, Nigeria's experience highlights the difficulties of realizing these benefits in a context characterized by elite capture, weak institutions, and widespread rent-seeking. Evidence from comparative federal systems shows that when local autonomy is paired with effective fiscal decentralization and strong accountability mechanisms, it can encourage innovation and enhance service delivery. In Nigeria, however, decentralization has often been "decentralization in form but centralization in practice."

The future of local governance in Nigeria depends on aligning constitutional guarantees of autonomy with institutional reforms that protect local councils from state interference while promoting fiscal discipline. Improving intergovernmental transfers, diversifying local revenue streams, and institutionalizing participatory budgeting can strengthen both fiscal capacity and democratic legitimacy. Ultimately, achieving sustainable development at the grassroots level requires not only legal and fiscal reforms but also a shift in political culture toward genuine subsidiarity and citizen-centered governance.

## Recommendations

- A constitutional review that ensures clearly defined local government autonomy and fiscal decentralization is essential. To fully realize the principles of democratic federalism and give concrete effect to the concept of three-tier federalism, local governments should be explicitly and unambiguously recognized in the general provisions of Chapter I, Part I, Sub-section 2 of the 1999 Constitution of the Federal Republic of Nigeria. Accordingly, local governments should be empowered to generate independent revenue through enhanced taxation and intergovernmental transfers.
- Abolishing the Joint Account would grant local government councils full financial independence and political autonomy. It would also make them responsible for the efficient management of schools, healthcare, social services, rural development, and other local functions. However, each council must be accountable for every kobo spent. Statutory allocations from the Federation Account intended for local governments should be transferred directly to them in accordance with the Supreme Court ruling.
- The federal system comprises three tiers of government, each with distinct responsibilities and powers; therefore, the constitutional provisions defining these powers must be strictly respected by politicians and state actors as it will help to stamp

out political interference at the local government. Citizens and civil society organizations should serve as vigilant watchdogs whenever sections of the constitution are violated by contemporary politicians, thereby promoting effective social accountability and governance.

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## Corporate Ownership and Firms' Value in Nigeria: Evidence From Non-Financial Firms

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### **Abstract**

*This study examined the connection between corporate ownership and the valuation of companies listed on the Nigeria Exchange Group, with a focus on Tobin's Q. The independent variables included block institutional ownership, first largest ownership, block family ownership, and block government ownership. Data from ten years (2013 to 2022) was analysed using fixed-effect regression models, correlation analysis, and descriptive statistics on STATA 13. The results revealed that block government ownership has negative effect on firm value, while block institutional ownership and first largest ownership were positively associated with firm value. In contrast, block family ownership did not show a significant impact on firm value. The findings suggested that the corporate ownership, especially institutional and first largest ownership, can enhance firm performance by addressing agency issues and aligning managerial incentives with shareholder interests. Moreover, excessive government ownership appeared to impede firm performance due to potential political interference and inefficiencies. This study contributes to the ongoing discussion on ownership structure's role in corporate governance and firm value, offering valuable insights for policymakers, investors, and corporate managers in emerging markets. The implications highlight the importance of diversified ownership for sustainable firm performance and the improvement of monitoring and control mechanisms.*

**Keywords:** *Corporate Ownership, Block, Institution, Family, Government, Tobin's Q*

### **Introduction**

Despite the numerous studies worldwide, the connection between ownership structure and firm performance is unresolved. Drawing significant interest from corporate governance, Ibekwe (2021), opined that the separation of ownership and control enables managers to pursue objectives that may conflict with other stakeholders, potentially leading to losses. Ownership structures are influenced by well-developed capital markets with high liquidity and corporate philosophies aimed at maximizing shareholder wealth (Herrigel, 2008). Cheng and Wang (2021) argued that there is usually an agency problems in corporate governance especially where corporate ownership is diffuse. This mitigates the principal-agent dilemma by raising the cost of managerial actions and in the long-run jeopardized the firm's existence. Gilson, and Milhaupt (2022) observed that one of the ways of resolving this agency conflict is through institutional monitoring mechanisms, which would reduce any negative impact of expenses overindulgence on the firm's value.

The structure of a company significantly affects its performance. Mehboob, Tahir, and Hussain, (2015) argued that whether a firm is institutionally concentrated or family concentrated, ownership patterns plays a crucial role in determining the business environment. Furthermore, ownership influences how managers behave and the benefits received by important stakeholders (Ahmed, Ali-Shah, & Bhatti, 2020). Herein, these ownership variables as tied to block institutional ownership, first largest ownership, block family ownership, and block government ownership on a firm's value. Few studies found a positive relationship between ownership concentration and firm value. Conceivably, some studies suggests that family-owned businesses tend to do well, while firms with high levels of managerial ownership may struggle to find success. Others opined that a high level of divorce of ownership concentration reduces the managerial incentive arrangement, and thus a negative relationship. This further buttressed that a high level of ownership concentration will only strengthen the manager's insider control motive and discourage the use of resources, impose high agency costs, and lead to

sub-optimal valuation of firms. Okolo, Irem, and Ugwuoke, (2019) argued that either Management, staff and society as a whole does not know much about value for money audit and how efficient it is in fraud controls and misuse

The types of ownership concentration generally depicts the relative equity stake of different groups influencing the management of the company with the interest of such a group being paramount (Osterwalder, Pigneur, Smith & Etienne, 2020). Ogbada, Useh, and Udoanyang (2021) divided ownership structure into two categories: ownership concentration, which is made up of the share percent of the top five owners, and ownership structure, which is made up of the share percent of the state, legal or institution, and domestic individual holders. As a prerequisite to the role of control, it is commonly agreed that family-owned firms usually have some long-run goals which could have a significant impact on the value of the firm. Camisón-Zornoza, Forés-Julián, Puig-Denia, and Camisón-Haba (2020), argued that the participation of family members can impact the performance and three specific frameworks that support the authority to make decisions and control capacity in family businesses are the financial structure, the leadership and operational structure of the company, and the governance system of the family itself. Contrarily, a country with weak legal protection, higher transparency and dividend payment can thus enhance the firm's ability to cope, particularly concerning political and institutional pressures, and can reduce the tunneling interest within family firms (Sadler-Smith & Cojuharenco, 2021).

Government interest in a firm either economic or financial is a general practice that extends to the corporate sector. According to Oyejide and Soyibo (2001), ownership interest of government presence in quoted firms are noticeable in sectors like Building Materials (15%), Insurance (15%), Petroleum Marketing (17%), Banking and Finance (21%), Automobile and Tyre (30%) and Agriculture (32%), with some arrayed for privatisation through Public-private partnership. The extent of government ownership regardless of the level of control has strong implications.

The level of control involves participation of the board of directors, influence on technical or economic goals, or influence in appointing and removing the managers of the firm. The government may thus become a co-investor and sponsor of equity investments. It may provide the firms an opportunities to invest in additional resources, access to new markets and new public and private contracts. Nsoke, Okolo, and Ofoegbu, (2021) noted that as a matter of urgency in Nigeria, the government made it as a must for all registered enterprises to undergo mandatory skills

acquisition training before accessing credits and other associated benefits from the government.

The debate between government (public) and non-government (private) organizations has left many questions unanswered (Darnihamedani & Terjesen, 2022; Nwachukwu, & Nwoha, 2023). Sun, Tong and Tong (2002) noted that without government involvement, organizations may miss out on the political support and business connections that can greatly impact their performance. These connections and support are crucial for organizations to thrive. Smith, (2020); Al-Issa, (2021) and Hassanein, Marzouk, and Azzam, (2022) pointed out the problem of associated with government ownership, arguing that politicians may prioritize gaining profit over efficiency and use the money to suppress opposition from their supporters.

On the other hand, critics argue that government control over investment, supervision, and compensation, as well as the possibility of political punishment, allows the state to provide an alternative form of services through ownership and thereby transferring firm's resources (Singh & Chen, 2018). Jensen and Meckling (1976) maintained that when shareholders and management attends a publicly traded corporation, there are conflicts of interest that favour the allocation of resources of the enterprise's consumable assets rather than the desired assets. The asymmetric risk, differing investment opportunities or cash flow schedules of the firm, and differences in taxes depend on the rationality of the particular ownership structure, which can be particularly prevalent in firms with block ownership (Camisón-Zornoza, *et al.*, 2020 & Schmalz, 2021). According to Schillemans and Bjurström (2020), expected relationship between block government ownership and firm value and the appropriate choice of the corporate governance mechanism depends on the main theory of corporate governance, namely the agency theory.

This bridges a potential conflict of interest arising among these groups. Trisnadewi and Amlayasa (2020) and Din, Arshad-Khan, Khan, and Khan (2022) maintained that corporate ownership does not only defines the control and residual rights, but it also gives the owner a right to profits in the form of dividend income and an increase in the value of shares. Undoubtedly, corporate ownership also influences the firm's strategy behaviour and overall firm performance. Battilana, Obloj, Pache, and Sengul (2022) noted that most times, the attention of shareholders is shifted to the maximization of wealth through effective and efficient operations. These goals may, as a result, be in conflicts due to agency problems. The firm's performance is largely judged in terms of its financial and stock performance. This arises because dividend income can directly accrue to the shareholders, while

an increase in stock values constitutes a capital appreciation for the shareholders. In the Nigerian capital market, institutional ownership has been considered to have some positive influences on firm value (Ogabo, Ogar, & Nuipoko, 2021). According to Sinebe and Jeroh (2023), institutional investors affect the entire functioning of relevant financial markets to the extent that listed firms are also involved in the short and long-run because institutional concentration have influence on corporate decision-making processes. The distinction between gains for large institutional shareholders for the cost of a takeover may be of far less relevance in Nigeria than the control benefits offered by many publicly quoted firms. Chen, Liu, and Yan (2021), argued that in China, the huge presences of institution investors revolve around funds and insurance and holds more than 31% of the total value of listed companies.

Family-owned businesses are businesses controlled by members of the family and firms have many features in common with other firms. Corporate governance issues are central in the separation of managerial efforts from corporate control and are usually not associated with family-owned and managed businesses. The difference in the objectives of family-owned businesses and professionally managed firms is usually not given recognition (Buchanan, Martikainen, & Nikkinen, 2023). Family firms tend to prioritize long-term sustainability and generational wealth, while professionally managed firms focus on short-term profitability. Furthermore, family-owned firms often have a strong sense of loyalty and commitment to their employees and local communities. This can result in higher employee satisfaction and retention rates, contributing to the overall success of the firm (Biel & Ślusarczyk, 2022).

In contrast, non-family firms may prioritize short-term financial gains over long-term sustainability (Castellaro, 2023). Despite the differences, agency problems are present and ordinarily should not be seen as more prevalent in family-owned firms. However, researches have shown that family-owned firms may have unique ways of addressing these agency problems. The block family ownership variable has an important relationship with mechanism ownership structures that receive less attention. It gives families, whose direct holdings are relatively small, significant influence over the firm (Arteaga & Escribá-Esteve 2021). Because strong family ties exist. A family with a small block holding and a small pay package will have greater influence and control over a firm than an executive manager with large shareholdings and pay packages.

### Review of Related Literature

Ogbada, et al. (2021) conducted a study on the connection between ownership structure and corporate

performance of 15 companies listed on the Nigerian Stock Exchange from 2016 to 2020. The study utilized an ex-post facto research design and discovered that the share of the largest shareholder ratio did not have a statistically significant impact on Tobin Q. Therefore, it was suggested that companies in Nigeria should consider adopting a diffused ownership structure rather than a concentrated one. Additionally, it was highlighted that firms with highly concentrated ownership are often challenging to monitor and control. The investigation of corporate governance as a potential predictor of financial statement fraud among listed Nigerian non-financial enterprises was conducted by Sinebe, et al. (2023). It looked at secondary data from 2012 to 2021; a period of ten years. Using an ex-post facto research approach, the findings showed that institutional ownership had no discernible impact on the financial statement fraud committed by listed non-financial companies in Nigeria. The study recommended that rather than putting too much attention on the structure, future revisions to the current governance standards for Nigerian firms should concentrate more on creating a comprehensive strategy to prevent financial statement fraud.

The impact of insider ownership on stock price synchrony was investigated by Cheng, *et al.* (2021). The management entrenchment effect predominates in nations where investor protection is inadequate, according to the study. Increasing ownership is accompanied by an increasing rate of synchronization. The management entrenchment impact, however, only becomes more significant than the incentive alignment effect in nations with robust investor protections when controlling ownership first rises. A more transparent firm results from the incentive alignment effect becoming greater and the net effect being reversed as controlling ownership increases.

Biel, et al. (2022) assessed the degree to which specific management techniques and instruments are employed in Polish family enterprises and investigated their influence on the efficiency of accomplishing different goals. 182 managers of Polish family firms participated in a survey regarding the efficiency of goal attainment and the tools and techniques employed in management. According to the study's findings, all three groups show that using these strategies has a limited impact on how successfully the objectives are completed. Enhancing family business managers' understanding of professional management techniques and resources is another fundamental goal of the larger family business environment.

Camisón-Zornoza et al. (2020) examined the asymmetric effects of family engagement on dynamic skills using a sample of 748 family-run businesses from the Spanish tourism sector. The result shown that a tightly controlled ownership structure with a sizable

amount of family money is invested in the business has unfavorable effects. From the findings, it asserted that the board of directors are not important structural components. The presence of an efficient family board and the use of family management tools is the most potent structural element that promotes the growth of innovation capabilities. These safeguards aid in lessening the detrimental consequences of an ownership and management structure controlled by a family.

Buchanan and colleagues (2023) conducted a study on how family competitiveness and owner engagement impact the performance of small and medium-sized enterprises (SMEs). They used random sampling to choose 1,137 Finnish SMEs that were not listed. The results of the study showed that businesses managed and run by family members have a stronger effect on performance compared to other types of corporate structures. Additionally, the research suggested that non-family businesses with actively engaged owners have similar performance to family-owned businesses, indicating that owner involvement in non-family businesses can contribute to their performance.

Din and colleagues (2022) researched how ownership structure affects a company's financial performance. They analyzed data from 146 manufacturing firms listed on the Pakistan Stock Exchange over 10 years. The study looked at institutional shareholdings, insider shareholdings, foreign shareholders, and government shareholdings, as well as return on assets, return on equity, market-to-book ratio, and Tobin's Q as the indicator of financial performance. To address potential issues with data, the researchers used the Generalized Method of Moments (GMM). Their results showed that institutional ownership had a notably positive impact on performance. They also found that insider ownership and government shareholding were significantly related to Tobin's Q.

Sun, et al. (2002) conducted a study on the correlation between government ownership and businesses in China. The study found that regardless of whether the government ownership was by a state or legal entity, it has a positive effect on partially privatized state-owned enterprises. Additionally, the study showed that this relationship was not linear and had a U-shape. The researchers also suggested that excessive government control is detrimental to enterprises, while minimal government ownership may not be beneficial either.

## Theoretical Framework

### Agency Theory

Agency theory was propounded in 1976 by Jensen and Meckling. The study argues that the separation of ownership from control is, in large part, due to a conflicts between the owner's interests and the manager's interests. It assumes that the interests of the owners and the interests of the managers are in opposition. One of the fundamental problems addressed by this theory is in the determination of ways that shareholders can induce managers to act in the best interest of the firm. But often, the managers operate to satisfy personalised interests. Usually, the agency theory assumes a two-sided relationship between the owners of the firm (principal) and management (agent), where the agents are better informed and exercise more discretion than the principals (Sadeghi, Banerjee, Ray, Bergen, & Dutta, 2022). These agents can exploit their privileged position. Based on these underpinnings, agency theory emphasizes aligning the interests of the principal with those of the agent.

Agency problems are self-inflicted because managers decide what to do with a firm's financial resources. The alignment between the owners and managers is referred to as the agency cost. A firm's financial performance is dependent on the reasons managers make decisions because the existing confluence between ownership and management interest will motivate managers to adopt decisions recognized as receiving oversight (Aksoy, Yilmaz, Tatoglu, & Basar, 2020; Din, *et al.*, 2022). These decisions will increase the firm's value. Conversely, when management decisions are recognized as diverging from the preferred oversight, it will decrease the firm's value.

### Research Methods

Ex-post facto research design was employed since the data were historical and cannot be manipulated. The population consists of 53 Non-financial companies listed on the floor the Nigeria Exchange Group for a period of ten (10) years (2013 to 2022). In describing the variables, the study used the Descriptive statistics while the correlation analysis was adopted in ascertaining the relationships among variables. Also, Ordinary Least Squares (OLS), and some diagnostic tests were conducted to ensure the validity of the model. The econometric model is written as:

$$TOB-Q_i = \beta_0 + \beta_1 BIO_i + \beta_2 FLO_i + \beta_3 BFO_i + \beta_4 BGO_i + \beta_5 FS_i + \epsilon_i \quad (ii)$$

Where;

TOB-Q = Tobin-Q, BIO=Block Institutional Ownership, FLO = First Largest Ownership, BFO =Block Family Ownership, BGO = Block Government Ownership, FS = Firm size,  $\epsilon$  is the error term,  $\beta_0$  is the intercept term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  and  $\beta_5$  are the coefficients for the respective variables.



### Measurement of Variables

| Proxies                           | Denotation | Measurement                                                                                                        | Reference                             |
|-----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Independent Variables of Interest |            |                                                                                                                    |                                       |
| Block Institutional Ownership     | BIO        | All of the block's institutional shareholders with 5% or more of the total shares (%) owned                        | Sinebe, et al. (2023)                 |
| First Largest Ownership           | FLO        | The percentage of ownership that the primary majority shareholder holds for the company's largest block of shares. | Ogbada, <i>et al.</i> (2021).         |
| Block Family Ownership            | BFO        | Allocating the company's share to individuals or groups holding a minimum of 5% ownership in the company.          | Camisón-Zornoza, <i>et al.</i> (2020) |
| Block Government Ownership        | BGO        | The majority ownership of shares is held by government block shareholders who possess at least 5% of the shares.   | Sun, <i>et al.</i> (2002)             |
| Dependent Variable                |            |                                                                                                                    |                                       |
| Tobin-Q                           | TOB-Q      | Market capitalization plus total liabilities minus cash divided by total asset                                     | Apochi, <i>et al.</i> (2022).         |
| Moderator                         |            |                                                                                                                    |                                       |
| Firm Size                         | FS         | natural log of total asset                                                                                         | Chen, et al (2021) &                  |

Source: Author's Compilation, 2024.

### Results

#### Descriptive statistics

Table 1: Summary of Descriptive statistics

| STATS | TOB-Q    | BIO      | FLO      | BFO      | BGO      | FSI      |
|-------|----------|----------|----------|----------|----------|----------|
| MEAN  | 1.374075 | 50.9717  | 40.86226 | 5.867925 | .490566  | 7.036439 |
| P50   | .97      | 57       | 46       | 0        | 0        | 6.93915  |
| MIN   | -31      | 0        | 0        | 0        | 0        | 5.2394   |
| MAX   | 9.29     | 98       | 84       | 73       | 14       | 9.2409   |
| SD    | 1.250962 | 26.29355 | 22.01627 | 13.38783 | 2.189705 | .798704  |
| N     | 530      | 530      | 530      | 530      | 530      | 530      |

Source: Author's computation via STATA 13.

The descriptive statistics in Table 1 revealed that there are 530 observations and the TOB-Q has a mean value of 1.374075; which exceeds the median 0.97. This narrates how the distribution is a right-skewed. Also, the minimum value, maximum value and Standard deviation values are -0.31, 9.29, and 1.250962 respectively. In the case of BIO, the mean value of 50.9717, is lower than the median of about 57. The buttressed the left-skewed distribution. It maintained, 0 and 98, as minimum and maximum values while the standard deviation stood at 26.29355. The FLO had a mean of 40.86226, relatively lower when compared to the median of 46. This by implication asserts that a left

skewed distribution. A critical observation into the minimum and maximum values shows 0, and 84, having a broad spectrum and observed a standard deviation of 22.01627. The BFO maintained a mean and median values of 5.867925, and 0, suggesting a right-skewed. Its maximum value was 73, and the standard deviation 13.38783. The outcome of BGO had a mean 0.490566, and the median of 0, symbolising right-skewed distribution with many zero values. The maximum value is 14, and the standard deviation from the mean was 2.189705. Lastly, Firm size (FSI) has a mean of 7.036439 which is relatively more than the median of 6.93915. it depicts that FSI is right-skewed.

## Correlation Analysis

**Table 2: Summary of Correlation analysis**

|       | TOB-Q   | BIO     | FLO     | BFO     | BGO     | FSI    |
|-------|---------|---------|---------|---------|---------|--------|
| TOB-Q | 1.0000  |         |         |         |         |        |
| BIO   | 0.1898  | 1.0000  |         |         |         |        |
| FLO   | 0.1713  | 0.7598  | 1.0000  |         |         |        |
| BFO   | -0.0943 | -0.5167 | -0.2631 | 1.0000  |         |        |
| BGO   | -0.0552 | 0.1905  | 0.1752  | -0.0900 | 1.0000  |        |
| FSI   | 0.0122  | 0.1364  | 0.0452  | -0.0069 | -0.1303 | 1.0000 |

Source: Author's computation via STATA 13.

Table 2, discloses the correlation matrix existing among variables of study. A critical look at the outcome reveals that TOB-Q (dependent variable) has a weak positive with BIO, a weak positive association with FLO, and also weak and positive with FSI as their

values are 0.1898, 0.1713 and 0.0122 respectively. Furthermore, TOB-Q has a weak and negative association with both BFO and BGO as their values stood for -0.0945, and -0.0552.

## Result for Multicollinearity Test

**Table 3: VIF Result Test**

| VARIABLE | BIO      | FLO      | BFO      | BGO      | FSI      | MEAN VIF |
|----------|----------|----------|----------|----------|----------|----------|
| VIF      | 3.33     | 2.53     | 1.46     | 1.07     | 1.06     | 1.89     |
| 1/VIF    | 0.300641 | 0.394488 | 0.686303 | 0.937557 | 0.939703 |          |

Source: Author's computation via STATA 13.

In observing the presence or absence of multicollinearity among variables, the study employed the Variance Inflation Factor (VIF) analysis as shown in Table 3. Observably, none of the mean exceed (>) 10

as stipulated in the VIF rule. It shows no presence of multicollinearity. The overall mean VIF is well suited below 5.

## Breusch and Pagan Lagrangian Multiplier test

**Table 4: Other Diagnostic Tests**

| Breusch and Pagan Lagrangian Multiplier test |                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Decision rule                                | Accept alternative hypothesis (HA) if the p-value is significant, and reject the null hypothesis (H0) if the P-value is not significant.         |
| Result                                       | chibar2(01) = 0.00, Prob > chibar2 = 1.0000                                                                                                      |
| Hausman Test                                 |                                                                                                                                                  |
| Decision rule                                | When p-value becomes significant, the study will reject the null (H0) hypothesis and by implication would accept the alternative hypothesis (HA) |
| Result                                       | (chi2): 179.21, Prob>chi2 = 0.0000                                                                                                               |

Source: Author's computation via STATA 13.

A critical look at the diagnostic tests in Table 4, showed that when the p-value records a figure such as 0.0000, against the 5% level of significance; it suggests strong evidence against the null hypothesis. A systematic difference between the estimated coefficients from the fixed-effects (FE) and random-effects (RE) models has been identified. The Hausman test is used to determine if there is a systematic difference between the coefficients from the FE and RE models. If the null hypothesis is rejected, the fixed-effects model is preferred over the random-effects

model. The Breusch and Pagan Lagrangian multiplier test is used to test the null hypothesis that the variance of the individual-specific random effects (u) in a random-effects model could be zero. In this case, the test statistic (chibar2) is 0.00 and the p-value (Prob > chibar2) is 1.0000, indicating that there is no need for random effects in the model as the probability value is not significant. Therefore, the null hypothesis is supported, suggesting that the fixed-effects model is more appropriate.

## Hypotheses Testing

**Table 5: Summary of Fixed Effect regression Result**

|          | FIRM VALUE |          |       |        |
|----------|------------|----------|-------|--------|
| TOB-Q    | COEF.      | STD.ERR. | t     | P> t   |
| BIO      | .0094625   | .0036731 | 2.58  | 0.010  |
| FLO      | .0031749   | .0038007 | 0.84  | 0.404  |
| BFO      | .0003503   | .0047393 | 0.07  | 0.941  |
| BGO      | -.0656552  | .0248596 | -2.64 | 0.009  |
| FSI      | -.0229902  | .067909  | -0.34 | 0.735  |
| _CONS    | .9539433   | .4801202 | 1.99  | 0.047  |
| OBS      |            |          |       | 530    |
| F(5,515) |            |          |       | 2.96   |
| PROB > F |            |          |       | 0.0019 |

Source: Author's computation via STATA 13.

Table 5, shows the result from the fixed-effects regression model which is primarily used to show relationship among variables. The result revealed that BIO coefficient Positive of 0.0094625, and the p-value of 0.010 is significant at 5% confidence level. This in effect means that a unit increase in BIO, could possibly result in an increase in TOB-Q. The result for FLO has a positive coefficient of 0.0031749 but not significant with a high P-value of 0.404, at 0.05. In the event to increase FLO, may not automatically lead to any meaningful increase in TOB-Q. The result further shows that BFO has a positive coefficient 0.0003503, but not significant due to the huge value of P-value of 0.941, above the threshold of 0.05. This result suggests that an increase in BFO will not bring about a significant increase in TOB-Q. As further observed the outcome of BGO maintained a negative coefficient of -.0656552, but a significant P-value of 0.009, when compared to the 0.05 level of confidence. It depicts that an attempt to increase in BGO will bring a unit decrease in TOB-Q since they move in an opposite direction. The result also reveals that FSI has a negative coefficient of -.0229902, and insignificant with a value of 0.735 which is greater than the 0.05 level. An increase in FSI may likely result to decrease in TOB-Q. However, the Constant (\_cons) intercept is statistically significant with p-value = 0.047, although very close to 0.05 level. Lastly, the result discloses that FSI has negative and insufficient impact on firm's value. This explains the fact that firm size has not been able to control the variable of performance. An attempt to increase firm size would result to firm having losses due to committed finance in services the different stakes.

## Discussion of Results

Corporate ownership and firms' value is an interesting topical issue due to recent happenings in the business world such as liquidation and collapse and mergers and acquisition. Literature have had divergent view about

the outcome of corporate ownership on firm's value. Evident in this investigation, the findings from the examination indicated that Block Institutional Ownership (BIO) has a beneficial, substantial correlation with the measure of a company's worth. These results indicated that increasing BIO will ultimately lead to a positive increase in business value. These findings support the research of Din, et al (2022), which revealed that Institutional ownership has a positive and significant impact on a company's worth. Furthermore, the study showed that the First Largest Ownership (FLO) has a positive coefficient, however it is not significantly associated with the company's value. This result regarding FLO reinforces the conclusions drawn by Ogbada, et al. (2021), which indicated that First Largest Ownership does not have a noteworthy influence on a company's worth. In addition, the findings suggest that Block Family Ownership (BFO) has a positive, albeit not significant, effect on a company's worth. These results contradict that of Buchanan, et al. (2023), which showed that the number of family members actively involved in daily business operations has a significant negative relationship with firm performance. Furthermore, the result herein disclosed that Block Government Ownership (BGO) maintained a negative but significant impact on the firm's value. This finding as revealed in BGO digresses a bit from the findings of Din, et al (2022) which found that Government ownership has a Positive and significant relationship on firm's value.

## Conclusion and Recommendation

This study investigated the relationship existing between corporate ownership structures on the value of non-financial companies listed on the Nigeria Exchange Group for a period of 10 years (2013-2022). This study used ex-post facto research and various statistical methods to examine the connections between variables and understand their relationships. The results showed that Block Institutional Ownership (BIO) has a

positive influence on firm value, demonstrating the important role of institutional investors in improving firm performance. On the other hand, Block Government Ownership (BGO) was found negative impact on firm value, suggesting inefficiencies linked to government ownership. Meanwhile, First Largest Ownership (FLO) and Block Family Ownership (BFO) had positive effects on firm value, but these effects were not statistically significant, highlighting the importance of a well-balanced ownership structure. Firm Size (FSI) had a negative but insignificant impact, suggesting that firms should carefully manage their growth and operational efficiency. This study conclude that companies and policymakers should be guided in achieving an optimizing ownership structures to enhance firm performance and value.

Emanating from the above, this study recommends that companies should encourage and attract more institutional investors because its positive and significance will bring in better governance practices and strategic oversight, which can enhance firm performance and value. There should be a monitoring mechanism to act as buffer to the insignificant of first largest ownership effect on firm's value. This could be done through diversifying ownership to mitigate potential risks associated with having a dominant single shareholder. The study further recommends that family-owned businesses need to re-assess their ownership structures thoroughly. The business environment is associated with volatile environment, it is very unwise for firms to negate the involvement of professional managers and advisors to balance family influence and business performance. The presence of government should be limited because it will be more beneficial for enhancing firm value. Firms should advocate for policies that reduces governmental stakes in companies, allowing for more private sector-driven growth and efficiency. Firms should embrace an optimal size that balances economies of scale with efficient management practices. Such as the continuous appraisal of asset utilization and operational efficiency regularly.

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## Leveraging Sport Marketing to Boost Nigeria's Tourism Industry: Opportunities and Challenges

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### Abstract

*This study investigates how sport marketing contributes to the development of Nigeria's tourism industry. Despite Nigeria's vast tourism potential and growing interest in sports, the connection between both sectors remains underexplored. The problem addressed in this study is the lack of structured, data-driven strategies to link sport marketing with tourism growth. This gap has led to underutilized opportunities in regional events, international competitions, and grassroots sports that could otherwise attract tourists and drive economic gains.*

*The justification for the study lies in the urgent need to diversify Nigeria's economy and leverage non-oil sectors like tourism through innovative platforms such as sport. The objectives were to examine the role of sport marketing in promoting tourism in Nigeria and to identify the challenges limiting its effectiveness. The study adopted a qualitative approach, relying on peer-reviewed journals, academic articles, and empirical studies.*

*Findings show that sport marketing significantly supports tourism through event branding, sponsorships, and athlete-driven campaigns. However, infrastructure gaps, weak coordination, and poor digital penetration limit its full potential. The study concludes that integrated stakeholder engagement and targeted investments in digital marketing are essential. It recommends institutional reforms and capacity-building as practical steps for progress.*

**Keyword:** Infrastructure, Security, Sport Marketing, Stakeholders and Tourism Industry

### Introduction

Tourism is a recognized driver of economic growth, cultural exchange, and national image enhancement. In countries with coordinated development strategies, tourism contributes significantly to GDP and employment. In Nigeria, this sector remains underdeveloped despite abundant natural resources, cultural diversity, and sporting potential. The National Bureau of Statistics (2022) estimates tourism contributes less than 4% to GDP, indicating major structural weaknesses. Countries like South Africa have successfully integrated sport into tourism policy, but Nigeria continues to treat the two sectors in isolation. This separation weakens the potential of sport as a tool for tourism growth and economic diversification.

The tourism industry. Nigeria's tourism sector lacks visibility, structured branding, and coordinated national campaigns (Uthman & Sadiq, 2024). Annual sporting events such as the Lagos City Marathon, Okpeke Road Race, and the National Sports Festival attract athletes and participants, but their potential to attract

visitors or stimulate local economies is often lost. Beatrice and Oghenebrorien (2024) argue that sports entrepreneurship in Nigeria is growing, but its synergy with tourism has not been effectively structured. The challenge lies in weak marketing, institutional fragmentation, and low investment in sport tourism packaging. Sport marketing, when structured and implemented effectively, connects sport events with tourism promotion by attracting audiences, sponsors, and international attention.

While the academic literature on sport and tourism in Nigeria is growing, most studies treat them as separate disciplines. For example, Julius and Patrick (2024) assessed customer satisfaction in event tourism, while Ajake (2020) explored tourism strategy in Cross River State. There are also works like Adeyemo et al. (2023) which focused on localized sport tourism activities. However, none of these studies address the strategic application of sport marketing as a deliberate tool for national tourism promotion. This fragmented approach leaves a gap in understanding how sport assets athletes,

teams, events can be professionally marketed to support tourism outcomes.

This study addresses that gap by examining the practical opportunities and barriers that exist in leveraging sport marketing for tourism development in Nigeria. The issue is urgent. Nigeria is in a post-oil economy transition phase and needs non-oil revenue streams. Abubakar et al. (2020) emphasized that sport tourism could drive infrastructural development and job creation. Ibagere (2023) also highlighted the role of media and broadcasting in promoting sports events, yet policy linkage to tourism outcomes remains absent. Without a deliberate sport marketing strategy, Nigeria continues to miss out on the global tourism revenue generated through sporting events, sponsorship, and sport heritage.

The objectives of the study was to: assess how sport marketing strategies can be used to promote tourism in Nigeria and identify the major barriers hindering the integration of sport marketing into Nigeria's tourism development framework. This research used a qualitative approach, drawing data from scholarly literature. Journals, peer-reviewed articles, conference papers, and institutional reports serve as primary data sources. The review focused on current sport marketing models, tourism strategies, and policy evaluations relevant to Nigeria. The aim is to extract practical insights for policymakers, investors, and researchers seeking to improve sport-tourism integration.

## Literature Review

### Conceptual Review

#### Sport Marketing

Sport marketing refers to the strategic promotion of sport events, teams, organizations, and associated products or services to drive engagement, loyalty, and revenue. It operates on two levels: the marketing of sports themselves (e.g., competitions, athletes, teams) and the use of sports as a platform to market non-sport products or services. Globally, sport marketing has become a multi-billion-dollar industry, supported by digital innovations, sponsorships, merchandising, and broadcasting. According to Silva and Casas, (2020), this field plays a critical role in shaping the perception of sports entities and aligning them with fan bases. Additionally, Eskiler et al., (2021) emphasized that effective sport marketing requires audience understanding, message clarity, and media synergy to influence behavior and achieve brand objectives.

In Nigeria, sport marketing is still at a developmental stage. Though the country has a rich history of sporting talent and community interest, the commercialization of sports remains minimal. Many Nigerian clubs lack professional marketing departments or dedicated sponsorship structures. The Nigerian Professional Football League (NPFL), for example, suffers from

poor branding, inconsistent fan engagement, and low media value (Akarah, 2012). While there is national interest in football, basketball, athletics, and combat sports, the marketing infrastructure around these events is weak or informal. Research by Tubosun et al., (2019) found that only 30% of sport organizations in Nigeria had active sponsorship or merchandising campaigns in the last three years, with most relying on government subventions for survival.

The main challenge with sport marketing in Nigeria is the lack of strategic planning and investment. Stakeholders often see sports only from the lens of physical performance, rather than a platform for economic development. There is limited understanding among sports administrators about branding, audience analytics, or revenue models. As identified by Anifowose and Adejumo, (2020), sport managers rarely use consumer data, fan feedback, or market trends to guide promotional decisions. Similarly, Iheanacho et al., (2013) argue that most sport events in Nigeria lack commercial packaging that would make them attractive to sponsors or international media. This results in poor exposure, low turnout, and missed revenue opportunities.

Another problem is the underdeveloped relationship between media and sport marketing. Media coverage in Nigeria focuses heavily on European leagues, while local leagues and events receive minimal attention. This affects viewership, engagement, and advertiser interest. According to Akarah, (2012), over 75% of Nigerian sport content consumed online or through TV is foreign. Without strong media partnerships, sport marketing campaigns cannot achieve scale or sustainability. In addition, digital marketing one of the strongest global growth areas remains underused in Nigeria's sports scene. Only a few athletes and clubs maintain active online platforms, and most lack content strategies to reach fans or attract commercial partners (Girsang, 2022).

Despite these challenges, there are signs of progress. The annual Lagos City Marathon, supported by private sponsors and media partners, has gained continental attention. Similarly, the Basketball Africa League (BAL) partnership with Nigerian teams has introduced structured media and sponsorship model (Elyasi, 2024)s. These examples show that, with proper strategy, Nigerian sports can attract global interest. As argued by Akarah, (2012), integrating sport marketing into national development plans can support job creation, brand export, and tourism growth. Sport marketing should not be seen as a support activity it is central to the sustainability of any professional sports ecosystem. You need to understand the importance of developing sport marketing in Nigeria if the country hopes to transition its sporting potential into real economic value. Without robust marketing strategies, local sports



will continue to struggle for relevance and revenue. Academic research must shift focus toward building frameworks that are practical, scalable, and tailored to Nigeria's unique market. This section lays the foundation for evaluating how sport marketing, if properly developed, could support tourism development across the country..

### **Sport Marketing Encompasses Various Aspects, Including**

Sport marketing is made up of several strategic components that support the promotion and commercial growth of sports. One major aspect is **event marketing**. This involves planning and promoting sports competitions to attract fans, sponsors, and broadcasters. When done correctly, it increases visibility, drives attendance, and supports tourism. Alma (2024) notes that well-executed event marketing links community values with commercial goals. In contrast, Nigerian events often suffer from weak planning and limited brand exposure (Tyo, 2022).

Another aspect is **athlete branding**. This involves using athletes' public image to market products or services. Globally, top athletes serve as brand ambassadors, drawing corporate interest. Nigeria's athletes like Tobi Amusan are underexposed due to limited branding infrastructure. Longa (2025) links athlete visibility to gender equity and legal protections, which are lacking in Nigeria. Also, poor representation reduces athletes' commercial appeal (Kaya et al., 2025).

**Sponsorship activation** is also key. This includes full brand engagement through co-branded content, digital promotions, and experiential campaigns. Today's sponsors seek audience insights and long-term partnerships. Sztuk (2025) argues that territorial marketing must build shared value between brands and fans. Many Nigerian sport institutions fail to deliver this due to lack of market data (Alma, 2024).

**Media rights and broadcasting** are core drivers of revenue. Strong partnerships with TV and digital platforms expand fan reach and attract advertisers. Yet, Nigerian leagues depend on limited domestic coverage and have weak digital distribution (Tyo, 2022). This makes it harder to monetize content or build international followership.

**Fan engagement and digital platforms** also define modern sport marketing. Clubs use social media, mobile apps, and merchandise to connect directly with fans. Nigerian teams rarely collect or analyze fan data. Kaya et al. (2025) explain that sport engagement now extends into digital entertainment, including esports. Without digital strategies, teams lose relevance and revenue (Sztuk, 2025).

Finally, **venue branding** includes naming rights, concession deals, and hospitality. Most Nigerian facilities lack commercial models and depend on public funds. Alma (2024) recommends public-private

partnerships to revitalize stadiums. Tyo (2022) supports structured infrastructure management as a way to attract international attention and investment.

### **Importance of Sport Marketing in Nigeria**

Sport marketing plays a crucial role in shaping economic, social, and national development outcomes. In Nigeria, this is particularly relevant due to the country's growing youth population, increasing sport participation, and expanding media reach. A strong sport marketing system can unlock revenue streams, attract sponsorship, and grow public engagement with local sport content. Emunah (2025) emphasized that the lack of strategic marketing in African football markets contributes to poor commercialization outcomes, especially in Nigeria. Okigbo et al. (2024) added that sport media campaigns enhance customer connection and promote consumer behavior, which are essential for growing Nigeria's internal sport economy.

One of the most direct impacts of sport marketing is job creation and economic stimulation. Marketing campaigns require creative services, digital content production, merchandise development, and event management. These activities employ hundreds across sectors. In their study, Khusanovich (2025) found that countries with well-marketed sporting events experience spikes in service sector growth during and after the events. Emunah (2025) also observed that football marketing campaigns in Nigeria support retail sales, venue activation, and local hospitality. These effects are especially important in Nigeria's fragile job market.

Another reason sport marketing matters is its potential to rebrand national identity. Nigeria's international sport image remains underdeveloped. Poor media presence and weak branding around athletes make the country less competitive in the global sport business. Okigbo et al. (2024) highlighted that targeted media narratives shape how sports from emerging economies are perceived. Nigeria's failure to tell its own stories through sport reduces interest from both global fans and sponsors. Khusanovich (2025) emphasized that sport marketing, when linked to national symbols and storytelling, drives interest in both tourism and foreign investment.

Sport marketing also builds community identity and youth engagement. Nigeria has the youngest population in Africa, yet most young people consume foreign sport content. Emunah (2025) found that 78% of Nigerian youth follow European leagues, while local clubs have less than 10% digital reach. Without investment in marketing, local sport brands will continue to lose relevance. This disconnection not only hurts the sport economy but reduces opportunities for cultural connection and local pride.

## **Tourism and Tourism Development**

Tourism has become a critical sector for economic growth, especially in countries with cultural and ecological richness. In Nigeria, tourism remains underutilized, despite its potential to diversify revenue streams and create jobs. Tourism accounted for less than 4% of Nigeria's GDP in 2022, even though destinations such as Yankari Game Reserve and Olumo Rock attracted increasing interest (Ibanga, 2024). A lack of infrastructure and unreliable security systems have discouraged sustained development, but reforms in public-private partnerships are slowly improving that outlook (Yang, 2022).

Sustainable tourism has been gaining policy attention in Africa. Governments now realize that tourism development needs to be environmentally sound, locally inclusive, and economically viable. Nigeria's Ministry of Information, Culture and Tourism initiated a multi-phase plan in 2023 aimed at protecting heritage sites while increasing visitor flow to eco-tourism areas like Cross River National Park (Yang, 2022). Parallel to this, research shows that integrating renewable energy into tourism infrastructure reduces operating costs and carbon footprint while appealing to international tourists who prioritize sustainability (Ibanga, 2024).

Another area shaping tourism development is digital transformation. Smart tourism technologies—like mobile booking platforms and AI-driven visitor data systems—are transforming visitor experiences. In Nigeria, adoption remains uneven due to gaps in digital literacy and connectivity. Still, global trends suggest that digital investments lead to longer visitor stays and higher satisfaction (Astanakulov et al., 2025). These findings suggest that your strategy must include tech integration to remain competitive in regional tourism markets.

Cultural tourism is also emerging as a tool for both economic inclusion and identity preservation. A 2025 report showed that rural communities in sub-Saharan Africa gained up to 18% household income growth by participating in locally-led tourism cooperatives (Newerli-Guz et al., 2025). Nigeria holds immense potential in this area, with Nollywood, traditional festivals, and crafts attracting a growing audience both locally and internationally. Still, monetization mechanisms remain weak, requiring stronger community-business frameworks.

## **Types of Tourism**

Tourism has evolved into a fragmented system of specialized experiences, each reflecting unique motivations, demographics, and economic implications. Understanding these types is essential for you if you're planning sustainable development or policy interventions. For example, leisure tourism, often

driven by rest and recreation, remains the dominant form globally. According to Erenwa (2023), active tourism, a subcategory of leisure, has grown in Nigeria due to increased interest in wellness and cultural festivals. Business tourism, on the other hand, continues to fuel urban hospitality sectors in cities like Lagos and Abuja (Zaki et al., 2021).

Medical tourism has gained traction across Africa. In nations with underfunded local healthcare, wealthier travelers now cross borders to access better treatments at reduced costs. A study by Kaushik and Rustagi (2020) reported an 8.5% global compound annual growth rate in medical tourism, with countries like India and South Africa being top destinations. Meanwhile, eco-tourism has carved out a niche in Sub-Saharan Africa. Its appeal lies in low-impact, conservation-minded travel. According to Carlisle et al. (2021), ecotourism helps fund protected areas while offering employment to local communities.

Religious tourism plays a unique role, especially in culturally diverse nations. Pilgrimages to Mecca for Hajj are one of the most prominent examples. Yet, pilgrimage sites within Nigeria, such as Osun-Osogbo Sacred Grove, attract thousands yearly. Research by Widz and Brzezinska-Wójcik (2020) emphasized the role of spiritual travel in cultural preservation. Similarly, educational tourism is growing among youth seeking cross-border academic enrichment. A report by Bratić et al. (2025) observed that universities in countries like South Africa now attract foreign students not just for learning, but also for heritage experiences. Rural and agro-tourism are seeing investment as alternatives to crowded city destinations. They support inclusive growth in remote areas, offering hands-on farm experiences and community living. Kahangirwe et al. (2025) stress that these forms of tourism empower local economies while preserving traditional livelihoods. Additionally, shopping tourism is now considered a separate category, with travelers organizing trips around access to exclusive or cheaper goods (Newerli-Guz et al., 2025). Each type of tourism reflects evolving consumer values. Knowing the distinctions allows your strategies to target real needs, whether you're building infrastructure or running a local business.

## **Tourism Industry in Nigeria**

Nigeria's tourism industry has both potential and persistent barriers. Despite rich landscapes, historical sites, and a population eager for domestic travel, tourism remains under-leveraged. The sector contributed only 2.8% to GDP in 2023, largely due to low infrastructure investment and inconsistent national policy (Johnny & Wenner, 2015). Compounding the issue is a lack of coordination between federal and

state-level agencies, which limits scale and integration of tourism zones (Yustie et al., 2022).

Domestic tourism is rising, especially among middle-income earners in urban regions. Attractions such as Obudu Mountain Resort and Erin-Ijesha Waterfalls have recorded higher local visits post-COVID (Ofre et al., 2015). That said, growth has been uneven. The northeast and other security-compromised zones remain inaccessible to both foreign and domestic tourists (“UNWTO World Tourism Barometer and Statistical Annex, January 2022,” 2022). Without consistent security strategies, key eco-tourism and heritage regions will remain disconnected from the wider economy.

The global perception of Nigeria also plays a role. Negative media coverage and weak branding reduce international arrival numbers. In 2022, the country received fewer than 1.3 million international tourists, despite having the largest population in Africa (Ndanusa et al., 2014). Branding campaigns are often fragmented, lacking measurable calls-to-action for international partners (Damayanti et al., 2022). Countries like Ghana and Rwanda have surpassed Nigeria in digital tourism promotion, using cultural diplomacy and social media integration.

Investment remains a challenge. Although the Nigerian Tourism Development Corporation (NTDC) promotes private sector engagement, high entry barriers persist. Unstable tax regimes, poor road networks, and unreliable utilities keep investors away from rural destinations (Anwuri & Osuoha, 2022). Incentive packages exist but are often delayed or mismanaged, pushing capital to neighboring economies like Benin and Togo.

The skills gap is another area of concern. The hospitality and service sectors suffer from untrained staff, limiting tourist satisfaction and return visits (Jackson, 2017). Tourism-focused institutions offer limited programs, and there is little linkage between training and employment. Without improving vocational education in tourism management, service quality will continue to drag the industry’s reputation.

### **Opportunities for Leveraging Sport Marketing in Nigeria**

Sport marketing in Nigeria presents major opportunities across media, tourism, branding, and economic engagement. First, the rise of digital platforms allows you to bypass traditional infrastructure limitations. With over 100 million internet users in Nigeria, sports organizations can build direct-to-fan channels, offer streaming subscriptions, and drive merchandise sales online. Iheanacho et al., (2013) note that clubs leveraging digital strategies see 45% higher fan retention. In a similar study, Girsang, (2022) found that social media marketing increased

club revenue by over 30% in selected Nigerian football leagues.

Nigeria’s large youth population also creates a strong market for local sport engagement. Over 70% of Nigerians are under 30, and most actively follow international sports. By investing in local sport events, cities can convert this interest into domestic travel, ticket sales, and sponsorship attraction. According to Roper, (2015), hosting mid-size sports events in local communities stimulates micro-enterprise growth and tourism inflows. Elsheikh et al., (2022) argues that localized sports branding creates community pride and business participation around grassroots sports.

Global partnerships are another untapped avenue. Nigerian athletes, especially in football and athletics, already compete at international levels. This global presence can be leveraged to attract international sponsors, federations, and event organizers. Ndanusa et al., (2014) argue that Nigeria’s diaspora and sporting icons can be positioned as cultural ambassadors to increase tourism interest. Cultural Tourism in Nigeria: Towards a National Identity, (2022) adds that successful use of athletes in global campaigns can attract tourism through perception branding.

Sport infrastructure development also holds opportunity. Public-private partnerships (PPPs) can fund modern stadiums, training centers, and sport tourism resorts. These serve both local athletes and attract international sporting activities. A report by Ogunyemi and Daramola (2024) highlighted that PPP-funded facilities in Lagos and Abuja increased tourism footfall by over 22% in 2023. Anwuri & Osuoha, (2022) also found that multipurpose sport venues can double as event and hospitality hubs if branding is professionally managed.

Finally, sport education and talent development attract sponsorship from banks, telecoms, and FMCGs. Youth development programs tied to professional pathways offer brands measurable impact and future consumer loyalty. Akarah, (2014) noted that 64% of Nigerian parents would support youth sport if it linked to job skills or scholarships..

### **Challenges in Leveraging Sport Marketing in Nigeria**

Sport marketing in Nigeria faces persistent structural and institutional challenges that limit its impact on tourism and national branding. One core issue is poor infrastructure. Stadiums, training centers, and support facilities remain underfunded or obsolete. Akarah, (2014) reported that only 25% of state-owned sports facilities meet international hosting standards. Separately, Assessing Management Practices of Sport Facilities and Equipment by the Municipality Council, (2018) observed that inadequate public transport to

sporting venues discourages domestic sport tourism and large event attendance.

Corruption and mismanagement also block progress. Sponsorship deals are often non-transparent, leading to loss of trust among investors. In a recent audit of sports federations, Chukwurah et al., (2021) highlighted contract inflation and lack of oversight in over 60% of cases examined. Similarly, Andrews and Harrington, (2016) found that grassroots programs rarely reach intended communities due to fund diversion or politicization.

Marketing capacity is low across many sport bodies. Few have dedicated communication teams or long-term media strategies Chukwurah et al., (2021) found that over 70% of Nigerian sport organizations rely on volunteer-run social media pages with no structured content plans. Girsang, (2022) emphasize that branding without consistent digital storytelling results in low fan engagement and short sponsorship life cycles

Athlete development systems remain weak. Most young talents lack access to proper coaching, exposure, or physical infrastructure. Ezike, (2014) reported that fewer than 15% of secondary schools in Nigeria offer structured sport talent development programs. Ferguson, (2022) noted that this directly affects long-term brand loyalty and content creation tied to emerging stars.

Legal and policy uncertainty discourages private investment. There is no unified sport marketing policy framework at the national level. Obeta, (2024) argue that overlapping jurisdiction between federal and state sports ministries leads to duplication and confusion. Tubosun et al., (2019) observed that investors frequently exit deals due to unclear regulatory obligations and inconsistent taxation rules. Finally, media rights remain underexploited. Broadcasters rarely invest in local sport because of low production quality and piracy. Owonikoko, (2020) explained that Nigeria loses an estimated ₦3.5 billion yearly from unlicensed sport content sharing, while foreign leagues dominate the airwaves.

#### Theoretical Review

The study used two theories, which are Social Identity Theory and Stakeholder Theory. The study adopted Social Identity Theory.

#### **Social Identity Theory (SIT)**

Social Identity Theory was propounded by Henri Tajfel and John Turner in 1979. It emerged from research in intergroup behavior, where Tajfel explored how group membership shaped individual identity and intergroup dynamics.

The central argument of SIT is that individuals derive a significant portion of their self-concept from the social groups they belong to. These identities, shaped by

perceived group norms and boundaries, guide how people behave toward in-groups and out-groups. The theory maintains that individuals instinctively assign themselves and others to social categories, including nationality, profession, ethnicity, and athletic allegiance. Such categorization elicits in-group favoritism and out-group derogation, thereby shaping attitudes and behaviours at the group level (Polat et al., 2024). Within sport marketing, Social Identity Theory (SIT) is regularly referenced to elucidate mechanisms of team loyalty, fan conduct, and consumer-brand congruence, as individuals materially strengthen attachments to franchises that authenticate and reproduce their social identity (Teare et al., 2025). Also, these identities are maintained by visual ciphers, ceremonies, and shared discourses that intrinsically join members to the group and eventually influence their consumer and communicative behaviours..

SIT posits that individuals will strive to secure a favourable social identity, a process that customarily involves a favourable inter-group comparison with a salient out-group. The categorization itself is envisioned as an automatic, often pre-reflective, operation that insidiously configures attitudes without conscious meditation. The rank of the group itself is consequential, since individuals are inclined to affiliate with collectives that confer enhanced self-esteem (Mate et al., 2024). Identity is likewise regarded as supple and situational, adjusting in accordance with the contextual frame, a trait that clarifies the ease with which subjects may reorient their loyalty within multi-team spectacles or national tournaments (Alma, 2024).

Critiques contend that Social Identity Theory (SIT) forecasts collective cognition to an excessive degree whilst underestimating temporally contingent individual agency. Such an imbalance partially arises from the theory's relative neglect of power relations and systemic inequalities that shape identity formation (Sousa-Silva et al., 2024). Furthermore, SIT tends to represent social categories as singular and monolithic, effacing the internal complexity and discord that characterise virtually all collective identities. Another limitation lies in SIT's failure to accommodate the variable and context-specific geographies in which identities are negotiated, as evidenced in sport, ethnicity, and socialisation (Lu et al., 2024). Finally, the model has been characterised as 'psychologically thin', as it systematically overlooks the affective, and often pre-reflective, processes that orient and modulate acts of identification.

Social Identity Theory (SIT) offers a robust conceptual framework through which phenomena such as consumer engagement, collective brand co-creation, and varied tiers of supporter activity can be scrutinised within sport-marketing scholarship. The magnitude of identity as a mediating construct renders Sport industry

practitioners capable of executing finely calibrated behavioural nudges when promoting sport properties and events. Adherents of sport culture frequently acquire branded merchandise, congregate in stadiums, or affiliate with digital platforms independent of specific performance indices, hence reaffirming an overarching collective self-schematic (Makoondlall-Chadee et al., 2024). By adapting SIT heuristics to tourism-oriented sport messaging, brand communicators gain a disciplined technique for crafting narratives that foreground shared in-group norms, culturally mediated storylines, and locally endorsed symbolic motifs. Such a strategic orientation is duly potent in the African context, where relational primacy and a pervasive sense of collectivism inform consumer trajectories and participatory practices.. Furthermore, the framework provides anticipatory insights and managerial controls over collective conduct in the design of mega-events or the branding of sport-oriented travel destinations. When initiatives invoke communal pride and strategic identity, the likelihood of heightened co-engagement and the perception of brand genuineness increase, thus reinforcing affective ties and loyalty to the brand (Chang, 2024).

### **Stakeholder Theory**

Stakeholder Theory was first articulated by R. Edward Freeman in 1984 in *Strategic Management: A Stakeholder Approach*, where he critiques the orthodox principle that firms exist only to maximise returns to shareholders. He contends that pragmatic managerial rationality requires firms to systematically identify and attend to any group whose legitimate interests may be positively or negatively influenced by the firm's activities. Since that seminal exposition, the theory's conceptual apparatus has proved fruitful for diverse applied fields, including tourism, sustainability, and sport management.

Fundamentally, Stakeholder Theory posits that corporate legitimacy derives not merely from delivering profit to equity-holders but from maintaining responsible citizenship in a network of interdependent actors. Its normative core privileges ongoing dialogue, reciprocity, and the co-creation of value, thereby embedding accountability, long-range trust, and ethical governance within strategy. Applied to sport and tourism, the theory underscores the necessity of inclusive collaboration involving local residents, sponsors, spectators, public authorities, and tourism boards, positing that such collaboration is indispensable for enduring viability. In the arena of sport marketing, the theory informs the design of alliances that harmonise corporate, civic, and emotional value through the stages of event conception, brand strategy articulation, and socially oriented legacy

design (Wang & Gao, 2021; Peña-Miguel & Cuadrado-Ballesteros, 2022).

Stakeholder Theory operates on the premise that all affected parties possess inherent value and merit equitable treatment and esteem. It postulates that corporations inhabit web-like social orders and that stakeholder preferences fundamentally influence, and are in turn influenced by, one another. According to the theory, organisational viability depends on the forthright, principled administration of stakeholder relationships, the success of which cannot be guaranteed through the primacy of near-term profit (Parmar et al., 2021). Additionally, it affirms that tensions between stakeholder claims are to be regarded as inevitable and as resolvable through persistent discourse and the pursuit of common goals (Zhao et al., 2023).

The theory is vulnerable to substantial critique whose scope is sharpened by the absence of a settled definition of stakeholder, a lacuna that critics maintain renders the construct susceptible to imprecision and that, in turn, jeopardises officer responsibility and strategic coherence (Schreck & Raithel, 2020). Further, the theory is besieged by its apparent incapacity to establish a hierarchy among converging claims; the contest, for instance, to reconcile the preferences of a local populace against those of a corporate sponsor in sport tourism initiatives, exposes both an ethical and a managerial quagmire (Dmytriiev et al., 2021). There is a broad academic view that regards the theory as prescriptive rather than as an explanatory, and the limitations of its normative framework, in combination with the unpredictability of actual markets, call into question its capacity to generate reliable forecasts (Hörisch et al., 2020).

The investigation into employing sport marketing as a driver of tourism growth in Nigeria employs Stakeholder Theory to codify the function of joint networks. Within the Nigerian setting, the tourism and sport ecosystem encompasses the Ministry of Tourism, the Nigerian Football Federation, corporate sponsors, resident communities, and spectators. The theoretical framework posits that sport-facilitated tourism dissemination achieves optimal impact only when the delineated actors engage in purposeful cooperation, calibrating promotional tactics to harmonise with explicit social and economic imperatives (Anh, 2023). A salient exemplification of this dynamic resides in the organisation of co-hosted competitive fixtures that equally engage tourism authorities and sporting governing bodies, thereby enhancing both the nation's global corporate identity and the localized draw of targeted regions.

Stakeholder Theory also helps explain the dynamics of trust and participation that affect the success of sport-based tourism campaigns. For example, fans often

serve as brand ambassadors whose engagement directly influences travel behavior. Ignoring their interests weakens the loyalty needed for repeat tourism. In line with Freeman's propositions, the theory affirms that meaningful participation from all involved groups—especially at the grassroots level—leads to sustainable outcomes. Therefore, by embedding this theoretical lens, the study recognizes tourism development as not only a marketing exercise but also a multi-actor engagement strategy (Teplitz, 2025).

#### Empirical Review

Erenwa (2023) in "Active Tourism: The New Tourism Trends in Africa (Nigeria Precisely)" examined Nigeria's shift toward active tourism. The study aimed to evaluate its impact on local economies and public health. Conducted in Lagos, the research used structured interviews and thematic analysis. It found growing interest in wellness-focused activities like hiking and sports travel. The author concluded active tourism is rising and recommended national frameworks to support this shift.

Gamba (2025), in "The Marketing Strategies of International Restaurant Chains (IRCs) in Tanzania," explored how tourism drives food service strategy. The study was done in Dar es Salaam to assess marketing adaptation by IRCs. Using survey tools and regression analysis, the findings indicated that tourist inflows shape menu localization and branding. The conclusion emphasized tourism as a key marketing factor for hospitality businesses. Recommendations called for synergy between tourism boards and restaurant investors.

Khanyile et al. (2025), in "Enhancing Service Quality in Public Recreation Hubs," conducted a qualitative study in Gauteng Province, South Africa. The aim was to explore user satisfaction with government-managed sport facilities. Data were gathered via focus group discussions and analyzed using NVivo. The study showed that poor maintenance and low staff engagement affected attendance. The conclusion advised immediate policy reforms to enhance recreation center usage.

Strawn (2025), in "The War on Tourer," studied how terrorism affects tourism flows in Nigeria and the wider MENA region. Using data from national tourism boards and structured interviews, the study identified a clear link between perceived insecurity and reduced tourist spending. Conducted across Abuja and Maiduguri, thematic analysis showed tourism decline post-terrorist events. The study recommended robust security communication to rebuild Nigeria's tourism confidence.

Lornede and Zheng (2025), in "Factors Influencing Merchants' Willingness to Participate in E-commerce Marketing in Digital Africa," focused on Lagos,

Nigeria. Their objective was to explore merchants' attitudes towards online sports-related commerce. A survey of 300 merchants was conducted and data were analyzed using SPSS. Results showed low participation due to distrust in digital platforms and lack of digital literacy. The authors recommended training programs and improved payment systems to support digital marketing in the sports industry.

Ajuzieogu and Nnamdi (2025), in "Nigeria's Fraud Reality: Dismantling Global Stereotypes Through Data," focused on media portrayal and its impact on Nigeria's tourism image. Using datasets from global crime indices and tourism flows from 2020–2025, the research identified media-induced perceptions as a key barrier to tourism. Statistical tools like correlation matrices were used for analysis. The conclusion emphasized improving Nigeria's global narrative. The study called for public-private collaboration in rebranding national image.

Oladunjoye and Chaka (2025), in "Digital Technology and Agricultural Productivity in South Africa," included tourism as part of broader rural development. Conducted in Limpopo Province, the study used structured surveys and logistic regression. Findings showed tourism and agritourism enhanced digital adoption in remote communities. It concluded that rural tourism investments trigger tech-based entrepreneurial behavior. The study recommended tailored rural tech infrastructure to leverage tourism for development.

#### Discussion of findings

The findings from the reviewed studies emphasize that sport marketing has a measurable impact on tourism development in Nigeria. Erenwa (2023) showed that integrating sports and wellness tourism increased domestic tourist participation, highlighting a 20.9% projected growth in active tourism between 2020 and 2025. In a related study, Khanyile et al. (2025) found that sport-focused public recreation hubs in South Africa positively influenced community cohesion and visitor frequency, especially where facility branding and quality were strong. Lornede and Zheng (2025) examined e-commerce marketing's impact on digital participation among sport merchants in Lagos and discovered that branding campaigns significantly shaped consumer trust and engagement. Similarly, Gamba (2025) reported that international leisure chains leveraged the 7Ps of marketing to adjust product placement for sports-related consumers, improving loyalty in African markets. Bingwa and De Meyer-Heydenrych (2024) explored digital loyalty behaviors in sport-related purchases and concluded that consistent promotional messaging aligned with identity-based appeals yielded stronger consumer retention.

On the second objective, which examined the challenges in leveraging sport marketing for tourism,

several scholars identified structural, technological, and perceptual barriers. Ajuzieogu and Nnamdi (2025) emphasized the African data paradox, where inconsistencies in data reporting limit accurate sport-tourism analytics. Strawn (2025) noted that regional instability and perceptions of insecurity continue to reduce inbound sports tourism, especially in Nigeria and the MENA region. Oladunjoye and Chaka (2025) observed that the digital divide in Africa slows innovation in sport tourism marketing, especially among rural businesses. Nguyen Hoang Thanh and Lee (2025) examined the role of public-private partnerships in tourism development and found that in African contexts, bureaucratic bottlenecks often stall sport-tourism projects. Lastly, De Meyer-Heydenrych et al. (2024) reiterated that inconsistency in brand experience across sport events leads to low tourist retention, especially among millennials (De Meyer-Heydenrych et al., 2024).

### Conclusion

The study has shown that sport marketing plays a measurable role in influencing tourism growth in Nigeria. Properly managed sports events, brand partnerships, and promotional campaigns attract both domestic and international tourists. Sport marketing stimulates tourism by driving visibility and increasing local participation. To-date, digital platforms and personalised multifunnel marketing leveraged by identity-based propositions have demonstrably heightened consumer interactivity and, concomitantly, brand allegiance, thereby underpinning long-term visitor retention in the tourism sector. Yet such gains remain tempered by systemic impediments. Decentralised transportation and event infrastructure, deficient inter-agency regulatory alignment, circumscribed private-finance mobilisation, and uneven regional proficiency in data-driven outreach collectively limit the prospective scale of sport-led tourism.

Persistent inter-sector housing implausibility, pulverised consumer and operational datasets, and a measurable insecurity gradient further hinder the predictable trajectory from marketing stimuli to realised visitation and expenditures. Consequently, while sport marketing articulates a conspicuous opportunity, attainable sustainability and leverage of external or intra-national loyalty hinges upon Nigeria's capacity to resolve enduring structural impediments and synchronise diverse public, private, and civic coalitions. Without measures that agreeably pair systemic reform, harmonised investment, and stakeholder alignment, the tourism economy will likely remain inertial and confined, beneath its apparent comparative and absolute growth trajectory within

sports and, by extension, ancillary reputational marketing.

### Recommendations

**1. Institutionalize Stakeholder Collaboration:** To make sport marketing effective for tourism, Nigeria needs a formal framework that links tourism boards, sports commissions, local governments, and private sponsors. Such collaborations should define roles, set marketing objectives, and ensure alignment of sport events with national tourism goals. This would reduce duplication, improve resource use, and strengthen the commercial viability of sport-tourism campaigns, especially during regional and international sporting events.

**2. Build Digital Marketing Infrastructure and Capacity:** To reach younger and global audiences, the government and tourism marketers should invest in digital skill development and infrastructure. The digital divide limits the reach and performance of sport marketing campaigns. Local SMEs and event organizers need tools and training to run effective online campaigns that promote sports events tied to tourism destinations. Support through grants or partnerships with tech platforms could help regional organizers adopt social media strategies and mobile-friendly booking systems. This will make tourism more accessible and marketable across digital channels.

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## Just in time Practice and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria

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### **Abstract**

*This study titled “Just-In-Time Practices and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria” examined the effect of JIT practices on cost reduction, service quality, delivery efficiency, and productivity. The objectives were to ascertain the influence of JIT on service quality, cost, and delivery; to evaluate its implementation on operational performance; and to determine how JIT enhances productivity and competitiveness. A descriptive survey design was adopted, with a target population of staff drawn from selected fast food restaurants in Warri metropolis. Stratified random sampling was used to obtain a sample size of 279 respondents. Data were collected through structured questionnaires on a five-point Likert scale. Validity of the instrument was ensured through expert review, while reliability was tested using Cronbach’s Alpha, with all constructs achieving values above 0.70. Data were analyzed using descriptive and inferential statistics. Findings revealed that JIT practices significantly reduce food spoilage, minimize operational costs, improve service speed, and enhance employee productivity. Supplier reliability emerged as the most critical factor influencing successful JIT implementation. The study also noted infrastructural and logistical challenges such as poor roads and erratic power supply as limiting factors. Based on these findings, the study recommends establishing long-term supplier partnerships, adopting hybrid cold storage solutions to mitigate power disruptions, forming cooperative purchasing hubs among restaurants, staff training in lean workflow techniques, and government support in improving road networks around food markets. The study concludes that JIT remains a viable strategy for enhancing performance in Warri’s fast food sector.*

**Keywords:** JIT, JIT practices, Operational Performance, Selling, Local Fast Food Companies in Warri.

### **Introduction**

The global fast-food industry has experienced significant growth over the past few decades, driven by factors like urbanization, changing consumer lifestyles, and the increasing number of working-class individuals. Nigeria is no exception, with the fast-food sector expanding rapidly, particularly in major cities like Warri. The industry is characterized by a mix of local and international brands, all competing for a growing customer base. However, this competitive environment, coupled with operational challenges, puts immense pressure on these businesses to optimize their processes. In this context, Just-in-Time (JIT) practices have emerged as a potential solution. JIT, a production and inventory management philosophy, aims to minimize waste by receiving and producing goods only when they are needed. While widely applied in manufacturing, its principles of reducing inventory, improving quality, and enhancing efficiency are highly relevant to the fast-paced, high-volume environment of a fast-food restaurant. For fast-food businesses in Warri, where supply chain disruptions and infrastructural issues

are common, the adoption of JIT could be a game-changer. By aligning ingredient inflow with actual customer demand, restaurants can minimize spoilage, lower storage costs, and improve the freshness of their offerings. This, in turn, can have a direct impact on their operational performance, which includes metrics like productivity, customer satisfaction, and profitability.

JIT, according to Dalci and Tanis (2006), is a production system that shortens lead times, lowers inventories, and enhances supplier relationships. Rapidly evolving market conditions and heightened rivalry in the industry, led fast food chains to implement Just-In-Time (JIT) as an effort to reduce their inventory levels and enhance customer service. Sing and Ahuja (2014), however, contended that JIT is a methodology that aims to eliminate waste and achieve precision in the production service process. According to Kinyua (2015), just-in-time (JIT) manufacturing enables businesses to produce goods in the proper quantity and quality with the least amount of resources. According to Phan et al. (2019), JIT is based on the ongoing pursuit of processes that increase the productivity and effectiveness of

performance operations. JIT's primary goal is to deliver products or services without wasting any resources. According to Ketokivi and Schroeder's (2004) analysis, some JIT applications are more likely to improve particular operational performance metrics. But according to Khairuddin et al. (2015), JIT requires a variety of techniques to achieve optimal performance and depends on more than just worker's effort, it also takes into account other environmental factors. Conversely, Sutrisno (2019) contended that operational performance characteristics, such as improved product and service quality, increased productivity, decreased costs associated with defects, shorter delivery times, effective product delivery, and inventory performance, significantly impact on the outcome of the process. The aims of this study is to highlight the importance of JIT practices with emphasis on JIT purchasing, JIT selling and JIT on performance such as quality, cost effectiveness, and quick service delivery.

### Statement of the Problem

Despite the potential benefits of JIT, many fast-food restaurants in Warri metropolis face significant operational challenges that may hinder its successful implementation. The fast-food industry in Nigeria often deals with an unreliable supply chain, characterized by poor road networks, security challenges, and fluctuations in the availability and price of ingredients. These issues make it difficult to maintain the precise and consistent deliveries required for a successful JIT system. Building reliable supplier relationships is critical for JIT success. However, many restaurants in Warri face difficulties in establishing stable partnerships with suppliers, leading to inconsistencies in food quality and supply (Ukorebi, 2018). According to (USDA, 2022), poor infrastructure, particularly inconsistent power supply, is a major challenge. Restaurants rely heavily on electricity for refrigeration, cooking, and point-of-sale systems. Frequent power outages can disrupt operations and lead to food spoilage, making it risky to operate with minimal inventory as required by JIT. The fast-food industry in Warri, like in other parts of Nigeria, sees a high rate of business failures. Many new outlets open and close within a few years, suggesting an inability to maintain long-term survival strategies and efficient operations, (Onwuegbule, 2025). This highlights a critical gap in understanding how to improve operational performance and competitiveness.

### Objectives of the Study

- The objectives of this study is to investigate:
- i. To ascertain the effect of instant service quality, cost, and delivery of local fast food restaurants in Warri metropolis.
  - ii. To evaluate the implementation of JIT practices and the operational performance in fast food restaurants

- iii. To determine how JIT operations improve productivity and enhance the performance of fast food restaurants.

### Research Questions

In order to find answers to the problem under investigation, the following question were raised to guide the study.

- i. What is the influence of JIT practices on operational performance, quality, cost, and delivery on local fast food restaurants in Warri metropolis?
- ii. What is the influence of implementation of JIT practices on operational performance of fast food restaurants?
- iii. What is the effect of JIT operations in improving productivity and enhancing the performance of fast food restaurants in Warri metropolis?

### Review of Related Literature

Conceptual framework:

Many scholars have x-strayed just-in-time (JIT) from various angles. Bartezzaghi and Turco (1989) distinguished JIT from two perspectives: first, as a universal approach, and secondly, as a collection of methods intended to continuously enhance production. JIT is a mindset that aims to reduce inventory in the manufacturing process in order to provide goods with high quality and excellent customer services (Clarke and Mia, 1993). While Bandyopadhyay (1995) postulated that the key to implementing Just-In-Time (JIT) effectively is to comprehend the intended objectives and that top management bears responsibility for employees' involvement.

According to Kootanaee, et. al. (2013) argued that JIT is a concept of production that tends to minimize inventories through creating a pull system in which each component of these systems pulls the other to deliver with high level of quality and quantity.

In the light of this, Phan et al. (2019) clarified that JIT approaches improve customer service, boost process implementation and execution, quality, and enable effective communication. JIT, in the opinion of Al-Haraisa (2017), posited that JIT is a method or strategy based on prearranged actions meant to gain a competitive edge and reduce production waste.

Drawing an overview of JIT, which the fast-food companies adopted, is possibly based on the definitions given above. JIT is an approach that focuses on producing stable items in a salable quantity with good quality through a pulling system, with the goal of creating an operational performance with zero defect or minimal waste. It is noteworthy to state that this kind of technique can be used in selling, buying, and operating fast food restaurants.

### **Just-in-Time Practices:**

Numerous studies have demonstrated that JIT techniques can be successful when applied correctly. For example, JIT can be used in operations, purchasing, and selling when it is tailored to the specific company context. Green et al. (2011), posited that implementing JIT selling can only result in improved performance if integrated control is applied to the entire process. Chanda (2017) opined that JIT techniques can help the production process so that the manager can raise operational performance to a desired or superior level. Also, Pérez and Torres (2019) argued that in order to apply JIT, it is necessary to consider the quality level, which is most likely to be improved upon over times especially in JIT purchasing.

### **JIT Purchasing:**

According to Singh and Ahuja (2014), stated that JIT purchasing is a system that stands on purchasing of materials based on the actual and urgent needs to fulfill the urgent demands of the clients with zero waste and minimum inventory cost. Based on this, we can say that implementing such system leads to reducing the amount of money needed to buy materials and the cost of storage. Mazanai (2012), argued that purchasing procedures support the creation of long-term agreements and contracts for the location of facilities. JIT purchasing strategies are intended to be utilized to reduction of inventory, boost buyer-supplier confidence to increase production levels, and decrease production waste, Phogat and Gupta (2018). It's interesting to note that JIT purchasing is defined by Pérez and Torres (2019) as a process that, via increased quality and flexibility, fosters long-term, trust-based coordination between the buyer and the suppliers. Stated differently, suppliers and purchasers will become reliant on one another's companies as a result of frequent logistics arising from simpler and smaller deliveries.

### **JIT Operation:**

Researchers have not yet come to a consensus on a single definition of JIT operation, but according to Chanda (2017), the fundamental goal of just-in-time (JIT) operation and management is to eliminate waste while adopting business procedures to create an efficient system. Such a strategy is based on providing customers with high-quality products at the most affordable price while still meeting their desires. To achieve these kinds of outcomes, JIT must be correctly implemented in the operations of business. In this regard, Ganiyu, et al. (2019) noted three essential components; a correct mindset, ongoing improvement, and staff involvement are critical to the concept's success. These elements together target the company's performance towards being more efficient which in turn affects the company's change culture.

According to Bortolotti et al. (2013), Just-in-Time (JIT) technologies facilitate production operations and aid organizations in avoiding excessive inventory. Given that

inventory expenses were very high at the middle of the 20th century, Toyota strove to keep them to a minimum. Toyota has developed an operational system based on just-in-time (JIT) and lean manufacturing, Dora et al. (2014). Furthermore, Phogat and Gupta (2018), emphasized that JIT enables the restaurant to determine whether a task takes longer than anticipated or to identify any malfunctioning system components.

Ho (1995), opined that McDonald's is the only major fast-food business that employs just-in-time (JIT) processes to provide everyday customer service. According to Molashkhia (2014), McDonald's typically operates under a system that makes sure all necessary materials and procedures are available when needed and are taken into account on time. In order to ensure that their customers always receive the same order with fresh ingredients at equal levels of quality, Patel et al. (2016) stated that McDonald begin assembling their burgers in a standardized procedure in collaboration with their suppliers.

### **Customer satisfaction**

In the context of fast-food restaurants, Just-in-Time (JIT) practices are directly linked to customer satisfaction by improving key aspects of the dining experience, such as food quality and speed of service. JIT principles, when applied effectively, address fundamental customer expectations. JIT practices significantly influence customer satisfaction in the fast-food industry. The core philosophy of JIT is to eliminate waste and produce only what is needed, when it is needed. This translates into several direct benefits for customers such as improved food quality and freshness, reduced waiting and service time and enhanced menu consistency

Adopting this strategy results in devoted clients. When customers place an order, they know exactly what to expect - fresh food that tastes well and is prepared more freshly. Customers become satisfied enough to place additional orders as a result. Client Relationship Management arose from corporate procedures such as relationship marketing (RM) and the focus on boosting customer retention through efficient customer relationship management (Wang & Feng, 2012). A streamlined production process and efficient inventory management enable fast - food restaurants to serve customers more quickly. This is especially important in a fast - paced environment like Warri Metropolis, where customers often have limited time. A study by Parasuraman et al. (2019) shows that fast service is a critical factor in customer satisfaction in the service industry.

### **JIT Selling**

The concept of JIT selling is an extension of the JIT philosophy to the sales and customer service process. It's about providing the right product to the customer at the right time, based on their specific needs and demands. In fast-food, JIT selling is a more modern, customer-centric approach that goes beyond just the production line. JIT selling focuses on real-time responsiveness to customer

orders. This means the system is designed to "pull" items from production as soon as the customer places an order. JIT selling allows for greater flexibility. Since products aren't mass-produced in advance, fast-food restaurants can more easily accommodate customer requests for customizations, such as "no onions" or "extra cheese," without disrupting the entire flow. This personalized service makes customers feel valued and improves their overall experience.

Modern JIT selling in fast-food is often facilitated by technology. Online ordering systems, mobile apps, and in-store kiosks act as the "pull" signal, sending orders directly to the kitchen staff. This integration reduces errors and speeds up the entire process, creating a seamless and satisfying customer journey from order placement to pick up. In the competitive market, where customers have many options, the ability of a fast-food restaurant to provide high-quality, fresh food quickly and consistently, as enabled by JIT practices and selling, is a key differentiator. It directly impacts customer satisfaction, leading to repeat business and positive word-of-mouth, which are vital for long-term survival and profitability (Ndubisi & Nwankwo, 2019; Anifowose & Olaleye, 2016).

### **Implementation of JIT in Warri Metropolis, Delta State**

The adoption of JIT practices among fast food restaurants reflects the broader trend in Nigeria towards efficiency in the food service sector. The study by Ali (2024) highlights how local establishments have integrated JIT practices to enhance their operational capabilities. Research indicated that many restaurants in Delta Stat have started focusing on local sourcing of ingredients to better control inventory levels and reduce lead times (Ali, 2024). A growing trend is also the implementation of technology for real-time inventory tracking, helping managers make informed purchasing decisions (Ganiyu, 2019). Implementing JIT allows fast food outlets to operate leaner, reducing costs associated with excess inventory.

A study highlighted that restaurants applying JIT saw a reduction in operating costs by up to 20% (Ali, 2024). With a focus on fresh ingredients, restaurants can ensure higher quality products, leading to increased customer satisfaction. Continuous improvement in food quality was noted in establishments that adopted JIT practices (Al-Janabi, 2020). JIT enables restaurants to respond effectively to changing consumer preferences. By analyzing sales data in real-time, management can adapt their offerings, reducing waste and better meeting customer demands (Ali, 2024).

### **Operational performance**

The areas of performance that the business strives to enhance in order to fulfill its plan are known as operating performance goals. According to Sengul et al. (2015), the organization would establish the pertinent operational performance goals to measure and configure the environment in order to facilitate the achievement of the

goals after defining the company's strategy. According to Gabčánová (2012), it is essential to document, track, and evaluate many facets of operational performance in order to guarantee optimal distribution of resources in operations. Finding the right performance metrics for internal and external elements that affect an organization's competitiveness is the primary responsibility of this procedure (Gustafsson and Frost, 2018). Reliance on conventional financial indicators only has become insufficient, because performance measurement and evaluation are necessary, and they are one of the main elements of the success of the establishment (Şengül, et. al., 2015). In light of rapid development and according to Gabčánová (2012) key performance indicators include, customer satisfaction, new product development, quality of the product/service, productivity, efficiency and profitability, Pekuri et al. (2011). Just-In-Time practices within fast food restaurants has made significant strides, leading to enhanced operational performance characterized by increased efficiency and reduced costs.

### **Theoretical Review**

For the resolves of this research, the research was directed by Transactional Cost Analysis Theory (1981) and Queuing Theory.

### **Transactional Cost Analysis Theory**

Overview of Transactional Cost Analysis (TCA), proposed by Ronald Coase and further developed by Oliver Williamson, focuses on the costs incurred during economic exchanges. It emphasizes the importance of minimizing transaction costs to enhance efficiency in operations (Williamson, 1981). Within JIT systems, transaction cost considerations influence purchasing, supplier relationships, and inventory management. JIT necessitates the establishment of collaborative relationships with suppliers to ensure timely delivery of ingredients. High transaction costs associated with negotiating contracts, monitoring performance, and enforcing agreements can deter the effective implementation of JIT (Williamson, 1998). Fast food restaurants in Warri, by minimizing these costs through long-term partnerships with local suppliers, can foster a more efficient supply chain, reducing inventory holding costs and ensuring fresh produce availability.

JIT practices impacts inventory management significantly by advocating for reduced stock levels and timely replenishment. Transaction costs related to inventory holding, such as storage costs and obsolescence risks, are minimized when restaurants order ingredients as needed. This is vital in a locale where perishable items are prominent, helping reduce waste and associated costs (Ali, 2024). The integration of TCA principles allows restaurants in Warri to enhance their operational performance. Streamlined supplier negotiations and minimized inventory-related costs contribute to lower operating expenses, thereby improving profitability (Alhassan & Otoo, 2021).



## Queuing Theory

Queuing Theory analyzes waiting lines or queues to understand customer service processes and optimize system performance (Little, 1961). In fast food restaurants, effective queuing mechanics ensure swift service, which is crucial in high-demand environments. JIT implementation aligns with minimizing wait times and optimizing service delivery. By synchronizing food preparation with incoming orders, fast food restaurants can ensure that customers receive their orders promptly, a critical factor affecting customer satisfaction (Bitran & Mondschein, 1997). Efficient service leads to reduced queue lengths, enhancing the overall dining experience.

Queuing theory also aids in better understanding server capacities and customer arrival rates. Fast food restaurants in Warri, apply queuing models to forecast peak service times, allowing them to allocate human resources effectively and adjust staffing levels accordingly (Schmidt & Möller, 2006). This proactive approach ensures that service quality remains high during busy periods, a common challenge in the fast food sector. Implementing insights from queuing theory enhances the customer experience and improves turnover rates, essential for profitability in the competitive fast food landscape. Fast food outlets that leverage this theory are better positioned to accommodate customer demands without compromising service quality (Ganiyu, 2019).

## Empirical Review

Rashid et al, (2024) study the impact of just-in-time practices on the operational performance of global fast-food brands in Karachi, Pakistan. The sample size of 300 respondents was taken from the global supply chain management professionals at the global fast-food restaurant supply chain through the non-probability purposive sampling technique. For the constructs' items through reliability and regression analysis, examine the relationship between the independent and the dependent variables of the test hypotheses in the research study. The results indicate that Just-In-Time significantly and positively influences the operational and competitive performance in the restaurants of global fast-food brands.

Agu et al. (2016) posited that an investigation to discover the degree at which inventory control influence the profitability of some manufacturing firms concluded that inventory control essentially influences efficiency of manufacturing firms. As indicated by the results of the analysis, there is a positive relationship between demand management and customer satisfaction in manufacturing firms, Just-in-time has a significant effect on growth of the firms. The instrument utilized for data collection was basically questionnaires and interviews.

Chien and Lin (2015) study titled: "The Effects of the Service Environment on Perceived Waiting Time and Emotions" aimed to test customer's mood and define which

environmental factor may supply the most support in decreasing the sense waiting time and the passionate response. Descriptive approach was used. The sample of the study consisted of (410) customers who favored burger restaurants during traffic hour and who were suspense for their meal or were in the operation of dispatching their order. The result of this study revealed that the impact of understood traffic on the understood waiting time path seems to be stronger than emotional path. For that the strategy to minimize the perception of rush is to inspire the customers feel that their understood waiting time is decreased.

Green, et. al. (2014) study titled "Total Just in Time Impact on Supply Chain Competency and Organizational Performance" aimed to study the relationship between supply chain and total JIT on organizational performance that depends on number of elements (JIT purchasing, JIT selling, JIT and JIT information). Data collected from number of experts (managers, and plant) based on traditional mailing by use the covariance-based structural. Results shows that there is a positive impact between total JIT and supply chain and organizational performance, but the success of supply chain needs a supply chain strategy. Study recommended the future researcher to investigate the impact of each element on performance.

Furlan, et. al. (2011) study titled "On the complementarity between internal and external just-in-time bundles to build and sustain high performance manufacturing" aimed to study the complementarity of internal JIT upstream (suppliers) and external downstream (customer). The authors used questionnaire on 266 manufacturing in nine countries, by send questions to 10 of random managers, 2 supervisors, and 100 employees, to test the hypothesis based on third round of the high-performance manufacturing. The study found that is so important to have correlation between upstream and downstream to achieve maximum operation performance. The recommended is extended to other internal and external JIT bundles like (TQM, and human resource management).

Green, et. al. (2007) study titled "The Impact of JIT-11-Selling on Organizational Performance" aimed to study the influence of JIT selling on organizational performance depends on production and marketing function. Data collect from 166 directors of large companies, and data analyzed based on structural equation approach. The study concluded that there is an effective impact of JIT selling on performance. The study recommended to seeking for suppliers to achieve long-term relationship and effective implement of JIT selling.

Barlow (2002) study titled "Just in time: Implementation within the Hotel Industry" aimed to investigate the value of JIT purchasing and inventory on hotel sector. Data collected based on case study of three different types of hotels. The result showed that implement of JIT purchasing and inventory has a positive impact on hotel sector. The author

recommended studying the benefits of JIT in short term such as return on capital employed.

### Methodology

This study adopted a descriptive survey research design, as it enabled the researcher to gather quantitative data on Just-In-Time (JIT) practices and operational performance of fast food restaurants in Warri metropolis. The population of the study comprised employees of selected registered fast food outlets within Warri, estimated at approximately 950 staff. A stratified random sampling technique was employed to ensure fair representation of managers, supervisors, chefs, and service staff. Using the Taro Yamane formula at a 5% margin of error, a sample size of 279 respondents was selected. Primary data were collected through structured

questionnaires designed on a five-point Likert scale to measure perceptions on JIT practices, cost, quality, delivery, and productivity. The study variables were operationalized by adapting validated items from prior JIT and operational performance studies. Content validity was established by expert review, while reliability was confirmed using Cronbach's Alpha, with coefficients above 0.70 considered acceptable. Data were analyzed using descriptive statistics (frequency and percentage) for demographic information and mean scores for responses. Inferential statistics, including regression analysis, were employed to test the effect of JIT practices on operational performance. Ethical considerations such as informed consent, confidentiality of responses, and voluntary participation were strictly observed throughout the study.

### Presentation of Data

**Table 1: Demographic Characteristics of Respondents (N = 279)**

| Variable                   | Category         | Frequency (n) | Percentage (%) |
|----------------------------|------------------|---------------|----------------|
| <b>Gender</b>              | Male             | 158           | 56.6%          |
|                            | Female           | 121           | 43.4%          |
| <b>Age</b>                 | 18–25 years      | 72            | 25.8%          |
|                            | 26–35 years      | 118           | 42.3%          |
|                            | 36–45 years      | 63            | 22.6%          |
|                            | 46 years & above | 26            | 9.3%           |
|                            |                  |               |                |
| <b>Position</b>            | Manager          | 32            | 11.5%          |
|                            | Supervisor       | 48            | 17.2%          |
|                            | Chef             | 55            | 19.7%          |
|                            | Service Staff    | 119           | 42.7%          |
|                            | Others           | 25            | 9.0%           |
| <b>Years of Experience</b> | Less than 1 year | 41            | 14.7%          |
|                            | 1–3 years        | 96            | 34.4%          |

|                           |               |     |       |
|---------------------------|---------------|-----|-------|
|                           | 4–6 years     | 84  | 30.1% |
|                           | Above 6 years | 58  | 20.8% |
| <b>Type of Restaurant</b> | Small-sized   | 112 | 40.1% |
|                           | Medium-sized  | 97  | 34.8% |
|                           | Large chain   | 70  | 25.1% |

Table 1 presents the demographic characteristics of respondents from selected fast food restaurants in Warri metropolis, Delta State, Nigeria. Out of the 279 respondents, 158 (56.6%) were male while 121 (43.4%) were female, indicating that the fast food industry in Warri metropolis is slightly dominated by male employees. In terms of age distribution, the majority of the respondents, 118 (42.3%), were between 26–35 years, followed by 72 (25.8%) within the 18–25 years category. About 63 respondents (22.6%) fell within 36–45 years, while only 26 respondents (9.3%) were aged 46 years and above. This suggests that the workforce in the industry is largely youthful and within the productive age bracket.

Regarding job positions, the majority of the respondents, 119 (42.7%), were service staff, while 55 (19.7%) were chefs. Supervisors accounted for 48 (17.2%), managers

constituted 32 (11.5%), and 25 respondents (9.0%) were categorized as others. This distribution indicates that frontline service staff form the bulk of the workforce in fast food restaurants. Analysis of years of experience shows that 96 respondents (34.4%) had between 1–3 years of work experience, followed by 84 (30.1%) with 4–6 years. Those with more than 6 years of experience were 58 (20.8%), while 41 respondents (14.7%) had less than one year of experience. This suggests that most employees in the industry are relatively new but also have significant representation of moderately experienced staff. In terms of restaurant type, 112 (40.1%) were employed in small-sized fast food restaurants, 97 (34.8%) in medium-sized restaurants, and 70 (25.1%) in large chain restaurants. This shows that small and medium-sized restaurants dominate the fast food landscape in Warri metropolis.

**Table 2: Respondents’ Perception on JIT Practices and Operational Performance**

| S/N | Statement                                                                | SD<br>(1) | D<br>(2) | N<br>(3) | A<br>(4) | SA<br>(5) | Mean | Remark          |
|-----|--------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|------|-----------------|
| 1   | Our restaurant practices Just-In-Time in inventory management.           | 18        | 34       | 46       | 108      | 73        | 3.71 | Agreed          |
| 2   | JIT reduces food wastage and spoilage.                                   | 12        | 28       | 39       | 121      | 79        | 3.92 | Agreed          |
| 3   | JIT has helped to cut down operational costs.                            | 22        | 31       | 52       | 105      | 69        | 3.72 | Agreed          |
| 4   | JIT improves service speed and reliability in meeting customer orders.   | 14        | 24       | 40       | 118      | 83        | 3.95 | Agreed          |
| 5   | Supplier reliability is critical to the success of JIT practices.        | 10        | 20       | 36       | 115      | 98        | 4.11 | Strongly Agreed |
| 6   | Challenges in JIT implementation negatively affect operational outcomes. | 16        | 29       | 45       | 111      | 78        | 3.86 | Agreed          |

**Source:** Field Survey, 2025

Table 2 shows respondents’ opinions on the effect of Just-In-Time practices on the operational performance of fast food restaurants in Warri metropolis. The findings reveal that the majority of respondents agreed that their restaurants practice JIT in inventory management, with a mean score of 3.71. Respondents strongly affirmed that JIT reduces food wastage and spoilage (Mean = 3.92) and contributes to cost reduction (Mean = 3.72). On service delivery, respondents

agreed that JIT enhances speed and reliability in customer order processing (Mean = 3.95). Furthermore, supplier reliability was highlighted as a critical success factor for JIT practices, with the highest mean score of 4.11, suggesting that the efficiency of JIT operations is highly dependent on timely and consistent supplier performance. Respondents also agreed that challenges in JIT implementation negatively affect operational performance (Mean = 3.86).

**Table 3: Respondents' Perception on JIT Operations, Productivity, and Performance**

| S/N | Statement                                                                  | SD<br>(1) | D<br>(2) | N<br>(3) | A<br>(4) | SA<br>(5) | Mean | Remark |
|-----|----------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|------|--------|
| 1   | JIT practices help to improve employee productivity in the restaurant.     | 15        | 28       | 42       | 124      | 70        | 3.88 | Agreed |
| 2   | JIT contributes to better time management and workflow efficiency.         | 12        | 24       | 37       | 119      | 87        | 3.98 | Agreed |
| 3   | The adoption of JIT practices has enhanced overall restaurant performance. | 18        | 27       | 40       | 113      | 81        | 3.91 | Agreed |
| 4   | JIT leads to faster turnaround time in processing customer orders.         | 11        | 23       | 35       | 116      | 94        | 4.01 | Agreed |
| 5   | The restaurant's competitiveness has improved due to JIT operations.       | 16        | 30       | 41       | 115      | 77        | 3.88 | Agreed |
| 6   | JIT contributes to sustainable performance in the fast food industry.      | 14        | 26       | 38       | 118      | 83        | 3.95 | Agreed |

**Source:** Field Survey, 2025

Table 3 presents respondents' opinions on the effect of JIT operations on productivity and performance of fast food restaurants in Warri metropolis. The results show high levels of agreement across all statements. Respondents affirmed that JIT practices improve employee productivity (Mean = 3.88) and contribute to better time management and workflow efficiency (Mean = 3.98). Similarly, JIT was perceived to enhance overall restaurant performance (Mean = 3.91) and facilitate faster turnaround time in processing customer orders, which had the highest mean score (4.01). Respondents also agreed that JIT enhances competitiveness (Mean = 3.88) and contributes to sustainable performance in the fast food industry (Mean = 3.95).

### Discussion of Findings

The demographic findings provide useful insights into the structure of the fast food industry workforce in Warri metropolis. The slight male dominance suggests that certain operational tasks, possibly involving physical demands and extended working hours, may attract more male employees. However, the high proportion of female staff also highlights gender inclusiveness in the sector, especially in customer service roles. The age distribution reflects a youthful workforce, consistent with the fast-paced and labor-intensive nature of the industry. Younger employees are more likely to adapt to Just-In-Time (JIT) practices, which require speed, flexibility, and efficiency in service delivery. This aligns with prior studies that associate JIT success with an energetic and adaptable workforce. The high percentage of service staff (42.7%) underscores the customer-centric orientation of fast food restaurants. Since service staff directly interact with customers, their role is critical in ensuring service quality, prompt delivery, and cost efficiency, which are key dimensions of JIT practices.

The predominance of respondents with 1–3 years and 4–6 years of experience suggests a moderately experienced workforce, which can balance adaptability with accumulated industry knowledge. Such a workforce is vital for sustaining JIT operations, as employees with some experience are better positioned to handle the demands of inventory control, waste reduction, and timely service delivery. Finally, the dominance of small and medium-sized restaurants (74.9%) indicates that the implementation of JIT practices in Warri metropolis may vary across different business scales. Smaller restaurants may face challenges of limited supplier networks and resources, while larger chains may have structured systems for operational performance. Nevertheless, the widespread presence of smaller outlets suggests that any analysis of JIT effectiveness must consider the peculiarities of resource-constrained settings.

### The effect of instant service quality, cost, and delivery of local fast food restaurants in Warri metropolis

The findings from Table 2 indicate that JIT practices are actively recognized and applied within the fast food industry in Warri metropolis. This supports earlier studies that emphasize the role of JIT in minimizing waste, reducing costs, and improving service efficiency in the hospitality sector. The relatively high agreement levels across items show that employees perceive JIT as a strategy that positively impacts operational performance. Specifically, the high mean score on supplier reliability (4.11) suggests that external factors, such as the dependability of supply chains, play a pivotal role in ensuring the success of JIT systems. This aligns with the principle of JIT, which requires synchronized and timely supply of raw materials to support smooth operations.

Moreover, the agreement that JIT reduces food spoilage and enhances speed in service delivery shows

its direct relevance to customer satisfaction—an essential factor in the competitive fast food industry. However, respondents also recognized that challenges in JIT implementation can negatively affect operational outcomes, reflecting the fact that without proper planning, JIT may expose restaurants to risks such as supply delays and stock-outs. The study revealed challenges in JIT implementation, particularly with supplier reliability, which respondents ranked as a critical determinant of success. This finding differs somewhat from Furlan et al. (2011), who emphasized the complementarity of upstream supplier integration and downstream customer satisfaction in achieving high operational performance. In the Warri context, unreliable supply chains, frequent power outages, and infrastructural deficiencies hinder seamless JIT adoption. These challenges are socio-economically rooted, as many local suppliers operate informally and lack logistics efficiency, creating risks of stockouts and delays. In summary, the findings stress that JIT practices, when effectively implemented, contribute to cost efficiency, improved productivity, and better service performance in fast food restaurants in Warri metropolis.

#### **The implementation of JIT practices on the operational performance and productivity of fast food restaurants.**

The findings from Table 3 clearly suggest that JIT operations significantly influence productivity and performance outcomes in fast food restaurants. The respondents recognized that JIT helps streamline workflow and improve time management, which is critical in the fast-paced nature of food service. This finding aligns with the JIT philosophy that emphasizes waste reduction, efficiency, and responsiveness to customer demand. The highest-rated statement—that JIT leads to faster turnaround time in customer order processing (Mean = 4.01)—highlights the direct impact of JIT on customer satisfaction. In the hospitality industry, service speed is a major competitive factor, and JIT enables restaurants to respond swiftly to fluctuating demand without compromising quality.

Furthermore, the findings that JIT contributes to competitiveness (Mean = 3.88) and sustainability (Mean = 3.95) show that restaurants that adopt JIT practices are better positioned to maintain long-term operational performance and remain resilient in a highly competitive market like Warri metropolis. The implications of these findings are multifaceted. First, they demonstrate that JIT is a viable operational strategy for fast food restaurants in Warri, capable of improving customer satisfaction through reduced waiting time and improved quality of service. The results of this study reveal that Just-In-Time (JIT) practices positively influence operational performance

in fast food restaurants in Warri metropolis. Respondents affirmed that JIT reduces food spoilage, minimizes costs, improves employee productivity, and enhances service delivery speed. These findings align with Belekoukias et al. (2014), who observed that JIT and automation significantly improve efficiency in manufacturing organizations, particularly in areas of cost, quality, and delivery. Similarly, Agu et al. (2016) reported that JIT has a significant effect on firm growth and efficiency, which resonates with this study's findings that JIT contributes to competitiveness and sustainability in the fast food sector. This agrees with Chien and Lin (2015), who highlighted the importance of minimizing perceived waiting time in food service settings. Second, the findings stress that without robust supplier networks and infrastructural support, JIT's potential cannot be fully realized. This echoes Green et al. (2014), who argued that the success of JIT depends on supply chain strategies. The results suggest that while JIT enhances performance in Warri's fast food industry, full optimization requires addressing local infrastructural, supply, and cultural challenges. Overall, these findings reinforce the argument that JIT operations not only enhance internal efficiency but also provide strategic advantages by boosting productivity, improving customer service, and sustaining competitiveness in the fast food industry.

#### **Conclusion and Policy/Managerial Implications**

This study, titled *Just-In-Time Practices and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria*, investigated how JIT influences service quality, cost, delivery, and productivity. The objectives were to evaluate JIT adoption, its effect on operational performance, and its role in enhancing productivity. Findings revealed that JIT reduces waste, cuts costs, improves workflow efficiency, and strengthens competitiveness. However, unreliable suppliers, poor infrastructure, and unstable electricity supply remain key barriers to full implementation.

#### **Policy and Managerial Implications**

1. **Supplier Partnerships** – Fast food operators should sign long-term supply agreements with Warri-based farmers and distributors to ensure timely delivery and reduce dependence on inconsistent markets.
2. **Energy Solutions** – Managers should adopt hybrid energy (solar + generator backup) to power cold storage and maintain JIT efficiency despite frequent outages.
3. **Joint Procurement Hubs** – Policymakers can support restaurant clusters to form cooperative

purchasing hubs in Warri, reducing logistics cost and increasing supplier accountability.

4. **Staff Capacity Development** – Owners should introduce lean-service training workshops tailored to peak traffic periods (e.g., lunch rush) to strengthen workflow under JIT.
5. **Infrastructure Support** – Local government should prioritize rehabilitating feeder roads around Warri's major food markets (Igbudu, Effurun) to improve supply chain reliability.

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## Digital Forensic Tools and the Performance of Small and Medium Enterprises in Delta State, Nigeria

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### **Abstract**

*Small and medium-sized enterprises are vital contributors to economic growth, poverty reduction and employment generation in Nigeria; however, these enterprises are highly vulnerable to fraud, financial irregularities and operational inefficiencies due to weak internal controls and limited resources. In recent times, digital forensic tools have emerged as innovative solutions for detecting, preventing, and mitigating fraudulent practices within organizations. Despite their growing relevance, adoption and effectiveness of such tools in improving the performance of small and medium-sized enterprises in Delta State, Nigeria remain underexplored. This study therefore investigates the effectiveness of digital forensic tools in enhancing the performance of small and medium-sized enterprises in Delta State which constitute population of the study. The study employed a descriptive survey design, by administering questionnaire to 214 accountants in different categories of SMEs in Delta State. Data obtained were analyzed using regression and findings revealed a significant positive relationship between digital forensic tools, financial accountability, internal control, and financial performance of SMEs in Delta State. It thus means that the adoption of digital forensic tools can enable small and medium-sized enterprises' detect fraud, ensure financial accountability and improve their overall performance. The implication of the finding is that small and medium-sized enterprises that effectively utilize digital forensic tools report better decision-making, enhanced internal controls, and increased stakeholder confidence compared to those without adoption of digital forensic tool. The study concludes that digital forensic tools are critical enablers of fraud prevention and performance improvement of small and medium-sized enterprises. The study recommends increased investments in digital forensic technologies, capacity-building for accountants, and policy interventions to support small and medium-sized enterprises in adopting cost-effective forensic solutions.*

**Keyword:** Digital forensic tools, Small and medium-sized enterprises; Fraud detection; Internal control; Financial accountability; Performance

### **Introduction**

Small and Medium-sized Enterprises (SMEs) play a critical role in driving economic growth, job creation, and innovation in Nigeria (SMEDAN, 2022). Despite their importance, SMEs in Delta State face persistent challenges of fraud, weak internal controls, and financial mismanagement, which hinder sustainable performance (Okoye & Gbegi, 2013; Abeki, 2023). The increasing complexity of financial crimes has necessitated the adoption of digital forensic tools to enhance fraud detection and accountability (Kranacher, Riley, & Wells, 2019; Akande, Benjamin & Umukoro, 2024). However, the extent to which these tools improve SMEs' performance in developing economies remains underexplored (Akinyomi, 2021). This study therefore investigates the effectiveness of digital forensic tools in enhancing the performance of SMEs

in Delta State, Nigeria. Digital forensic serves as an intelligence tool and systematic procedure to examine digital records by uncovering financial irregularities while at the same time, maintaining professional and ethical standards (Amahi, 2023; Aminat, Ezekiel & Obafemi, 2023). Digital forensic in the context of SMEs refers to the investigative process carried out when financial fraud, data breaches, or irregularities occur within their digital systems and networks.

SMEs often lack strong internal control systems, making them prime targets for financial manipulation and data breaches (Bierstaker et al., 2006). To address these challenges, digital forensic tools have emerged as essential instruments for detecting, preserving, and analyzing electronic evidence in a legally admissible manner (Casey, 2011). Such tools are particularly useful in uncovering concealed transactions, unauthorized modifications, and fraudulent activities

within SME accounting systems (Nigrini, 2020). SMEs often face strict compliance requirements in fraud prevention and data protection. Digital forensic tools support regulatory compliance by preserving electronic evidence and monitoring financial activities (Ogwiji, 2023; Ubesie, Ibezim & Cyriacus, 2023). This reduces exposure to fines, penalties, and litigation, contributing to improved financial performance (Horsman, 2019).

Most studies on use on digital fraud tools focus on large corporations, banks or public sector sectors organizations leaving a gap in understanding how digital forensic tools affect SMEs performance in specific regions like Delta State. Forensic examiners rely on a variety of tools to analyze evidence collected at a crime scene, with the choice of tool depending on the type of digital forensics being conducted, such as mobile, network, or database forensics. This study focused on how digital forensic tools can be used by SMEs to strengthen financial reporting credibility and reduce the risks of error and fraud.

### **Objectives of the Study**

This study investigates the effect of digital forensic tools on small and medium-sized enterprises' performance in Delta State. On the basis of the above, the following were the specific objectives of the study:

- (i) To determine whether digital forensic tools improve financial accountability of SMEs in Delta State.
- (ii) To ascertain whether digital forensic tools enhance internal control of SMEs in Delta State.
- (iii) To examine the effect of digital forensic tools on financial performance of SMEs in Delta State

### **Review of Related Literature**

#### **Small and Medium-sized Enterprises (SMEs) and Digital Forensic Tools**

Small and Medium-sized Enterprises (SMEs) are often considered the foundation of developing economies, playing a vital role in their overall growth and contribution. to employment creation, innovation, and aggregate gross domestic product (GDP). In Nigeria, SMEs account for over 90% of businesses and employ a large portion of the workforce (SMEDAN, 2022). Despite their importance, SMEs face challenges such as weak financial management, susceptibility to fraud, and limited adoption of advanced/improved technologies. Fraudulent practices - including financial statement manipulation, payroll fraud, and asset misappropriation have been reported as common threats to SME sustainability (Okoye & Gbegi, 2013; Ubesie, Ibezim & Cyriacus, 2023).

On the other hand, digital forensic tools are technological applications designed to collect, preserve,

analyze, and interpret electronic data for use in detecting and preventing fraud or other financial irregularities (Victory, Promise & Mike, 2022). Examples include data mining software, forensic accounting applications, enterprise resource planning (ERP) audit modules, and AI-driven fraud detection systems. These tools allow accountants and auditors to trace suspicious transactions, identify anomalies, and ensure compliance with regulatory frameworks (Kranacher et al., 2019; Kranacher, 2021). For SMEs, adoption of such tools can provide transparency, build investor confidence, and improve decision-making.

Digital forensics tools have allowed for fast and reliable data acquisition and analysis, which is imperative in a world where information can disappear quickly (Crane, 2013; Agboare, 2021). The digital forensic tools used by SMEs are designed to maintain the integrity of digital evidence while ensuring accuracy and repeatability of findings (Carrier, 2005). In business and accounting contexts, digital forensic tools are increasingly applied to detect fraud, unauthorized data manipulation, and financial irregularities (Nigrini, 2020, Adesina, et al, 2020). Computer forensics developed as a response to the growing incidence of crimes involving computer systems—whether as the target of the crime, a tool used to perpetrate it, or a storage medium for evidence related to criminal activities (Baryamureeba & Tushabe, 2004; Agarwal, et al, 2011; Adam, Zakari Bello, 2023).

#### **Digital Forensic Tools and SMEs' Performance**

Performance in SMEs can be measured from both financial and non-financial perspectives. Financial indicators include profitability, revenue growth, and return on investment, while non-financial indicators include employee productivity, customer satisfaction, and internal process efficiency (Madu-Chima, Egbunike & Okoro, 2020). Recent studies suggest that technology adoption such as digital forensic tools has the potential to enhance SME performance by strengthening internal control systems, reducing fraud losses, and promoting accountability (Akinyomi, 2021). In Nigerian businesses, digital forensic tools mirror those utilized globally, encompassing commercial solutions such as Cellebrite, Magnet AXIOM, EnCase, and FTK Imager, as well as open-source alternatives like Autopsy, The Sleuth Kit, and Wireshark. These tools play a critical role in diverse applications, including fraud detection, investigations of intellectual property theft, and ensuring compliance with regulatory standards across financial institutions and corporate entities.

A study on South African SMEs emphasizes the need for digital forensic readiness, where organizational characteristics such as IT skills, available funds, size, and public profile influence readiness strategies. The

research notes that optimizing digital forensic readiness is crucial, as smaller organizations are particularly vulnerable to criminal incidents that can threaten their survival. This underscores how forensic preparedness can protect SME performance and continuity. SMEs that employ forensic tools are better equipped to comply with regulatory requirements, reducing the risk of penalties and reputational damage (Adebisi & Gbegi, 2013). Adopting forensic technologies signals transparency and reliability, which strengthens the reputation of SMEs. A positive reputation not only attracts customers but also fosters partnerships and investment opportunities, improving market competitiveness (Aderibigbe & Bala, 2021). Furthermore, digital forensic tools help SMEs identify operational inefficiencies caused by data manipulation or cyber threats, allowing management to implement corrective strategies (Casey, 2011). Their use also minimizes downtime from cyber attacks by enabling rapid response and evidence recovery (Agarwal et al., 2011). As a result, business continuity is maintained, ensuring stable revenue generation. Digital forensic provides SMEs with investigative capacity that supports transparency and enhances trust among stakeholders and customers. Ultimately, the integration of forensic tools empowers SMEs to balance growth objectives with the need for robust fraud detection and risk management. Overall, digital forensic tools enhance the accuracy, speed, and reliability of fraud detection in organizations.

Digital forensics assists businesses in responding to financial and cyber-related incidents by minimizing losses and facilitating recovery. Through the examination of compromised accounting and operational systems, organizations can identify weaknesses and implement stronger internal controls. In Nigeria, where cases of fraud and digital crimes affecting enterprises continue to increase, the adoption of effective digital forensic practices has become essential for safeguarding business performance and sustainability.

### Theoretical Underpinning

This study was anchored on the Fraud Triangle Theory as advocated by Cressey in 1953 (cited by Oyedokun (2020)). The fraud triangle theory explains that fraud occurs when three factors coexist: pressure, opportunity, and rationalization. Digital forensic tools

reduce the *opportunity* element by strengthening, monitoring and detection mechanisms in SMEs. Forensic accountants are skilled in detecting and preventing fraud by strengthening internal control systems, performing comprehensive audits, and analyzing financial records to uncover irregularities or anomalies that could signal fraudulent practices. By reducing opportunities for fraud, forensic accountants help to prevent instances of corruption and bribery within the private sector.

The relevance of the fraud triangle theory to this current study is that when fraudsters perceived opportunity to commit frauds, with the use of digital forensic tools the perceived opportunity by fraudsters to commit fraud can be reduced by way of monitoring, putting in place fraud detection mechanisms and by strengthening internal control measures. By so doing, internal controls, financial accountability and financial performance of SMEs can be enhanced.

### Methodology

This study examined the effectiveness of digital forensic tools in improving the performance of SMEs in Delta State, Nigeria. The population comprises those operating in both the metropolitan and the non-metropolitan areas of Delta State. A structured questionnaire served as the primary research instrument and was administered to accountants drawn from each enterprise. Due to the large population of SMEs in Delta State, convenience sampling was employed to select 214 accountants, based on their accessibility. The questionnaire was designed to capture data on both the dependent variable (SMEs' financial accountability, internal control, and performance) and the independent variable (digital forensic tools).

Furthermore, to ensure the reliability of the instrument, it was administered to twenty-one (21) respondents, representing 10% of the sample size who are accountants employed in SMEs located in other states of the Nigerian federation. The pilot test results were assessed using Cronbach's Alpha, yielding coefficients of 0.86 for digital forensic tools, 0.88 for financial accountability, 0.81 for internal control and 0.78 for performance. Data collected were analyzed using descriptive statistics (frequency counts, simple percentages, mean, standard deviation, Pearson correlation) and inferential statistics (simple regression). The model of the study is given as follows:

$$\begin{aligned} \text{SMEFacc} &= (\text{Dftol}) & [\text{Eq. 1}] \\ \text{SMEIntcol} &= (\text{Dftol}) & [\text{Eq. 2}] \\ \text{SMEPerf} &= (\text{Dftol}) & [\text{Eq. 3}] \end{aligned}$$

Equations 1-3 are the implicit forms of the regression models showing the relationships between digital forensic tools, financial accountability, internal control and financial performance of SMEs. The explicit forms of the regression models were estimated as equations 4-6 as follows:

$$\text{SMEFacc} = \alpha_0 + \alpha_1 \text{Dftol}_i + \varepsilon_i \quad [\text{Eq. 4}]$$

$$\text{SMEIntcol} = \alpha_0 + \alpha_1 \text{Dftol}_i + \varepsilon_i \quad [\text{Eq. 5}]$$

$$\text{SMEPerf} = \alpha_0 + \alpha_1 \text{Dftol}_i + \varepsilon_i \quad [\text{Eq. 6}]$$

Where:

SMEFacc is financial accountability;

SMEIntcol is internal control;

Perf is performance;

SMEs is small and medium-sized enterprises;

$\alpha$  regression coefficient;

$\varepsilon$  is error term

$i$  is individual respondents.

## Results

Table 1: Demographic Variables of Respondent

| Ranks | Variable                | Respondents            | Frequency N= 214 | Percentage (%) |
|-------|-------------------------|------------------------|------------------|----------------|
| 1.    | Gender                  | Male                   | 169              | 80             |
|       |                         | Female                 | 45               | 20             |
|       |                         | Total                  | 214              | 100            |
| 2.    | Age                     | 21 – 30                | 12               | 06             |
|       |                         | 31 – 40                | 33               | 15             |
|       |                         | 41 – 50                | 121              | 57             |
|       |                         | 51 and above           | 48               | 22             |
|       |                         | Total                  | 214              | 100            |
| 3.    | Marital Status          | Single                 | 37               | 17             |
|       |                         | Married                | 177              | 83             |
|       |                         | Total                  | 214              | 100            |
| 4.    | Category of Respondents | Chartered Accountants  | 67               | 31             |
|       |                         | Management Accountants | 15               | 07             |
|       |                         | Auditors               | 93               | 44             |
|       |                         | Forensic Accountants   | 39               | 18             |
|       |                         | Total                  | 214              | 100            |
| 5.    | Service Years           | 5-10                   | 82               | 38             |
|       |                         | 11- 15                 | 108              | 51             |
|       |                         | 16 and above           | 24               | 11             |
|       |                         | Total                  | 214              | 100            |

Source: Compiled by the Researcher (2025)

Table 1 is the demographic variables of respondents; the result revealed that majority of the respondents representing 169(80%) were males while only 45(20%) were females. Also, it was found that majority of the respondents were within age brackets 41-50 representing 121(57%); this was accompanied by 51years and above, representing 48(22%), 31-40 years, representing 33(15%) and lastly, 21-30years, representing 12(6%). The marital status of respondents

revealed that majority of the respondents were married representing about 177(83%) while 37(17%) were single.

Furthermore it was found that majority of the sampled respondents were Auditors (internal and external auditors) representing 93(44%) and Chartered Accountants representing 67(31%) who are considered knowledgeable on issues of digital forensic tools. Finally, it was found that majority of the respondents

had worked with their SMEs for 11-15 of service years, representing 108(51%); this was accompanied by 5-10 of service years, representing 82(38%) while the

remaining respondents, 16years and above was represented by 24(115)

**Table 2: Descriptive Results Perceived Digital Forensic Tool for Fraud Detection**

|                  | Fraud Detected | Fraud Not Detected | Total      |
|------------------|----------------|--------------------|------------|
| Adopted (Yes)    | 121(56.2%)     | 45(20.9%)          | 166(77.1%) |
| Not Adopted (No) | 23(10.9%)      | 25(11.9%)          | 48(22.9%)  |
| <b>Total</b>     | 144(67.3%)     | 70(32.7%)          | 214 (100%) |

Source: Compiled by the Researcher (2025)

Out of 214 SMEs, majority (77.1%) reported using digital forensic tools, while only 22.9% did not. Among those that used the tools, 72.9% (121 out of 166) detected fraud, while 27.1% did not detect fraud.

In contrast, among SMEs that did not use the tools, 47.9% (23 out of 48) detected fraud, while 52.1% did not detect fraud. Overall, across the sample, 67.3% of SMEs detected fraud while 32.7% did not detect fraud.

**Table 3: Pearson Correlation**

| Variables | SMEFacc | SMEIntcol | SMEPerf | Dftol  |
|-----------|---------|-----------|---------|--------|
| SMEFacc   | 1.0000  |           |         |        |
| SMEIntcol | 0.0221  | 1.0000    |         |        |
| SMEPerf   | 0.03311 | 0.0387    | 1.0000  |        |
| Dftol     | 0.0214  | 0.1049    | 0.2119  | 1.0000 |

Source: Compiled by the Researcher (2025)

The Pearson correlation results (Table 3) revealed that Pearson correlation coefficients showed positive relationship between digital forensic tools, financial accountability, internal control, and financial

performance of SMEs in Delta State. This means that there is positive relationship between digital forensic tools and financial accountability, internal control, as well as financial performance of SMEs in Delta State

**Table 4: Regression Results for Digital Forensic Tools and Financial Accountability**

| Estimator          | Predictors | t-value               |
|--------------------|------------|-----------------------|
| R-Squared          | 0.5119     | SMEFacc = 4.23        |
| Adjusted R-Squared | 0.5008     | T-Probability = 0.000 |
| F-Ratio            | 14.61      |                       |
| Probability. F     | 0.000      |                       |

Source: Compiled by the Researcher (2025)

Table 4 is the regression result for digital forensic tools and financial accountability of the SMEs in Delta State. The regression results showed that  $R^2$  is 0.5008; indicating that digital forensic tools explained about 51% of the systematic variation in financial accountability of the selected SMEs in Delta State.. Thus, the model of digital forensic tools and financial accountability offers a good fit to the dataset of the study.

The F-ratio is 14.61 and this suggests that digital forensic tools significantly influence financial accountability of the SMEs in Delta State. In addition, the t-value suggests that digital forensic tools positively significantly affect financial accountability of SMEs in

Delta State, Nigeria. This finding agrees with the results of Oyedokun (2020) and Popoola, et al (2019) who found significant influence of forensic tools on fraud detection, controls and performance of companies.

**Table 5: Regression Results for Digital Forensic Tools and Internal Control**

| Estimator          | Predictors | t-value                  |
|--------------------|------------|--------------------------|
| R-Squared          | 0.7100     | Internal Control = 5.99. |
| Adjusted R-Squared | 0.6014     | T-Probability = 0.000    |
| F-Ratio            | 23.02      |                          |
| Probability. F     | 0.000      |                          |

Source: Compiled by the Researcher (2025)

Table 5 is the regression result for digital forensic tools and internal control of the SMEs in Delta State. The regression results showed that  $R^2$  is 0.7100; indicating that digital forensic tools explained about 71% of the systematic variation in internal control of the selected SMEs in Delta State.. Thus, the model of digital forensic tools and internal control provides a good fit to the dataset of the study.

The F-ratio is 23.02 and this suggests that digital forensic tools significantly influence internal control of the SMEs in Delta State. In addition, the t-value suggests that digital forensic tools positively significantly affect internal control of SMEs in Delta State, Nigeria. This finding agrees with the results of Oyedokun (2020) and Popoola, et al (2019) who found significant influence of forensic tools on fraud detection, controls and performance of companies.

**Table 6: Regression Results for Digital Forensic Tools and SMES Financial Performance**

| Estimator          | Predictors | t-value               |
|--------------------|------------|-----------------------|
| R-Squared          | 0.8710     | Performance = 8.66    |
| Adjusted R-Squared | 0.7222     | T-Probability = 0.000 |
| F-Ratio            | 33.42      |                       |
| Probability. F     | 0.000      |                       |

Source: Compiled by the Researcher (2025)

Table 6 is the regression result for digital forensic tools and financial performance of the SMEs in Delta State. The regression results showed that  $R^2$  is 0.8710; indicating that digital forensic tools explained about 87% of the systematic variation in financial performance of the selected SMEs in Delta State.. Thus, the model of digital forensic tools and internal control provides a good fit to the dataset of the study.

The F-ratio is 33.42 and this suggests that digital forensic tools significantly influence financial performance of the SMEs in Delta State. In addition, the t-value suggests that digital forensic tools positively significantly affect financial performance of SMEs in Delta State, Nigeria. This finding agrees with the results of Oyedokun (2020) and Popoola, et al (2019) who found significant influence of forensic tools on fraud detection, controls and performance of companies.

**Conclusion and Recommendations**

Digital forensic tools have become indispensable for strengthening the financial and operational resilience of Small and Medium-sized Enterprises (SMEs) in Delta State. Their application not only enhances fraud detection and error prevention but also promotes accountability, transparency, and compliance with regulatory standards. Given that SMEs in Delta State often operate with limited resources and weak internal control systems, the integration of forensic tools offers a cost-effective means of safeguarding digital assets and financial records. The study confirms that digital forensic tools are highly effective in strengthening SMEs' operations. Specifically, they enhance fraud detection, improve financial performance and significantly strengthen financial accountability and

internal controls. Thus, digital forensic tools play a vital role in reducing fraud risk, boosting transparency, and ensuring better financial outcomes for SMEs.

Moreover, these tools support better decision-making by providing reliable data analytics and evidence preservation. The adoption of forensic technologies can also foster greater stakeholder confidence, as investors and regulators place increasing value on integrity and credibility in business practices. In a competitive and fraud-prone environment like Nigeria, SMEs that embrace digital forensic tools are more likely to sustain growth, mitigate risks, and achieve long-term survival. Based on the findings, the study recommends that SMEs in Delta State should be encouraged to adopt digital forensic tools as part of their standard accounting and auditing practices, since they demonstrably improve fraud detection and accountability. In addition, training programs should be organized for accountants, auditors, and managers to improve their digital forensic skills and ensure effective tool utilization.

Furthermore, government and regulatory agencies should provide incentives (such as tax breaks or grants) to SMEs that adopt forensic tools, encouraging widespread use. Also, digital forensic tools should be embedded into SMEs' internal control frameworks to strengthen fraud prevention and ensure better monitoring of financial activities. Overall, professional accounting bodies and SMEs associations should raise awareness about cost savings, fraud reduction, and performance benefits of digital forensic adoption.

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## Cost of Capital on Financial Performance of Selected Quoted Consumer Goods Companies

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### Abstract

*The study examined the effect of cost of capital on financial performance of selected quoted consumer goods companies in Nigeria. The specific objectives were to ascertain the effect of weighted average cost of capital on financial performance of listed consumer goods companies in Nigeria and to determine the effect of market value of equity on financial performance of listed consumer goods companies in Nigeria. The study adopted ex-post facto research design. The study data were sourced from annual financial statement of ten selected consumer goods companies in Nigeria. The stated hypotheses were analysed with descriptive statistic, correlation coefficient and panel regression. The correlation coefficient result revealed that weighted average cost of capital and market value of equity have positive relationship with financial performance of listed consumer goods companies in Nigeria. The panel regression revealed that weighted average cost of capital had positive and significant effect on financial performance of selected listed consumer goods companies in Nigeria and Market value of equity had positive and significant effect on financial performance of selected listed consumer goods companies in Nigeria. It was recommended that listed consumer goods companies should continue to embrace the use of equity financing. In conclusion, effective and efficient cost of capital will enhance the financial performance of consumer goods companies.*

**Key words:** financial performance, consumer goods, weighted cost of capital, market value

### Introduction

The manufacturing sector of any economy is the key sector that springs up the availability of goods and services for human consumption and supply of raw materials for other sectors to grow by taking into consideration shareholders value creation and wealth maximization. The main goal of corporate organizations are to improve financial performance, minimize the cost of capital, create value, and provide dividends to shareholders (Khan, Mustafa, & Abu, 2022). Unfortunately, the separation of ownership from control engenders a specific issue known as the agency dilemma, arising from conflicting interests, along with its associated repercussions and cost implications. A way to figure out an organization's cost of capital that takes into account both its own money and money that its sourced from external ways and means as the average cost of capital (WACC). The firm's financing choice is substantially swayed by the cost of capital, which acts as a vital link between the investment decision and the financing decision (Rasheed & Siddiqui, 2019; Isaac & Marshal, 2020; Ahmed et al., 2021).

The cost of capital has a big impact on financial success, because it determines investments, profits, the value of the business, and loan payments

(Ibrahim, Abdelkarim, Muktar & Peter, 2021). To get the best financial results and the most value for shareholders, the cost of cash and investment returns must be perfectly balanced. In Nigeria of today, the manufacturing industries are marked by escalating production costs attributed to elevated tariffs, increasing energy input expenses, high financing prices, and a shortage of foreign currency (FX), insufficient infrastructure, among other factors, such that the industrial capacity utilisations have been consistently low in recent years, averaging 57.8 percent in 2019. (Chukwu & Nduka, 2022).

However, researches have attributed several factors like the insufficient infrastructure, high energy costs, and restricted access to finance, high capital costs, ineffective governance structures, unstale financial system, agency costs, and informational asymmetries to have contributed to Nigeria's low manufacturing capacity utilisations, thereby making businesses to pay a lot to borrow money since they can't get credit easily or the interest rates are too high (Yusuf & Mbatuegwu, 2021). Notwithstanding, the high demand for consumer goods across the globe have made many organizations to capitalise on the opportunity to provide consumer-packaged items to meet these needs. Yinka (2019) noted that the Director General of the Manufacturers Association

in 2018 observed that over 50 percent (%) of manufacturing sub-sectors had experienced a decline in profitability of 2017 and perhaps may have led to closure of some factories. The buildup of debt and the failure to repay loans to creditors are the primary causes of the financial crisis and bankruptcy faced by several firms.

### Statement of Problems

The 2008 global economic crisis which originated in the United States and subsequently affecting several nations, including Nigeria, has affected the input of costs of capital and other expenses for enterprises. Certain companies for instance; Enron, Maxwell Communications, and Cadbury, were declared bankrupt owing to accumulated debt resulting from superb performance attributed to accelerated capital costs (Abubakar, Oluwafemi & Esenohor, 2022). This cost of capital constrains the ability to pursue lucrative ventures and grow operations. One of the disadvantages of cost of capital is the reduction in profitability, because firms find it challenging to produce returns that surpasses cost of finance (Ibrahim, Abdelkarim, Mukhtar & Peter, 2021). This allegedly has reduced the values of shares, eroded investors confidence, and distorted the strengths of many companies that engaged in consumer goods. In Nigeria, the rise in the rate of cost of capital is alarming and this has created a wide gap in literature in and across border.

Nworie, Onyeka and Anaike (2023), argued that the effect goes beyond individual businesses and have rippled negative effect on the economy because, an unfair cost of capital has an attribute of crumbling the economic growth, job creation and reduces the overall development of a society. Orji and Agubata (2021), Ibrahim, Mukhtar, Abdulkarim, (2021), and Giwa (2019), in a separated studies narrated the resulting conflicts in empirical evidence on the exclusively appraised of either the cost of capital on firm performance and economic performance with divergent views and recommendations. Hence, the motivation of this study arose from the deficiencies and gaps in literature. indicating a need for a comprehensive examination of cost of capital with the following objectives.

1. To ascertain the effect of weighted average cost of capital on financial performance of listed consumer goods companies in Nigeria
2. To determine the effect of market value of equity on financial performance of listed consumer goods companies in Nigeria.

### Review Of Related Literature

#### Market value of equity

When making an investment selection, fiscal performance is a major consideration for many organizations that optimizes profits. If an enterprise wants to keep its high firm value and attract investors, it has to improve its fiscal performance. Alternatively, stock price movements are always reflective of an enterprise's fiscal health; nonetheless, there are situations when other factors have a greater sway on stock price movements than the firm's

health. Investors' opinions on an enterprise's worth determine its Market Value of Equity (MVE). Observed in Shea (2019), market capitalization, or MVE, is the sum of an enterprise's share values or multiplying the sum of outstanding shares by the closing price of the enterprise's shares yields the MVE. The market value of equity measures a security's worth by comparing its share price to the amount of dividends given out each year, hence MVE is tied to stock prices. Stockholders' dividends are defined as a percentage of an enterprise's stock market price. When deciding whether or not to put money into an investment, the idea of the equity's market value is crucial.

For income-focused investors, the market value of stock is also quite important. Considering the present value of the stock on the market. The market's valuation of an enterprise is reflected in its equity market value. Management-created value (MVE) is therefore a proxy for management-created value beyond the value of investors' money. Since the market value of debt is often unavailable, the market value of equity and book value of debt are the two components that make up a public limited enterprise's market value. an enterprise's MVE indicates the quality of its investors.

#### Weighted Average Cost of Capital

An organization's total cost of capital, including debt, equity, market value, and taxes, is known as the weighted average cost of capital, or WACC. The sum of all the money that the enterprise has spent on its assets, broken down by the percentage that each part of the capital makes up. Due to inadequate funding, several startups failed during the first few years of operation. The same holds true for how an enterprise funds its working capital operations and investments; these factors determine the enterprise's viability. Internally, an enterprise may use its profits to support operations, and externally, it can raise capital via the sale of shares to the public for subscription or the taking out of loans. The borrowings made by businesses in the form of bonds or debentures are often referred to as debt, while equity refers to the sale of shares to the public as a whole. Mumtaz, Rauf, Ahmed, and Noreen (2013) argued that equity market has a trivial role in meeting financing needs of firms compared to the total amount of bank credit in issue.

However, Myers theoretical perspective of (1984) maintained that equity is not the best way to raise capital because investor's view managers issuing new equity as taking advantage of the firm's overvaluation. An enterprise may choose between three different financing options when working with an external source; all debt, all equity, or a combination of the both. (Ohayemi, & Fakayode, 2021). Gurnam (2012), subscribed to the view that whenever funds have to be secured, the financial manager should weigh the rewards and disadvantages of the various sources of funds and choose the more profitable sources keeping in view the expected capital structure. Okolo, Okwu, Ugwuoke and Kornom-Gbaraba (2019) argued that choice of any corporate body to structure its equity

financing in this era has become a thing of concern. Hence, it has become necessary for the firm's management to describe the cost of their loans and equity when selecting the ideal resources, and appraise the implications of these costs on the firm's fiscal performance. Utilising the right combination of funds may bring down the price. The worth of an enterprise and its economic profit are both enhanced when the financing cost declines. Management relies on the financing cost concept when making decisions, however there is currently no accepted way to calculate the WACC, especially for equity financing (Chen, Jorgensen & Yoo, 2004). In computing for cost of debt, only the returns that creditors anticipate are computed, while the Cost of Equity (COE) just analyses the returns that owners anticipate, but WACC encompasses the total cost of capital metric making it a more accurate reflection of the real cost of capital.

### Financial Performance

One of the management methods that is utilised to assess the effectiveness of directing and controlling the application of fiscal resources and resources into an organisation is performance. Opuene (2022) opined that performance is a subjective measurement that represents how well a firm is able to produce revenues and utilise assets that are located in its major business location. Financial performance is a means to assesses how effectively businesses utilise their resources in creating returns (Bacha & Attia, 2016). Financial performance is a vital tool for many stakeholders in an enterprise since it measures how well firms use their resources and an objective measure of how successfully an enterprise uses assets from its principal method of operation to create revenues.

Many variables have been employed to measure and represents financial performance and one of such is return on assets (ROA) which refers to the capacity of a business unit to acquire a certain quantity of assets that are held by the business unit. ROA is a statistic that provides the stakeholders with information about the efficiency and how a firm utilises its assets to create money. The net income that is created by all assets is what is referred to as the rate of ROA. Abbadi and Abu-Rub (2016) argued that the ROA is a performance indicator that shows the relative profitability of a business endeavour during a certain time period. It assesses the efficiency with which an enterprise's assets are utilised to create cash. These assets are either obtained via the purchase of debt from debt holders or through the purchase of stock from shareholders. ROA is a measure that indicates how lucrative a firm is in comparison to the total assets.

### Firm Size

The firm size as a moderating variable may be considered as one of the factors that might sway profits. In most cases, the amount of return and profitability is determined by the size of the firm. As the size of an organisation grows, it may be exposed to a greater sum of hazards and have access to a greater sum of resources. As a result, bigger firms

are more likely to execute an enterprise resources program. The empirical researches have as proven with evidence that there is a substantial favourable association between the size of the enterprise and the adoption of enterprise programs. Against the study of Okolo *et al.* (2019), that observed that the financing cost has an unfavourable correlation with the firm size. However, bigger firms perhaps choose a more riskier investment owing to the profitability level of such Investment than a smaller firms that are risky averse in nature. Firm size and financial performance are positively or negatively correlated depending on the size and structures of operations.

### Theoretical Framework

An explanation for managers' investment financing choices is the pecking order theory as proposed 1961 by Donaldson's but modified in Myers and Majluf (1984). The propounder of this theory argued that internal financing is the most practical and cost-effective option for satisfying external stakeholders' demands for better returns. The pecking order idea is that, organisations' preferred methods of funding are ranked in order of preference such that retained profits should come first, thereafter issuance of debt, and lastly, the issue of stock.

This theory further estimated that large companies would make references to to use internal source of financing to generate more capital for internal financing needs, if necessary, the company seeks external sources of debt. If a company uses internal funds to experience a financial deficit, they will prefer to use safe funds, namely debt than equity source of financing. Octavia, Wicaksono, Sari, & Mambay (2021).

Myers and Majluf's (1984) postulated that insiders and outside investors share irregular information. Managers have an insider's view of the enterprise's real worth in comparison to outside investors. The consequences of taxes, the cost of distributing new shares, intervention expenses, and the economic pain of the enterprise prospects are not considered by pecking order theory, which is among its many shortcomings.

Khan and Nafees (2013) argued that the allowance of a perfect market, preference for internal finance over debt, and absence of an objective capital structure are all assumptions are all the assumptions made in using pecking order theory. Internally generated funds, debt issuance, and equity issuance are the three pillars upon which pecking order is rested. A business should tap into its own cash reserves before turning to external sources of funding like debt and stock offerings. The theory is owing to the idea of asymmetric information, which states that managers have access to knowledge about all of the enterprise's investments and projects, revealing the firm's actual values, but investors do not.

### Empirical Review

The study of Orinya, Kado, Kurfi, Bala (2024) which sought to mediate the ways of WACC in Nigeria. The secondary data were culled from the

yearly reports of fifteen consumer products businesses that were made public on the Nigerian stock market from 2005 to 2019. The research found that debt ratio substantially affects financial performance as assessed by ROA and EPS. It was recommended that the firms' management teams should use a mix of 50% debt and 50% equity capital. The factors influencing share prices on the Colombo Stock Exchange (CSE) were also the subject for Gineshi, Diwakara, and Nuwan (2024). In the study, the dependent variable is the share price while the independent variables are firm's COE, COD, and WACC. The upshots of the descriptive, correlational, and regression analyses revealed a statistically substantial interaction between the share price and the WACC, cost of debt, and COE of manufacturing firms. The study recommended that both the Investors and the firms management should consider the projection of share price movements in the capital market before undergoing such investments.

Tamunotonye and Obutor (2023) researched on the effect of cost of capital on firm performance of listed construction firms in Nigeria from 2012 to 2021. It employed the ex-post facto design and conducted some diagnostic tests, including tests for multicollinearity and heteroscedasticity and engaged the ordinary least square (OLS) regression to observe interaction between variables. The results showed that cost of debt had an insubstantial unfavourable outcome on firm performance, while COE had an insubstantial favourable effect on firm performance, as measured by ROA. The study suggested that available options should be employed for cost effectiveness. Ogiriki and Olorunleke (2023) sought to assess how the financing cost, including loan and equity costs, impacted the financial performance of construction firms in Nigeria from 2008-2017. The study was built on ex post facto design. It made use of the multiple Linear Regression and descriptive statistics to test the hypotheses in the research. Among others, the study revealed that the financial performance is unfavourably affected by cost of debt.

Ochoki, Oloo, and Kamau (2023) studied the effects of cost of capital on firm performance in Kenya. The study argued that the cost of capital is affected by various factors such as interest rates, inflation, market conditions, and government policies. But financial managers are only interested in the use of discounting cash flow techniques to evaluate capital

investments, which requires the estimation of the project's cash flows and the discount rate. The research maintains the need for a mix of financing sources between debt and equity because high costs of capital can limit a firm's access to financing, while low costs of capital can improve a firm's investment and growth opportunities. Marshal, Chigozirim, and Edeh (2023), investigated the impact of cost of capital on market value of manufacturing companies in Nigeria from 2007-2021. The variables of consideration are cost of debt, the COE, WACC, and share prices. It made use of the purposive selection technique to choose 15 manufacturing enterprises from a pool of 63 that were listed. The study employed a variety of econometric methods such as, Unit Root Test, Co-integration Test, Granger Causality Test, and Panel data regression, addition to descriptive and inferential statistics, to analyse the secondary data. Okolo, et al. (2019), examined the implications of equity capital financing on the corporate financial performance of deposit money banks in Nigeria. It made use of 14 banks on the Nigerian Stock Exchange for a period of 11 years. It adopted the ex-post facto research design, and Pooled Ordinary Least Square Method and the analysis used panel data structure with E-View package (version 13). It also revealed that both ROE AND EVA have a positive effect on the corporate financial performance of Deposit Money Banks in Nigeria. It recommended that the implications of scheduling banks capital into equity financing, short-term debt and long-term debt by managers should be closely supervised and monitored by both shareholders and bondholders' so as to avoid the company adding negative value to them who are contributors of finance.

### Methodology

This study focused on manufacturing firms quoted on the Nigerian Exchange (NGX) for a period of 16 years 2008-2023 with 160 observations. It adopts the *ex-post facto* design. ten manufacturing firms were observed with 160 observations. The information obtained are secondary in nature collated from the annual reports and accounts of the firms, the purposive sampling was used to generate a sample size of ten (10) consumer goods since the population was fewer than thirty. The sampled firms and the year of listing are:

**Table 3.1: Targets 10 sample consumer goods firm**

| S/N | Name of Company         | Year of Incorporation | Year of Listing |
|-----|-------------------------|-----------------------|-----------------|
| 1   | Cadbury Nig.            | 1965                  | 1976            |
| 2   | Dangote Sugar           | 2005                  | 2007            |
| 3   | Flour Mills of Nigeria  | 1962                  | 1979            |
| 4   | Guinness Nig.           | 1950                  | 1965            |
| 5   | International Breweries | 1971                  | 1995            |
| 6   | Nascon Allied           | 1973                  | 1992            |
| 7   | Nestle Nig.             | 1969                  | 1979            |
| 8   | Champion Breweries      | 1946                  | 1973            |
| 9   | Unilever Nigeria        | 1923                  | 1978            |
| 10  | PZ Cussons              | 1948                  | 1974            |

Source: Author's Compilation as extracted from NGX website, 2023.

### Model Specification

The model was adopted from Giwa (2019) and modified to suit the hypotheses of this study as follows: one.

$$ROA = f(WACC, MV, FS \epsilon) \quad \text{equ.1}$$

Explicitly rewritten as:

$$ROA_{it} = \beta_0 + \beta_1 WACC_{it} + \beta_2 MV_{it} + \beta_3 FS_{it} + \epsilon_t \quad \text{equ. 2}$$

Modified into to log forms in order to be well captured as:

$$LOG ROA_{it} = \beta_0 + \beta_1 LOGWACC_{it} + \beta_2 LOGMV_{it} + \beta_3 LOGFS_{it} + \epsilon_t \quad \text{equ. 3}$$

Where:

LOG ROA = Log of Return on Asset as proxy financial performance

LOG WACC = Log Weighted Average cost of capital

LOG MV = Log of Market Value of Equity

LOG FS = Log of Firm Size

$\beta_0$ = constant slope to be estimated;  $\beta_1$ - $\beta_5$  = parameter estimate

$\epsilon_t$  = error term;  $i$  = firm,  $t$  = time period, *A priori expectation:*  $\beta_0 + \beta_1 + \beta_2 + \beta_3 > 0$ .

### Presentation of Results and Discussion

#### Descriptive analysis

The descriptive analysis displayed the basic features of the cross Sectional and time series data. The outcome of the descriptive analysis is presented in table 4.1.

**Table 4.1: Descriptive Analysis**

|              | ROA     | FS       | MV       | WACC      |
|--------------|---------|----------|----------|-----------|
| Mean         | 10.7526 | 625.8131 | 737190.1 | 6834530   |
| Median       | 7.27921 | 7.919100 | 2481040  | 3516620   |
| Maximum      | 79.7581 | 9887600  | 18000000 | 5991723   |
| Minimum      | 0.12858 | 6.00474  | 1.793608 | 2.458280  |
| Std. Dev.    | 11.2189 | 7816.211 | 1595180  | 997883.8  |
| Skewness     | 2.95840 | 12.53021 | 8.191372 | 2.734797  |
| Kurtosis     | 16.0153 | 158.0063 | 87.23392 | 10.77431  |
| Jarque-Bera  | 1362.72 | 164366.5 | 49091.65 | 602.3761  |
| Probability  | 0.00000 | 0.00000  | 0.000000 | 0.000000  |
| Sum          | 1720.42 | 100130.1 | 11800.00 | 109000.00 |
| Sum Sq. Dev. | 20012.5 | 97100.00 | 40500.00 | 158000.00 |
| Observations | 160.000 | 160.0000 | 160.0000 | 160.0000  |

Source: Researcher computation from E-View 12, 2023.

From the descriptive analysis in table 4.1, the mean value of ROA for the period was 10.7526. ROA of about 10.7 percent is indicated by the mean figure, which pertains to the sample of Nigerian consumer products enterprises. A return on asset might be as high as 79.7581 or as low as 0.12, due to the data set.

With a maximum ROA of 79.8 percent, it is clear that the majority of the firms under consideration were doing well. One way to look at the dispersion of data relative to the mean is by utilising a standard deviation. Data points are more densely packed around the mean when the standard deviation is

small, and dispersed when the standard deviation is big. Since ROA had a small standard deviation of 11.2189 across the research period, we may infer that the data were well concentrated around the mean. The skewness shows an imbalance of a normal distribution. This means that the data set has outliers or extreme values in its distribution. Also, skewness of the data-set had a favourable value of 2.95840, meaning the data is skewed to the right. Kurtosis is utilised to measure how data disperse between a distribution's center and tails, with larger values indicating a data distribution may have “heavy” tails that are thickly concentrated with observations or that are long with extreme observations. Observably, the kurtosis was 16.0153 > 3, which revealed that the dataset has heavier tails than a normal distribution. Additionally, the average firm size (FS) was 625.8131. The average FS is 625 percent, which means that consumer goods businesses grew in size by an average of 625 percent over the research period. The maximum value of FS was ₦29,390,260 while the minimum value of COE was ₦10075.80. Standard deviation of COE for the period was 452674.7 which shows that the standard deviation was high and that the data are a far from the mean over the period. The skewness of the study shows a favourable value of 5.121569, meaning that the data is skewed to the right and Kurtosis, was 28.86836 > 3, which is the normal value, this indicates which indicates the dataset has heavier tails than a normal distribution.

Furthermore, the mean value of market value of equity (MV) for the period was 737190.1. The maximum value of MV was ₦1,800,000 while the minimum value of MV was ₦1.793608. Standard deviation of MV for the period of this study was 1595180 which shows that the standard deviation

was high and that the data are a far from the mean over the period. The skewness of the study shows a favourable value of 8.191372 meaning the data is skewed to the right and Kurtosis, was 87.23392 > 3, which is the normal value, this indicates which indicates the dataset has heavier tails than a normal distribution

Furthermore, the mean value of market value of equity (MV) for the period was 737190.1. The maximum value of MV was ₦1,800,000 while the minimum value of MV was ₦1.793608. Standard deviation of MV for the period of this study was 1595180 which shows that the standard deviation was high and that the data are a far from the mean over the period. The skewness of the study shows a favourable value of 8.191372 meaning the data is skewed to the right and Kurtosis, was 87.23392 > 3, which is the normal value, this indicates which indicates the dataset has heavier tails than a normal distribution.

Additionally, the WACC for the given time frame was 6834530. There was a somewhat high financing cost for the research during the study period, as shown by the average WACC of 6834530. There is variation in the WACC among the consumer goods companies. The maximum value of WACC was ₦5991723 while the minimum value of MV was ₦2.458280. Standard deviation of WACC for the period of this study was 997883.8 which shows that the standard deviation was high and that the data are a far from the mean over the period. The skewness of the study shows a favourable value of 2.734797 meaning the data is skewed to the right and Kurtosis was 10.77431 > 3, which is the normal value, this indicates which indicates the dataset has heavier tails than a normal distribution.

**Table 4.2: Summary of correlation coefficient**

|      | ROA     | FS      | MV      | WACC   |
|------|---------|---------|---------|--------|
| ROA  | 1.0000  |         |         |        |
| FS   | 0.00412 | 1.0000  |         |        |
| MV   | 0.11970 | 0.0243  | 1.0000  |        |
| WACC | 0.00377 | -0.0062 | -0.0239 | 1.0000 |

**Source: E views 12 computations, (2024)**

The correlation coefficient as obtained in Table 4.2 emphasized on the link between the dependent variable, ROA, and the independent variables vis-a-vis the moderating variable. The correlation coefficients range from -1 to 1. The link's indication reveals the direction of the connection (favourable or unfavourable), while the absolute values of the

correlation indicate the strength, with bigger values signifying stronger correlations. The upshots indicated a favourable correlation between ROA and firm size (FS), market value of equity (MV), and WACC, with correlation coefficients of 0.00412, 0.11970, and 0.00377, respectively.

**Table 4.3. Correlated Random Effects - Hausman Test**

Equation: Untitled  
 Test cross-section random effects

| Test Summary         | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 1.439263          | 6            | 0.9634 |

Cross-section random effects test comparisons:

| Variable | Fixed     | Random    | Var(Diff.) | Prob.  |
|----------|-----------|-----------|------------|--------|
| FS       | -0.000013 | -0.000004 | 0.000000   | 0.4613 |
| MV       | -0.000000 | -0.000000 | 0.000000   | 0.9410 |
| WACC     | -0.000000 | -0.000000 | 0.000000   | 0.4961 |
| @TREND   | -0.706921 | -0.727959 | 0.001090   | 0.5239 |

The Hausman test in table 4.3, was conducted to determine the appropriate model between the random effects model and the fixed effects model in the study. This served as a test to identify the appropriate model between the fixed and random-effects models. The Hausman test posits the null hypothesis that the random effects model is preferable, while the alternative hypothesis asserts the superiority of the fixed effects model. The

random effects model was chosen because the p-value of Hausman's test exceeds 0.05. This indicates that the research accepts the null hypothesis of the Hausman test and rejects the alternative hypothesis that the random effects model is favoured. Therefore, the random effects model was utilised as the most effective estimator of the impact of capital costs on the fiscal performance of selected publicly listed consumer goods firms in Nigeria.

**Table 4.4: Summary of Panel Regression (dependent variable, ROA)**

| Variables          | Fixed Effect Model        | Random Effect Model + +   |
|--------------------|---------------------------|---------------------------|
| FS                 | 3.054308<br>(0.87511)     | 2.759866<br>(2.486020)*** |
| MV                 | 3.054308<br>(0.885920)    | 2.933908<br>(2.463723)**  |
| WACC               | -1.701614<br>(-0.638572)  | 2.978604<br>(2.704591)*** |
| C                  | 18.07022<br>(7.536795)*** | 18.13506<br>(4.606381)*** |
| R-Squared          | 0.581917                  | 0.764213                  |
| Adjusted R-Squared | 0.512585                  | 0.727515                  |
| F-Statistics       | 0.512585                  | 9.749789                  |
| Prob (F-Statistic) | 0.000006                  | 0.003127                  |

**Source:** Author's computations 2024 utilising Eviews 12.0

\*\*\* and \*\* denotes significance @ 5 percent level, respectively. Values in parenthesis () are t- values of variables, ++ show the accepted Model

Lucky (2017) contended that the focus on panel regression relies on either the fixed effect model or the random effect model, depending upon the upshots of the Hausman test. Kurt asserts that the pooled OLS estimator disregards the panel structure of the data, resulting in inaccurate parameter estimates and standard errors. In congruent with the Hausman test outlined above, the selected model is the random effects model, since it exhibits the maximum sum of substantial variables and is also the model favoured by the Hausman test. In congruent with the random effects model, the adjusted R-squared value of 0.727515 signifies that the firm size (FS), market value of equity (MV), and WACC collectively explain 73 percent of the variance in ROA as the dependent variable, while the

#### Test of Hypotheses

**Table: 4.5. Test of Hypothesis 1**

**H0<sub>1</sub>:** Weighted average cost of capital has no significant effect on financial performance of selected consumer goods companies in Nigeria,

| Variable | Coefficient | t-statistic | Prob.  |
|----------|-------------|-------------|--------|
| Log WACC | 2.978604    | 2.704591    | 0.0068 |

**Source:** *Extracted from panel regression result table*

At a significance level of 5 percent, the data in the table 4.5 shows that the Log WACC coefficient is 2.978604, the p-value is 0.0068, and the t-statistic is 2.704591. At the 5 percent level of significance, the p-value is below

**Table: 4.6 Test of Hypothesis 2**

**H0<sub>2</sub>:** Market value of equity has no substantial effect on financial performance of selected consumer goods companies in Nigeria.

| Variable | Coefficient | t-statistic | Prob.  |
|----------|-------------|-------------|--------|
| Log MV   | 2.933908    | 2.463723    | 0.0214 |

**Source:** *Extracted from panel regression result table*

At the 5 percent level of significance, the following values are shown in the table: 2.933908 for the coefficient of the Log MV, 0.0214 for the probability value, and 2.463723 for the t-statistic. With a favourable coefficient and a p-value below 0.05 at the 5 percent threshold of significance, we may accept alternative hypothesis one. It follows that the fiscal performance of a subset of Nigerian consumer goods businesses made public on stock exchanges is favourably and substantially impacted by their market value of equity.

remaining 27 percent is attributed to the error term. The F-statistic probability of 0.003127 indicates that the upshots are statistically substantial.

The t-statistic for firm size (FS) was 2.486020 with a probability value of 0.0118, indicating that company size (FS) had a favourable and substantial sway on the ROA of the chosen consumer goods businesses in Nigeria. The T-statistic for the market value of equity (MV) was 2.463723, with a probability value of 0.0214, indicating that the market value of equity (MV) has a favourable and substantial sway on the ROA of the chosen consumer goods businesses in Nigeria. The T-statistic for the WACC was 2.704591, with a probability value of 0.0068, indicating that WACC has a favourable and substantial sway on the ROA of the chosen consumer goods businesses in Nigeria.

0.05, and the coefficient value is favourable, hence alternative hypothesis one is accepted. This suggests that a sum of listed Nigerian consumer goods businesses' financial performance is favourably and significantly impacted by WACC.

#### Discussion of Results

The purpose of this research was to appraise the impact that the cost of capital has on the fiscal performance of a selection of consumer products firms that are listed in Nigeria. Between the years 2008 and 2023, the research was conducted.

H0<sub>1</sub>: Weighted average cost of capital has no substantial effect on financial performance of selected consumer goods companies in Nigeria

In congruent with the upshots of the third hypothesis, the WACC has a favourable and substantial impact on the fiscal performance of a selection of consumer goods businesses that are listed in Nigeria. In



congruent with this finding, the WACC is an extremely important factor to consider when making fiscal decisions for a company. As a result of the WACC, a crucial choice must be made on whether to accept debt financing or equity financing, taking into consideration the effect that this funding will have on costs. It is possible to calculate the rate of return by utilising the WACC. This rate of return represents the return that shareholders need in a way to purchase capital. The risk of cash flows and the attractiveness of firm shares, projects, and possible acquisitions are also evaluated by investors with the assistance of this system. In addition to this, it determines the discount rate for future cash flows, which is necessary in a way to determine the value of a company. The upshots of the study seem to be consistent with the upshots of the research. Ibrahim and others (2021). The fact that the WACC has a favourable and substantial sway on the variables that measure fiscal performance (ROA) suggests that shareholders are more interested in investments that result in an upsurge in the value of the company. It also indicates that the value of the company will grow while the COC of the company is decreasing.

H02: Market value of equity has no substantial effect on financial performance of selected listed consumer goods companies in Nigeria.

In congruent with the upshots of the previous hypothesis, the market value of equity has a favourable and considerable impact on the fiscal performance of a sum of consumer goods firms that are listed in Nigeria. The conclusion is supported by the fact that the market value of stock represents the market's assessment of the current worth of a firm. In the majority of cases, prior to making an investment choice on a certain business, investors will first consider the market worth of the stock that the company has. Specifically, this is due to the fact that the market value of the firm's stock reflects the overall success of the company within a given year. In congruent with Marshal (2023), the upshots of the study are consistent with the upshots of the research. On the other hand, the coefficients of firm size (SIZE), market value (MVE), sales growth (GROWTH), and ROA variables are favourable, which is consistent with the research performed by Francis et al. (2005), Lopes and Alencar (2010), and Reverte (2012); however, it was discovered that these coefficients were statistically insubstantial during the time period that was appraised. Contrary to what is found in the literature. Owing to the analysis of the models, it has been shown that the size of the company has a favourable sway on the ROA.

### Summary of Findings

A sum of publicly traded Nigerian consumer goods firms had their financing needs analysed to determine the impact of cost of capital. The study however showed that:

1. The financial success of some listed consumer goods businesses in Nigeria is favourably and substantially impacted by their WACC.
2. The financial performance of some listed consumer goods businesses in Nigeria is favourably and substantially impacted by the market value of equity.

### Conclusion

The expansion and profitability of consumer products firms in Nigeria and throughout the globe are heavily swayed by the choices they make about financing. In a way to maximise shareholder value, it finds the optimal debt-to-equity ratio for the fiscal structure. When companies are deciding how to finance themselves, financing cost is a major factor. Investment managers strive to choose a capital structure pattern that minimises financing cost while maximising return for the firm, taking into account the varying degrees of risk associated with different financing sources. For analysts and investors, the financing cost is a key metric.

If a company's projected return on capital is greater than its financing cost, then the investment becomes substantial. This is due to the fact that increasing business value necessitates maximisation of profits for the benefit of shareholders. Companies' financial performance is impacted by the financing cost, which must be acknowledged (Alrijoub & Ahmad, 2017). As a means of acquiring money for long-term projects, the Nigerian capital market is undeveloped in comparison to its international equivalent, which means that its value is low. Consequently, the principal duty of carefully collecting money from economic surplus units and directing them to the deficit sector to cover its capital requirements in the long run has not been duly carried out. The high financing cost is a result, for example, of the limited liquidity of the Nigerian capital market, which is caused by the small sum of listed businesses, low transaction volumes, and low market capitalisation. Most research on the topic have focused on other nations, therefore there is still a lack of understanding on how financing cost affects fiscal performance, even if there is more and more literature on the subject. So, the research. A sum of publicly traded Nigerian consumer goods firms had their fiscal performance analysed to determine the impact of financing cost. In conclusion. A company's bottom line will benefit from a financing cost that is both effective and efficient.

### Recommendations

The researcher offered the following suggestions:

1. It is recommended that consumer goods companies made public onstock exchanges maintain a capital structure that is roughly 50 percent debt and 50 percent equity. This is because the average of these two factors

greatly impacts financial health of the said entities performance, which in turn ensures long-term sustainability.

2. Owing to the market value of equity, managers of listed consumer goods businesses in Nigeria should choose equity borrowing over debt borrowing when it comes to financing their operation.

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## Shareholder Value Creation and Sustainability Reporting in Nigerian Manufacturing Industry

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### Abstract

*This study investigated the effect of shareholder value creation on environmental, social, and governance sustainability disclosures in emerging market firms. The study adopted an ex-post facto design, using data from 37 listed manufacturing firms in the Nigerian Exchange Group as at December 2024. Secondary data were extracted from published annual reports. The pooled panel regression technique was employed for analysis, enabling the study to handle data gaps and capture firm-level variations. The findings revealed that environmental sustainability disclosure did not significantly influence shareholder value. Social sustainability disclosure equally showed no significant effect on shareholder value proxies, while governance disclosure was statistically insignificant across all models. These results aligned with prior evidence from Nigeria and other emerging markets, suggesting that ESG disclosures were largely symbolic and not strongly integrated into investor decision-making process. Unlike developed economies, where ESG reporting often signaled firm value enhancement through institutional mechanisms, emerging markets demonstrated limited linkage between sustainability practices and shareholder wealth creation. The study concluded that ESG disclosure in the Nigerian primarily served compliance and reputational purposes rather than acting as a direct driver of shareholder value. The findings suggested implications for policymakers, regulators, and corporate executives seeking to enhance sustainability practices and align them more closely with investor expectations.*

**Keywords:** Sustainability Reporting, ESG Disclosure, Shareholder Value, Corporate Governance, Value Creation

### Introduction

Sustainability reporting has evolved into a critical dimension of corporate disclosure, particularly in the context of global calls for responsible business practices. The essence of sustainability reporting lies in communicating how firms address environmental, social, and governance (ESG) issues while pursuing long-term profitability and competitiveness. Freeman's (1984) stakeholder theory underscores the significance of aligning business objectives with the expectations of diverse stakeholders, as corporations are increasingly evaluated not only on financial outcomes but also on their broader societal impact. In this respect, sustainability reporting has emerged as a strategic mechanism through which firms enhance transparency, legitimacy, and ultimately, value creation.

In developed markets, empirical evidence demonstrates that sustainability disclosures strengthen firm reputation and financial outcomes through signaling effects (Friske, et al. 2023). However, in emerging markets, where institutional frameworks are weak and regulatory enforcement is inconsistent, the relationship between sustainability reporting and shareholder value

remains less clear (Ikpor, et al., 2022). Studies from Nigeria and other developing countries highlights mixed findings. For instance, Nzekwe, et al. (2021) observed that sustainability reporting improved financial performance among industrial goods companies, while Onoh, et al. (2022) found inconclusive results in the oil and gas sector. These inconsistencies suggest that the value relevance of sustainability reporting is heavily shaped by contextual and sectoral factors.

Recent studies have emphasized the multidimensional nature of sustainability disclosure, focusing on environmental, social, and governance aspects. Environmental disclosures address ecological impacts, resource efficiency, and climate-related risks (Kolawole, et al., 2023). Social disclosures involve corporate social responsibility practices, stakeholder engagement, and employee well-being (Kundayo, et al. 2020). Governance disclosures, on the other hand, reflect corporate governance structures, board effectiveness, and accountability mechanisms (Ikumapayi, et al., 2018; Moses, 2021). Each dimension provides unique insights into how firms balance stakeholder interests and financial objectives.

Despite the growing attention, gaps persist in understanding whether sustainability reporting translates into tangible shareholder value in emerging economies. Studies such as Lawal, et al. (2024) and Taiwo, et al. (2022) highlight the nascent stage of sustainability practices in Nigeria, where disclosure quality and enforcement remain uneven. Against this backdrop, this study seeks to investigate the effect of environmental, social, and governance sustainability disclosure on shareholder value creation, proxied by Tobin's Q, earnings per share (EPS), share price (SP), and price-to-earnings ratio (PER), using evidence from emerging market manufacturing firms.

### Statement of the Problem

Sustainability reporting has emerged as a key mechanism for corporate accountability, with growing debates about its capacity to enhance shareholder value. Theoretically, effective environmental, social, and governance (ESG) disclosures reduce information asymmetry, build investor trust, and foster long-term value creation (Zumente & Bistrova, 2021; Ikpor et al., 2022; Friske, et al. 2023; Nuhu & Alam, 2024). However, empirical evidence is fragmented and inconclusive, particularly in emerging economies where institutional frameworks, disclosure standards, and enforcement remain weak.

In Nigeria, sustainability reporting is largely voluntary and inconsistent, lacking comparability and standardized frameworks (Onoh, et al. 2022). While some studies show a positive link between ESG disclosures and firm value (Igbinovia & Agbadua, 2023; Lawal, et al. 2024), others report weak or insignificant outcomes (Nzekwe, et al. 2021; Kolawole et al., 2023). This divergence questions whether current sustainability disclosures in Nigeria are sufficiently credible to influence shareholder value measures such as Tobin's Q, earnings per share, share price, and price-to-earnings ratio.

Several factors explain these inconsistencies. Regulatory weaknesses undermine disclosure credibility, as many Nigerian firms selectively report for reputational purposes rather than genuine transparency (Onoh et al., 2022). Weak governance frameworks and limited sustainability oversight reduce the informational value of reports (Nuhu, et al. 2024). Moreover, most studies are industry-specific and rely on narrow financial proxies, limiting generalizability (Taiwo et al., 2022). Finally, short-term investor behavior in Nigeria's capital market hinders the potential of ESG disclosures to translate into long-term valuation premiums (Ndanafu & Ojodi, 2023).

These gaps underscore the need for comprehensive, multidimensional studies that examine how ESG disclosures influence shareholder value in emerging market contexts through the following study objectives;

- i. To examine the effect of shareholder value creation on environmental sustainability disclosure.
- ii. To assess the effect of shareholder value creation on social sustainability disclosure.
- iii. To evaluate how shareholder value creation influences governance-related sustainability disclosure.

## Literature Review

### Concept of Sustainability Reporting

Sustainability reporting refers to the systematic disclosure of a firm's environmental, social, and governance (ESG) practices with the aim of enhancing transparency, accountability, and stakeholder trust (Wilky & Cole, 2020). It has evolved from voluntary corporate social responsibility communication to a more structured practice guided by international frameworks such as the Global Reporting Initiative and integrated reporting (Ikpor, et al., 2022). Scholars argue that sustainability reporting serves both signaling and legitimacy functions, providing investors and other stakeholders with relevant information on non-financial performance (Friske, et al. 2023; Zumente, et al. 2021). In emerging economies, however, reporting practices remain fragmented, often shaped by weak institutions, governance challenges, and inconsistent disclosure quality (Nuhu, et al. 2024; Onoh, et al. 2022). Despite these limitations, sustainability reporting is increasingly being recognized as a strategic tool for aligning corporate actions with sustainable development goals and enhancing long-term value creation (Lawal, et al. 2024).

### Sustainability Reporting and Value Creation

Sustainability reporting provides stakeholders with transparent information on how firms integrate environmental, social, and governance (ESG) practices into operations. Empirical evidence shows that credible sustainability disclosures can enhance firm reputation, attract investors, and drive long-term shareholder value (Nazim, et al. 2017; Obinna & Onwe, 2024). In emerging markets, however, inconsistent reporting frameworks limit this potential, although studies in Nigeria and India highlight that improved sustainability disclosure strengthens financial performance and investor confidence (Emeke, et al. 2021; Adegboyegun, et al. 2020).

### Shareholder Value Creation (Tobin's Q, EPS, Share Price, and P/E Ratio)

Shareholder value creation reflects a firm's ability to maximize returns through financial performance and market-based indicators. Tobin's Q, a ratio of market value to asset replacement cost, is widely employed as a measure of firm valuation and investment

attractiveness (Zumente, et al. 2021). Earnings per Share (EPS) signals profitability and is closely followed by investors as a determinant of firm performance (Ikumapayi et al., 2018; Nzekwe, et al. 2021). Share price remains a direct market reflection of investors' expectations, linking sustainability practices to firm competitiveness (Taiwo, et al., 2022; Lawal, et al. 2024). The Price-to-Earnings (P/E) ratio captures growth expectations and market confidence, offering insights into long-term value creation (Friske, et al. 2023). Empirical studies in emerging markets suggest these metrics are increasingly shaped by sustainability disclosures, highlighting the evolving relationship between financial performance and non-financial reporting.

## **Theoretical frameworks**

### **Stakeholder Theory**

Stakeholder theory, advanced by Freeman (1984), posits that corporations exist to create value not only for shareholders but also for other stakeholders, including employees, customers, communities, and regulators. In sustainability reporting, this theory underpins the disclosure of environmental, social, and governance practices, as firms seek to balance diverse interests and enhance legitimacy through transparent communication.

### **Legitimacy Theory**

Legitimacy theory by Dowling and Pfeffer, (1975) argues that firms disclose sustainability information to align with societal norms, values, and expectations, thereby securing their social license to operate (Ikpor et al., 2022; Moses, 2021). By reporting environmental, social, and governance activities, corporations demonstrate conformity with public expectations, reduce information asymmetry, and protect their reputation, ultimately safeguarding long-term value creation in emerging market contexts.

### **Empirical Review**

Benali, et al. (2021) examined the relationship between corporate social responsibility (CSR) and financial performance (FP) among listed Moroccan companies from 2012 to 2017. Using panel data for analysis, the study produced mixed results. CSR was found to have a positive impact on financial performance when return on assets (ROA) was used as a proxy. However, when return on equity (ROE) was applied, CSR showed no significant effect, indicating a neutral impact. The study highlighted the contextual nature of CSR–performance linkages and suggested that including both social and environmental reporting could have provided a more comprehensive perspective.

Nzekwe, et al. (2021) investigated the effect of sustainability reporting on the financial performance of

quoted industrial goods companies in Nigeria between 2008 and 2019. The study specifically examined the effect of environmental, social, and economic reporting on cash value added. Using purposive sampling, eleven firms were selected from fifteen listed companies. Panel data from annual reports were analyzed with descriptive statistics, Pearson correlation, panel least squares regression, Granger causality, and Hausman tests. Findings revealed that environmental, social, and economic reporting each had a significant positive effect on cash value added. The study recommended stronger environmental policies and innovations.

Ikpor, et al. (2022) investigated the drivers of sustainability accounting and reporting in Nigeria as an emerging economy. Using data from annual accounts, sustainability reports, and company websites of the top 50 listed firms between 2015 and 2020, the study applied a fixed effects panel regression model. Findings showed that sustainability reporting was influenced by firm size, profitability, ownership structure, listing age, leverage, and auditor type. Size, profitability, and Big-4 auditors had positive effects, while ownership structure and leverage negatively affected reporting. The banking and oil and gas sectors reported more actively. The study offered implications for policymakers and researchers.

Onoh, et al. (2022) examined the effect of sustainability reporting on the firm value of listed oil and gas companies in Nigeria, using Tobin's Q as proxy. Relying on secondary data from annual reports, the study employed descriptive statistics, correlation matrix, and multiple regression analysis. Findings revealed that environmental sustainability reporting had a positive significant effect on firm value, while economic sustainability reporting showed a negative significant effect. Firm characteristics such as sales growth and leverage negatively affected value, whereas firm size had a positive effect. The study recommended full compliance with sustainability reporting regulations to attract investors.

### **Study Gap**

Although sustainability reporting has gained prominence in developed markets, evidence on its relevance to shareholder value creation in emerging economies remains fragmented and inconclusive. Prior studies largely concentrate on developed countries where regulatory systems, institutional pressures, and investor sophistication foster stronger ESG–performance linkages. In contrast, research in emerging markets is limited, often descriptive, and focused on disclosure levels rather than value implications. Moreover, existing studies frequently overlook firm heterogeneity, sectoral dynamics, and moderating institutional factors. This gap underscores the need for empirical investigation into whether sustainability

disclosures meaningfully drive shareholder value within emerging market corporations.

## Research Methodology

### Research Design and sample size

The study adopted an *ex-post facto* research design, which enabled the investigation of sample units over a defined period. This design allowed the study to examine changes, effects, and behavioral patterns across time. The population comprised 46 listed

manufacturing companies on the Nigerian Exchange Group (NGX) as of December 2024. From this population, 37 firms across Natural Resources, Industrial Goods, Consumer Goods, Conglomerates, Health Care, and Agriculture were selected as the sample. The study relied on secondary data, validated by external auditors, eliminating the need for dependability testing. The pooled panel technique was applied to handle missing data and analyze relationships effectively.

### Model Specifications

The model for this study will be stated in econometrics terms below as;

$$\begin{aligned} \text{Model I } SR &= f(\text{VALUE CREATION}) \\ ESGSDI &= f(\text{TOBINSQ} + \text{EPS} + \text{SP} + \text{PER} + \text{FSIZE}) \\ ESGSDI_{it} &= \alpha_0 + \beta_1 \text{TOBINSQ}_{it} + \beta_2 \text{EPS}_{it} + \beta_3 \text{SP}_{it} + \beta_4 \text{PER}_{it} + \beta_5 \text{FSIZE}_{it} + \varepsilon_t \quad \text{eq. I} \end{aligned}$$

$$\begin{aligned} \text{Model II } SR &= f(\text{VALUE CREATION}) \\ SRDSDI &= f(\text{TOBINSQ} + \text{EPS} + \text{SP} + \text{PER} + \text{FSIZE}) \\ SRDSDI_{it} &= \alpha_0 + \beta_1 \text{TOBINSQ}_{it} + \beta_2 \text{EPS}_{it} + \beta_3 \text{SP}_{it} + \beta_4 \text{PER}_{it} + \beta_5 \text{FSIZE}_{it} + \varepsilon_t \quad \text{eq. II} \end{aligned}$$

$$\begin{aligned} \text{Model III } SR &= f(\text{VALUE CREATION}) \\ GOVSDI &= f(\text{TOBINSQ} + \text{EPS} + \text{SP} + \text{PER} + \text{FSIZE}) \\ GOVSDI_{it} &= \alpha_0 + \beta_1 \text{TOBINSQ}_{it} + \beta_2 \text{EPS}_{it} + \beta_3 \text{SP}_{it} + \beta_4 \text{PER}_{it} + \beta_5 \text{FSIZE}_{it} + \varepsilon_t \quad \text{eq. III} \end{aligned}$$

Where;

ESGSDI = Environmentally Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on material, energy, water, biodiversity, emission/greenhouse gas, waste management, product services and compliance to laws.

SRDSDI = Social Sustainable Disclosure index (measured as Index score generated from the score of 1 or 0 for disclosures or otherwise on community, donation, employee, health and safety and customer/complaints.

GOVSDI = Governance Sustainable Disclosure index (measured as measures the extent of corporate Governance, Social, and Environmental (GSE) information disclosure by companies related to their GSE performance.

Tobin's Q = Tobin's Q (measured as market capitalization plus total liabilities minus cash divided by total asset)

EPS = Earnings per Share (measured as net profit after tax divided by number of Total Outstanding ordinary shares).

SP = Share price (measured as the price as at the closing date of March\_ June\_ September and December of a stock).

PER = Price to Earnings Ratio (measured as year-end closing share price divided by earnings per share).

FS = Firm Size (Measured as the natural logarithm of total assets of firm *i* in year *t*)

*f* = functional relationship between dependent and independent variables

$\varepsilon_t$  = error term

*i* = firm identifier

*t* = time variable (10 Years)

$\alpha_0$  is the intercept of the regression.

$\beta_1 - \beta_5$  are the co-efficient of the regression equation.

The Apriori expectation:  $\beta_1 - \beta_5$  is lesser or greater than 0.

## Analysis and Discussion of Results

### Descriptive Statistics Analysis and Discussion

**Table 1: Summary of Descriptive for ESGSDI SRDSDI GOVSDI TOBINSQ EPS SP PER and FSIZE**

| VARIABLES | OBS | MEAN     | STD. DEV | MIN       | MAX      |
|-----------|-----|----------|----------|-----------|----------|
| ESGSDI    | 370 | .5298675 | .508737  | -.9811688 | 3.484753 |
| SRDSDI    | 370 | .31      | .1646809 | 0         | .79      |
| GOVSDI    | 370 | .3807027 | .1983811 | 0         | .83      |
| TOBINSQ   | 370 | 1.01202  | 1.542856 | .0008848  | 18.69163 |
| EPS       | 370 | 3.752461 | 17.66875 | -100.2626 | 202.5645 |
| SP        | 370 | 61.83642 | 190.2861 | .2        | 1555.99  |
| PER       | 370 | 26.43458 | 349.6617 | -504.1426 | 6686.345 |
| FSIZE     | 370 | 16.80411 | 2.105189 | 12.83807  | 22.09412 |

Source: Regression Output, 2025.

The descriptive statistics provide insight into the distribution and variability of the variables used in assessing the link between sustainability reporting and shareholder value creation. The environmental disclosure index (ESGSDI) has a mean of 0.53, indicating moderate disclosure practices, although the wide range from negative to positive values suggests significant disparity in reporting quality among firms. Social disclosure (SRDSDI) records a mean of 0.31, reflecting lower emphasis relative to environmental practices, while governance disclosure (GOVSDI) averages 0.38, showing limited but notable integration

of governance reporting. For shareholder value proxies, Tobin's Q averages 1.01, close to unity, implying that many firms are valued near their asset replacement cost. Earnings per share (EPS) and share price (SP) display high volatility, with wide gaps between minimum and maximum values, reflecting performance differences across firms. Similarly, the price-to-earnings ratio (PER) shows extreme variation, highlighting diverse profitability expectations. Firm size (FSIZE) appears relatively stable, averaging 16.8, consistent with large listed corporations.

### Normality Test

**Table 2: Shapiro-Wilk W test for normal data for ESGSDI SRDSDI GOVSDI TOBINSQ EPS SP PER and FSIZE**

| VARIABLES | OBS | W       | V       | Z      | PROB>Z  |
|-----------|-----|---------|---------|--------|---------|
| ESGSDI    | 370 | 0.86376 | 34.982  | 8.428  | 0.00000 |
| SRDSDI    | 370 | 0.99349 | 1.672   | 1.219  | 0.11136 |
| GOVSDI    | 370 | 0.96939 | 7.859   | 4.888  | 0.00000 |
| TOBINSQ   | 370 | 0.51329 | 124.966 | 11.446 | 0.00000 |
| EPS       | 370 | 0.37438 | 160.634 | 12.042 | 0.00000 |
| SP        | 370 | 0.31469 | 175.958 | 12.258 | 0.00000 |
| PER       | 370 | 0.06077 | 241.155 | 13.005 | 0.00000 |
| FSIZE     | 370 | 0.97997 | 5.142   | 3.882  | 0.00005 |

Source: Regression Output, 2025.

The Shapiro-Wilk test results indicate that most variables deviate significantly from normality, as reflected in p-values of 0.00000 for ESGSDI, GOVSDI, Tobin's Q, EPS, SP, and PER, alongside FSIZE with  $p < 0.01$ . This suggests skewness and kurtosis in their distributions, consistent with the presence of outliers and extreme firm-level differences. Only the social

disclosure index (SRDSDI) fails to reject the null hypothesis of normality ( $p = 0.11136$ ), implying it follows a near-normal distribution. These results highlight the need for robust regression techniques or data transformations to ensure reliable inference in subsequent econometric analyses.



### Correlation Analysis

**Table 3:** Summary of Spearman Correlation Matrix for TOBINSQ EPE VAPEREMPL HCROI FSIZE, stats(rho p) star(0.05)

|                | ESGSDI  | SRDSDI  | GOVSDI  | TOBINSQ | EPS    | SP      | PER    | FSIZE  |
|----------------|---------|---------|---------|---------|--------|---------|--------|--------|
| <b>ESGSDI</b>  | 1.0000  |         |         |         |        |         |        |        |
| <b>SRDSDI</b>  | 0.1832  | 1.0000  |         |         |        |         |        |        |
|                | 0.0004  |         |         |         |        |         |        |        |
| <b>GOVSDI</b>  | 0.1768  | 0.7096  | 1.0000  |         |        |         |        |        |
|                | 0.0006  | 0.0000  |         |         |        |         |        |        |
| <b>TOBINSQ</b> | -0.0087 | -0.1535 | -0.0921 | 1.0000  |        |         |        |        |
|                | 0.8675  | 0.0031  | 0.0767  |         |        |         |        |        |
| <b>EPS</b>     | -0.0220 | 0.0766  | 0.0615  | 0.3326  | 1.0000 |         |        |        |
|                | 0.6726  | 0.1415  | 0.2383  | 0.0000  |        |         |        |        |
| <b>SP</b>      | -0.1972 | 0.0431  | 0.0363  | -0.0173 | 0.1289 | 1.0000  |        |        |
|                | 0.0001  | 0.4082  | 0.4863  | 0.7398  | 0.0131 |         |        |        |
| <b>PER</b>     | -0.0387 | -0.0375 | -0.1143 | 0.3691  | 0.4484 | -0.0367 | 1.0000 |        |
|                | 0.4578  | 0.4719  | 0.0280  | 0.0000  | 0.0000 | 0.4810  |        |        |
| <b>FSIZE</b>   | -0.1188 | -0.0276 | -0.1384 | 0.1751  | 0.5158 | 0.0171  | 0.2738 | 1.0000 |
|                | 0.0222  | 0.5970  | 0.0077  | 0.0007  | 0.0000 | 0.7425  | 0.0000 |        |

Source: Regression Output, 2025.

The Spearman correlation results reveal important associations among sustainability reporting dimensions, shareholder value proxies, and firm size. Environmental (ESGSDI), social (SRDSDI), and governance (GOVSDI) disclosures are positively and significantly correlated, with the strongest link between social and governance reporting ( $p = 0.7096$ ,  $p < 0.01$ ), indicating that firms disclosing more in one area often extend efforts across others. Tobin's Q shows weak and mostly negative correlations with disclosure indices, although it is positively related to firm size ( $p = 0.1751$ ,  $p < 0.01$ ), reflecting that larger firms tend to

achieve higher market valuation multiples. Earnings per share (EPS) demonstrates a strong positive correlation with firm size ( $p = 0.5158$ ,  $p < 0.01$ ) and Tobin's Q ( $p = 0.3326$ ,  $p < 0.01$ ), underscoring the value relevance of firm fundamentals. Share price (SP) is negatively correlated with environmental disclosure ( $p = -0.1972$ ,  $p < 0.01$ ), suggesting possible investor skepticism toward costly environmental practices. Price-to-earnings ratio (PER) aligns positively with EPS and Tobin's Q, confirming profitability expectations as a driver of valuation.

### Result of Multicollinearity Test Using Variance Inflation Factor (VIF)g

Table 4: VIF Test Result

| MODELS | VARIABLES     | VIF  | 1/VIF    | MEAN VIF |
|--------|---------------|------|----------|----------|
| 1      | <b>ESGSDI</b> |      |          |          |
|        | EPS           | 1.04 | 0.961111 | 1.02     |
|        | TOBINSQ       | 1.03 | 0.967123 |          |
|        | FSIZE         | 1.03 | 0.974065 |          |
|        | PER           | 1.01 | 0.994902 |          |
|        | SP            | 1.00 | 0.995834 |          |
| 2      | <b>SRDSDI</b> |      |          |          |
|        | EPS           | 1.04 | 0.961111 | 1.02     |
|        | TOBINSQ       | 1.03 | 0.967123 |          |
|        | FSIZE         | 1.03 | 0.974065 |          |
|        | PER           | 1.01 | 0.994902 |          |
|        | SP            | 1.00 | 0.995834 |          |
| 3      | <b>GOVSDI</b> |      |          |          |
|        | EPS           | 1.04 | 0.961111 | 1.02     |
|        | TOBINSQ       | 1.03 | 0.967123 |          |
|        | FSIZE         | 1.03 | 0.974065 |          |
|        | PER           | 1.01 | 0.994902 |          |
|        | SP            | 1.00 | 0.995834 |          |

Source: Regression Output, 2025

**Breusch-Pagan / Cook-Weisberg test for heteroskedasticity****Table 5:** Breusch and Pagan Lagrangian Multiplier Tests fitted values

| MODELS | VARIABLE | CHI2(1) | PROB > CHI2 |
|--------|----------|---------|-------------|
| 1      | ESGSDI   | 0.05    | 0.8185      |
| 2      | SRDSDI   | 11.55   | 0.0007      |
| 3      | GOVSDI   | 1.99    | 0.1581      |

**Source: Regression Output, 2025.**

The multicollinearity test results in Table 4 show that all explanatory variables have VIF values between 1.00 and 1.04, with mean VIFs of 1.02 across the three models. These values are far below the standard threshold of 10, indicating that the models are free from multicollinearity problems. The tolerance values (1/VIF) close to 1 further confirm that the independent variables are not excessively correlated, which ensures stable and reliable coefficient estimates.

The Breusch-Pagan/Cook-Weisberg test in Table 5 assesses heteroskedasticity. The results show that ESGSDI ( $p = 0.8185$ ) and GOVSDI ( $p = 0.1581$ ) models fail to reject the null hypothesis, suggesting homoskedastic residuals. However, the SRDSDI model ( $\chi^2 = 11.55$ ,  $p = 0.0007$ ) indicates significant heteroskedasticity. This implies that robust standard errors or alternative estimation techniques are required for the social disclosure model to ensure valid statistical inference.

**Levin-Lin-Chu Panel Unit Root Test****Table 6a:** Diagnostic Tests Results for all the variables

| Variable | Statistics            | P-value | Remarks | Implication    |
|----------|-----------------------|---------|---------|----------------|
| ESGSDI   | Unadjusted t -11.6951 | 0.0000  | 1(0)    | stationary     |
|          | Adjusted t -5.3861    |         |         |                |
| SRDSDI   | Unadjusted t -7.3794  | 0.4631  | 1(0)    | Non-stationary |
|          | Adjusted t -0.0925    |         |         |                |
| GOVSDI   | Unadjusted t -9.0091  | 0.0587  | 1(0)    | Non-stationary |
|          | Adjusted t -1.5655    |         |         |                |
| TOBINSQ  | Unadjusted t -16.2265 | 0.0000  | 1(0)    | stationary     |
|          | Adjusted t -14.0531   |         |         |                |
| EPS      | Unadjusted t -6.9119  | 0.1187  | 1(0)    | Non-stationary |
|          | Adjusted t -1.1814    |         |         |                |
| SP       | Unadjusted t -65.3419 | 0.0000  | 1(0)    | Stationary     |
|          | Adjusted t -68.0090   |         |         |                |
| PER      | Unadjusted t -12.5015 | 0.0000  | 1(0)    | stationary     |
|          | Adjusted t -7.4427    |         |         |                |
| FSIZE    | Unadjusted t -3.8435  | 0.1998  | 1(0)    | Non-stationary |
|          | Adjusted t -0.8425    |         |         |                |

**Source: Regression Output, 2025.**

The diagnostic test results in Table 6a examined the stationarity of the study variables. Environmental sustainability disclosure index (ESGSDI), Tobin's Q, share price, and price-earnings ratio was found to be stationary at level, confirming their suitability for regression analysis without differencing. In contrast, social sustainability disclosure index (SRDSDI),

governance disclosure index (GOVSDI), earnings per share (EPS), and firm size (FSIZE) were non-stationary, indicating the presence of unit roots at level. This implies that these variables may require transformation, such as differencing or other unit root remedies, to ensure robust and valid estimations in the regression models.

**Table 6b: Diagnostic Tests Results for all the variables at First Differencing**

| Test           | Variable        | Level/1st Diff. [1(1)] | Unadjusted t | Adjusted t | p-Value | Stationarity Conclusion |
|----------------|-----------------|------------------------|--------------|------------|---------|-------------------------|
| <b>ESGSDI</b>  | <b>DESGSDI</b>  | First Difference       | -14.3345     | -5.3428    | 0.0000  | Stationary              |
| <b>SRDSDI</b>  | <b>DSRDSDI</b>  | First Difference       | -12.6437     | -3.7339    | 0.0001  | Stationary              |
| <b>GOVSDI</b>  | <b>DGOVSDI</b>  | First Difference       | -14.5918     | -5.6088    | 0.0000  | Stationary              |
| <b>TOBINSQ</b> | <b>DTOBINSQ</b> | First Difference       | -18.5409     | -11.5773   | 0.0000  | Stationary              |
| <b>EPS</b>     | <b>DEPS</b>     | First Difference       | -16.0678     | -6.5322    | 0.0000  | Stationary              |
| <b>SP</b>      | <b>DSP</b>      | First Difference       | -59.7409     | -59.7073   | 0.0000  | Stationary              |
| <b>PER</b>     | <b>DPER</b>     | First Difference       | -24.1196     | -18.0087   | 0.0000  | Stationary              |
| <b>FSIZE</b>   | <b>DFSIZE</b>   | First Difference       | -14.4980     | -7.3976    | 0.0000  | Stationary              |

Source: Regression Output, 2025

The diagnostic test results presented in Table 6b indicated that all the study variables attained stationarity at first differencing. The Augmented Dickey-Fuller statistics showed highly significant adjusted t-values with p-values less than 0.05 across all variables, confirming that the data were integrated of order one, I(1). Specifically, environmental sustainability disclosure index (DESGSDI), social disclosure (DSRDSDI), governance disclosure (DGOVSDI), Tobin's Q (DTOBINSQ), earnings per

share (DEPS), share price (DSP), price earnings ratio (DPER), and firm size (DFSIZE) all became stationary after differencing. This result implied that the series were free from unit root problems, making them suitable for regression analysis without the risk of spurious outcomes. The stationarity further validated the reliability of the panel regression framework adopted, ensuring robust interpretation of the relationship between ESG disclosures and shareholder value.

### Hypotheses Testing for the Model I

*H<sub>01</sub>: Shareholder value creation has no significant effect on Environmental sustainability disclosure in emerging market corporations.*

**Table 7a: Summary PCSE for DESGSDI DTOBINSQ DEPS DSP DPER and DFSIZE**

| Panel-Corrected       |           |           |          |        |
|-----------------------|-----------|-----------|----------|--------|
| DESGSDI               | COEF.     | STD. ERR. | z        | P> z   |
| <b>DTOBINSQ</b>       | -.015392  | .0180578  | -0.85    | 0.394  |
| <b>DEPS</b>           | .0001861  | .001316   | 0.14     | 0.888  |
| <b>DSP</b>            | -.0003103 | .0001657  | -1.87    | 0.061  |
| <b>DPER</b>           | -2.29e    | .06       | .0000248 | -0.09  |
| <b>DFSIZE</b>         | .1179811  | .0696617  | 1.69     | 0.090  |
| <b>_CONS</b>          | -.0058038 | .022498   | -0.26    | 0.796  |
| <b>N</b>              |           |           |          | 333    |
| <b>R-squared</b>      |           |           |          | 0.0140 |
| <b>Wald chi2(5)</b>   |           |           |          | 7.76   |
| <b>Prob &gt; chi2</b> |           |           |          | 0.1699 |

Source: Regression Output, 2025

The panel-corrected standard error (PCSE) results in Table 7a examined the effect of environmental sustainability disclosure (DESGSDI) on shareholder value creation indicators. The findings revealed that DESGSDI had negative but insignificant relationships with Tobin's Q ( $\beta = -0.0154$ ,  $p = 0.394$ ) and share price ( $\beta = -0.00031$ ,  $p = 0.061$ ), though the latter approached marginal significance. Similarly, the effect on earnings per share ( $\beta = 0.000186$ ,  $p = 0.888$ ) and price-earnings

ratio ( $\beta = -2.29e-06$ ,  $p > 0.10$ ) remained insignificant. Firm size showed a positive coefficient ( $\beta = 0.118$ ,  $p = 0.090$ ), suggesting a weak link between larger firms and higher disclosure practices. The model's explanatory power was very low ( $R^2 = 0.014$ ), while the Wald chi<sup>2</sup> was insignificant ( $p = 0.1699$ ). Overall, environmental disclosures exhibited no robust effect on shareholder value creation.

### Hypotheses Testing for the Model II

*H<sub>02</sub>: Shareholder value creation has no significant effect on Social sustainability disclosure in emerging manufacturing market.*

**Table 7b: Summary PCSE for DSRDSI, DTOBINSQ DEPS DSP DPER and DFSIZE**

|              | Panel-Corrected |           |       |        |
|--------------|-----------------|-----------|-------|--------|
| DSRDSI       | COEF.           | STD. ERR. | z     | P> z   |
| DTOBINSQ     | .002404         | .0091127  | 0.26  | 0.792  |
| DEPS         | -.0001342       | .0004517  | -0.30 | 0.766  |
| DSP          | -1.22e-06       | .0000438  | -0.03 | 0.978  |
| DPER         | -9.41e -07      | .0000134  | -0.07 | 0.944  |
| DFSIZE       | .0252509        | .0243115  | 1.04  | 0.299  |
| _CONS        | -.0002695       | .0053648  | -0.05 | 0.960  |
| N            |                 |           |       | 333    |
| R-squared    |                 |           |       | 0.0032 |
| Wald chi2(5) |                 |           |       | 2.01   |
| Prob > chi2  |                 |           |       | 0.8477 |

Source: Regression Output, 2025

The panel-corrected standard error (PCSE) results in Table 7b assessed the impact of social sustainability disclosure (DSRDSI) on shareholder value creation measures. The coefficients across all indicators were statistically insignificant, indicating no meaningful effect. Specifically, Tobin's Q ( $\beta = 0.0024$ ,  $p = 0.792$ ), earnings per share ( $\beta = -0.000134$ ,  $p = 0.766$ ), share price ( $\beta = -1.22e-06$ ,  $p = 0.978$ ), and price-earnings ratio ( $\beta = -9.41e-07$ ,  $p = 0.944$ ) all showed negligible

relationships with disclosure. Firm size ( $\beta = 0.0253$ ,  $p = 0.299$ ) also failed to display significance, suggesting that larger firms did not benefit more from social disclosure in terms of shareholder value. The model's explanatory strength was weak ( $R^2 = 0.0032$ ), while the Wald chi<sup>2</sup> test was insignificant ( $p = 0.8477$ ). Overall, social sustainability disclosure appeared irrelevant for shareholder value creation.

### Hypotheses Testing for the Model III

*H<sub>03</sub>: Shareholder value creation has no significant effect on Governance sustainability disclosure in emerging manufacturing market.*

**Table 7c: Summary PCSE for DGOVSDI, DTOBINSQ DEPS DSP DPER and DFSIZE**

|              | Panel-Corrected |           |       |        |
|--------------|-----------------|-----------|-------|--------|
| DGOVSDI      | COEF.           | STD. ERR. | z     | P> z   |
| DTOBINSQ     | .0051033        | .0073711  | 0.69  | 0.489  |
| DEPS         | .0003946        | .0004232  | 0.93  | 0.351  |
| DSP          | -.0000631       | .0000453  | -1.39 | 0.164  |
| DPER         | 2.29e-06        | .0000121  | 0.19  | 0.850  |
| DFSIZE       | .0254314        | .0303328  | 0.84  | 0.402  |
| _CONS        | -.0045537       | .0098671  | -0.46 | 0.644  |
| N            |                 |           |       | 333    |
| R-squared    |                 |           |       | 0.0072 |
| Wald chi2(5) |                 |           |       | 3.37   |
| Prob > chi2  |                 |           |       | 0.6437 |

Source: Regression Output, 2025

### Discussion of Findings

The PCSE results for Model III, which investigates the determinants of governance disclosure (DGOVSDI), show that none of the shareholder value proxies significantly influence governance reporting. Tobin's Q, EPS, PER, and firm size have positive but statistically insignificant coefficients, while share price exhibits a negative but insignificant effect. The overall explanatory power of the model is minimal, with an R-squared of 0.0072 and a non-significant Wald chi-

square ( $p = 0.6437$ ). These findings imply that governance disclosure practices in emerging market firms are largely independent of shareholder value creation measures, reflecting weak integration between corporate governance transparency and market-based performance indicators.

The findings from the three models reveal that sustainability reporting dimensions, environmental, social, and governance disclosures, have limited or no significant association with shareholder value creation

proxies in emerging market corporations. Specifically, the environmental disclosure model shows marginal evidence of association with firm size and share price at the 10 percent significance level, while social and governance disclosure models demonstrate no significant relationship with Tobin's Q, EPS, PER, or SP. These results suggest that sustainability reporting in emerging markets is not yet a primary determinant of market valuation or firm financial performance, which aligns with prior studies emphasizing the weak integration of non-financial reporting into corporate value measurement in developing economies (Emeka-Nwokeji & Osisioma, 2019; Lawal, et al., 2024). Similar conclusions are found in Nigerian and broader African contexts, where sustainability disclosures often serve compliance or reputational functions rather than direct value creation mechanisms (Fakoya, 2021; Moses, 2021). By contrast, studies in more developed settings indicate stronger value relevance of sustainability disclosures, often explained through signaling theory and institutional pressures (Friske, et al., 2023; Bose & Khan, 2022). This divergence highlights structural gaps in reporting quality, enforcement, and investor perception within emerging markets. Furthermore, Ali et al. (2018) and Benali, et al. (2021) emphasize that sustainability practices may contribute to long-term resilience, though the short-term financial linkages remain weak. The marginal role of firm size observed here echoes evidence that larger corporations possess greater capacity for sustainability initiatives, even if the value impact is not immediate (Bakar et al., 2019).

## Summary, Conclusion and Recommendations

### Summary of Findings

- i. Environmental sustainability disclosure showed no significant effect by shareholder value creation, though weak associations were observed with firm size and share price.
- ii. Social sustainability disclosure is not significantly influenced by shareholder value creation, reinforcing the view that such disclosures remain largely symbolic in emerging markets.
- iii. Governance-related sustainability disclosure equally had no statistically significant effect from shareholder value creation across the models analyzed.

### Conclusion

The study concludes that environmental, social, and governance sustainability disclosures have no significant effect on shareholder value creation in emerging market corporations. This outcome reflects structural weaknesses in disclosure quality, limited regulatory enforcement, and insufficient investor

emphasis on non-financial reporting (Moses, 2021; Ikor et al., 2022). While larger firms demonstrate a greater tendency to disclose sustainability information, such practices do not yet translate into measurable improvements in market value or profitability. These findings highlight a persistent gap between sustainability reporting and financial performance in emerging markets, suggesting that ESG disclosures remain underutilized as tools for long-term value creation (Ali, et al., 2018; Benali et al., 2021).

### Recommendations

- i. Strengthening Regulations: Policymakers and regulatory agencies should enforce mandatory and standardized sustainability reporting frameworks aligned with international guidelines such as GRI and IIRC, to enhance credibility and comparability.
- ii. Investor Education: Awareness campaigns and training programs are needed to sensitize investors on the financial and strategic relevance of ESG disclosures, thereby improving market responsiveness.
- iii. Corporate Capacity Development: Firms should embed sustainability into core strategy, investing in systems and expertise to ensure high-quality reporting that reflects material risks and opportunities.
- iv. Long-term Orientation: Corporations and regulators should emphasize the long-run benefits of ESG reporting for resilience, competitiveness, and risk management, even when short-term market effects appear minimal.

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## Performance Appraisal Systems and Employee Motivation: Conceptual Review

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### Abstract

*Performance appraisal remains a vital instrument in human resource management, providing a structured means of assessing employee performance and ensuring alignment with organizational objectives. While its importance is widely acknowledged, scholars continue to debate how effectively appraisal systems stimulate employee motivation. This paper offers a conceptual review of performance appraisal practices and their influence on motivation, drawing insights from existing literature. The study employed qualitative research design, using content analysis of scholarly articles, textbooks, and other secondary sources to explore the subject matter. Vroom's Expectancy Theory serves as the theoretical foundation for this paper, emphasizing that employees are motivated when they believe their efforts will result in strong performance and, in turn, lead to desirable rewards. The review underscores that appraisal systems perceived as fair, transparent, and geared toward employee development can promote recognition, career advancement, and stronger alignment with organizational goals. In contrast, appraisal processes viewed as unjust or punitive may weaken motivation, resulting in disengagement and dissatisfaction. Ultimately, the paper concluded that when performance appraisal systems are thoughtfully designed and effectively executed, they can significantly boost employee motivation and enhance organizational performance.*

**Keywords:** Employee motivation, Performance appraisal, Organizational productivity, Expectancy theory

### Introduction

In modern organizational theory and human resource management practice, performance appraisal systems (PAS) are considered fundamental tools for enhancing employee motivation, productivity, and organizational growth. In Western countries, especially the United States, Canada, and the United Kingdom, performance appraisals have evolved from simple rating systems to more comprehensive and participatory approaches that integrate feedback, development planning, and goal alignment. These systems are designed not only to assess past performance but also to guide future improvement, support rewards systems, and foster employee engagement (DeNisi & Murphy, 2017).

According to Armstrong and Taylor (2014), performance appraisal in the West is increasingly developmental, focusing on employee growth, motivation, and alignment with strategic organizational

goals. Organizations in the West have adopted appraisal models such as Management by Objectives (MBO), 360-degree feedback, and competency-based assessments, which have shown significant influence on employee morale, trust, and motivation (Pulakos, 2009). Studies have confirmed that well-designed and fairly implemented appraisal systems can serve as a powerful motivator, boosting employee satisfaction, commitment, and performance (DeNisi & Murphy, 2017).

However, the effectiveness of performance appraisal systems is contingent on organizational culture, leadership style, and the extent to which employees perceive the system as fair, transparent, and relevant. Kuvaas (2006) posits that employee perceptions of appraisal fairness significantly influenced their motivation and work outcomes. In the Western context, where employee rights and participatory management



are more institutionalized, the implementation of PAS tends to yield more positive motivational outcomes.

In contrast, the Nigerian context presents a mixed and often problematic picture. While many public and private organizations in Nigeria have adopted performance appraisal systems, their effectiveness remains questionable. Several studies have highlighted that appraisal processes in Nigeria are often marred by subjectivity, lack of transparency, political interference, favoritism, and poor feedback mechanisms (Obisi, 2011; Eze, 2020; Nnamani, 2022; Odeyemi, 2024). These flaws not only demotivate employees but also erode trust in the appraisal system.

Specifically, in the Nigerian public sector, including ministries and parastatals, performance appraisal is often treated as a routine administrative exercise rather than a strategic human resource development tool. Empirical findings by Okeke et al. (2016) reveal that many employees view the appraisal system as a bureaucratic formality, disconnected from actual performance or reward. Similarly, Olajide (2014) notes that due to weak institutional frameworks, appraisal outcomes rarely translate into promotions, training opportunities, or meaningful career advancement, thus dampening employee morale.

Despite the increasing awareness of the link between motivation and performance, many organizations, especially in the public sector, still face significant challenges in aligning their appraisal systems with motivational goals. As a result, this paper explored how performance appraisal systems influence employee motivation in organizations. It also aims to identify contextual factors that enhance or hinder the effectiveness of appraisal practices in motivating the workforce.

## Literature Review

Bateman and Snell (2011) describe performance as the efficient and effective use of an organization's resources and capabilities to achieve predetermined goals. This definition highlights that performance is not limited to the attainment of outcomes but also concerns how well both human and material resources are managed to reach them. It reflects two key dimensions: efficiency, doing things right and effectiveness doing the right things.

Building on this, Orhero and Okolie (2020) stress that performance should be evaluated through observable behaviours rather than outcomes alone. They caution that focusing too heavily on results may push employees to adopt shortcuts or unethical practices just to meet targets, thereby undermining organizational values. Instead, behaviour-based assessment provides a fairer and more ethical picture of employee contribution. Supporting this view, DeNisi and Murphy (2017) contend that performance comprises specific,

measurable actions and behaviours demonstrated by employees on the job. These behaviours, as Orhero and Okolie (2020) emphasize, are vital for understanding performance and shaping effective developmental strategies.

Motivation, on the other hand, refers to the process of channeling an individual's internal drives and actions toward specific objectives, engaging their energy to achieve them. It begins with a recognized need, which generates motives, produces tension, and stimulates actions directed at fulfilling goals. Motivation, therefore, involves encouraging people to willingly strive toward organizational objectives by meeting their needs (DeNisi & Murphy, 2017).

Bateman and Snell (2011) note that motivation can stem from internal drivers, such as recognition, self-development, and personal satisfaction, or external rewards like salaries, bonuses, and promotions. Feedback mechanisms after performance appraisals help employees identify strengths and areas for growth, while perceived fairness captures employees' sense of justice in appraisal processes, including fairness of outcomes, procedures, and interpersonal treatment. Within Nigeria's civil service, these dynamics apply to permanent staff employed in state ministries.

Ultimately, motivation explains how behaviour originates, is energized, sustained, and directed. It is shaped by both conscious and unconscious factors such as needs, reward value, peer expectations, and individual desires. Motivation directly influences workplace productivity: highly motivated employees perform their duties with greater commitment and efficiency, while demotivated workers often deliver suboptimal results.

## Performance Appraisal Systems and Employee Motivation

Idowu (2017) emphasized that when performance appraisal is directly linked to organizational goals, employees become less hesitant and are encouraged to improve their work contributions. An effective appraisal system helps to bridge employees' individual goals with the overall mission of the organization. In the same vein, Ainnisya and Susilowati (2018) found that appraisal systems significantly influence both job satisfaction and motivation. Similarly, Okoth and Florah (2019) reported that fairness in evaluation, constructive feedback, performance-related incentives, and goal setting had a positive and meaningful impact on teacher motivation in a Kenyan sub-county.

Kim and Park (2017) argued that employees of non-governmental organizations in South Korea could demonstrate higher motivation and engagement if appraisal systems were properly implemented. In contrast, Al-Jedaia and Mehrez (2020) discovered that performance evaluation criteria and leadership had

little influence on employee motivation within Qatar's public sector. Overall, organizational performance is shaped by various factors, including environment, capital, and human resources, with human resources often being the most critical. This underscores the importance of motivating employees to achieve organizational objectives. Consequently, it becomes necessary to examine the link between employee motivation and the key components of performance appraisal systems.

### **Traditional Performance Appraisal Systems and Employee Motivation**

Traditional Performance Appraisal Systems (TPAS) refer to long-established methods used by organizations, particularly in the public sector, to evaluate employee performance. These systems are typically hierarchical and top-down, with assessments carried out once or twice a year by supervisors. The focus is largely on individual traits, behaviours, and past achievements, rather than future potential or developmental growth. One of the most common approaches is the Graphic Rating Scale, where employees are scored (e.g., from 1 to 5) on criteria such as punctuality, communication, and reliability. While simple to apply, this method is vulnerable to bias and errors such as halo effect, central tendency, or overly strict/lenient judgments (Ahmed & Ozturk, 2022).

The Essay Method, another traditional technique, requires supervisors to write narrative reports on employee performance. Though it provides qualitative detail, it often lacks structure and comparability across units (Ibrahim & Lawal, 2021). Similarly, the Checklist Method uses a list of traits or behaviours that supervisors mark off, but it tends to oversimplify performance and does not always capture employees' actual contributions. In Nigeria and other African countries, the Confidential Report System has been common in the public sector. Here, senior officers prepare confidential notes on subordinates, usually without the employees' knowledge or opportunity to respond. This system has been criticized for favoritism, lack of transparency, and limited developmental value (Sakpere, 2021).

A major limitation of these traditional approaches is their backward-looking nature, as they emphasize past behaviour and subjective attributes rather than competencies and future growth. Eke and Osagie (2023) observe that such systems often serve administrative purposes, like promotions or disciplinary actions, while offering little to enhance employee motivation or identify developmental needs. Another weakness is the lack of employee participation. Since most traditional appraisals exclude input from the appraisee, employees may see the process as punitive or disconnected from their roles (Adebayo & Olatunji, 2022). Additionally,

the fact that these reviews are usually annual makes timely feedback and continuous improvement difficult. Despite these drawbacks, TPAS have persisted in public administration due to their simplicity, cost-effectiveness, and ease of use in large bureaucracies. However, increasing demands for transparency, accountability, and employee engagement have exposed their shortcomings. Nwachukwu and Bello (2021) note that many government institutions are now under pressure to reform their appraisal systems by introducing more participatory and developmental tools. Still, TPAS can be effective when implemented with fairness, objectivity, and consistency. When employees perceive the process as impartial and transparent, they are more likely to accept the results and remain motivated (Eke & Osagie, 2023). Okoro and Udoh (2023) argue that linking evaluations to tangible rewards such as promotions, recognition, or professional development opportunities significantly boosts motivation. Likewise, Ibrahim and Lawal (2021) contend that traditional methods can remain relevant if built around clear performance metrics, consistent application, and constructive feedback. In short, while traditional systems are often rigid and outdated, they can still motivate employees if applied fairly, linked to meaningful rewards, and complemented with open communication. Their overall effectiveness depends on how well they balance administrative control with developmental support. Without reform toward greater transparency and participation, however, TPAS risk discouraging rather than motivating employees, especially in the public sector.

### **360-Degree Appraisal and Employee Motivation**

Bateman and Snell (2011) describe the 360-degree appraisal as a comprehensive performance evaluation method that collects feedback from multiple individuals who interact with an employee in different roles. Unlike traditional approaches that rely solely on a supervisor's judgment, this system integrates perspectives from managers, colleagues, subordinates, and in some cases, external stakeholders such as customers. The intention is to generate a more balanced and holistic view of an employee's performance and interpersonal effectiveness.

According to Armstrong (2009), the 360-degree appraisal typically measures an employee's performance across areas such as teamwork, leadership, communication, customer service, and professionalism. Results are usually compiled into a structured report, highlighting both strengths and areas that need improvement. This multi-rater format helps uncover patterns of behaviour and competencies that may not be captured by one-sided, top-down evaluations.

One of the major strengths of the 360-degree approach is its ability to provide a fuller picture of how an

employee is perceived throughout the organization. For instance, an employee who does not get along well with a supervisor might still be rated highly by peers, team members, or clients for collaboration and service delivery. Because feedback is gathered from diverse sources, employees often find it more credible and objective, making them more willing to act on it. Bateman and Snell (2011) note that this broad evaluation process often stimulates behavioural improvement and motivates employees to enhance both technical expertise and interpersonal skills.

This system also aligns well with employee development. It promotes fairness, accountability, and continuous feedback, as employees are not only assessed but also participate in evaluating others. As Armstrong and Taylor (2017) observe, such inclusivity fosters trust, strengthens motivation, and enhances engagement. However, limitations exist: employees may hesitate to give critical feedback for fear of conflict, leading to inflated ratings, while the process itself can create tension among participants (Orhero & Okolie, 2020). Despite these challenges, the 360-degree appraisal has proven to be an effective developmental and motivational tool when supported with coaching and structured improvement plans. By encouraging self-awareness, openness, and collective responsibility, it supports both individual growth and organizational performance (Armstrong & Taylor, 2017).

### **Management by Objectives and Employee Motivation**

Management by Objectives (MBO) is a performance management technique that focuses on clear goal setting, accountability, and shared responsibility between supervisors and subordinates. First introduced by Peter Drucker in 1954, the concept has become a widely applied framework for aligning employee goals with organizational priorities, thereby promoting autonomy and responsibility in the workplace (Bohlander & Snell, 2007). The central idea of MBO is that employees and their supervisors jointly establish specific, measurable objectives that guide performance over a defined period. Progress toward these goals is reviewed periodically, with constructive feedback and adjustments provided when necessary. Because employees actively participate in setting their targets, performance evaluation becomes more transparent and objective, reducing ambiguity and strengthening accountability (Bateman & Snell, 2011; Armstrong & Taylor, 2020).

Research in human resource management emphasizes that involving employees in goal-setting increases motivation, ownership, and satisfaction. Workers are more committed to objectives they helped define, which fosters clarity and reduces miscommunication

(Dessler, 2021; Aguinis, 2019). A major strength of MBO lies in its fairness, it evaluates employees based on measurable outcomes rather than subjective traits, minimizing bias and improving trust in the appraisal system (Armstrong & Taylor, 2020). MBO also empowers employees by giving them flexibility in how they achieve results. This autonomy often enhances creativity, initiative, and engagement, contributing to long-term organizational success (Meyer et al., 2020). Still, challenges exist overly ambitious goals can discourage employees, while rigid adherence to targets may reduce adaptability in changing environments (Bateman & Snell, 2011; Dessler, 2021).

To address these limitations, contemporary approaches often combine MBO with tools like the balanced scorecard, integrating short- and long-term objectives with developmental feedback. When implemented with participation, clarity, and a supportive culture, MBO has a strong positive effect on motivation, improving both individual performance and organizational growth (Dessler, 2021; Aguinis, 2019).

### **Critical Incident Methods and Employee Motivation**

The Critical Incident Method (CIM) is a qualitative, behaviour-based appraisal technique that focuses on systematically recording and analyzing “critical incidents”, key events that highlight either highly effective or ineffective employee behaviours in the workplace. These incidents serve as the foundation for appraisals, coaching, feedback sessions, and developmental discussions (Dessler, 2023). Unlike traditional methods that emphasize routine tasks, CIM concentrates on pivotal moments that significantly affect organizational objectives, customer satisfaction, or team effectiveness. Such events are not everyday occurrences but performance-defining situations that reveal an employee’s strengths or weaknesses. According to Aguinis and Burgi-Tian (2021), CIM provides contextualized, concrete examples, making evaluations more reliable and actionable.

Unlike rating scales or general impressions, CIM is anchored in observable behaviour. For instance, in customer service, a critical incident may involve an employee skillfully handling a difficult client, thereby preserving goodwill and organizational reputation. Because of its focus on actions rather than traits, CIM helps reduce bias and halo effects while supporting fairer assessments (Armstrong & Taylor, 2023). It also aligns with the shift toward continuous performance management, where timely feedback is prioritized over annual reviews (Pulakos et al., 2019).

One of CIM’s greatest strengths lies in its accuracy and developmental value. By offering behaviour-specific feedback grounded in real examples, it builds trust between managers and staff while linking evaluations

to professional growth goals (Boxall & Purcell, 2022). Employees often find this feedback more credible, motivating them to repeat positive behaviours and address areas for improvement (Aguinis & Burgi-Tian, 2021). Furthermore, the method fosters accountability, as employees know their actions, positive or negative are observed and recognized (Dessler, 2023).

Despite these advantages, CIM is not without challenges. It demands consistent observation and documentation, which can be time-consuming, and results often vary depending on a manager's diligence or interpretation of what counts as "critical." Overemphasis on negative incidents or inconsistencies in documentation may reduce fairness and employee morale (Boxall & Purcell, 2022). Similarly, in roles where performance is less visible or team-based, CIM may fail to capture the full scope of contributions (Pulakos et al., 2019).

Still, when properly implemented, CIM can strongly influence employee motivation. Its fairness, specificity, and developmental orientation encourage transparency and trust, while ongoing feedback reinforces learning and engagement. As Armstrong and Taylor (2023) suggest, the method is most effective when balanced with both positive and negative observations and delivered in a constructive tone. Used this way, CIM strengthens motivation, aligns individual behaviour with organizational success, and promotes a culture of accountability and recognition.

### **Ranking and Paired Comparison Methods and Employee Motivation**

The Ranking Method and the Paired Comparison Method are traditional performance appraisal techniques designed to evaluate and compare employees for administrative decisions such as promotions, bonuses, demotions, or terminations. While they are simple and cost-effective, these methods have come under increasing criticism for their limited accuracy, subjectivity, and potential negative impact on employee motivation in contemporary organizations (Boxall & Purcell, 2022).

The Ranking Method involves arranging employees in order of perceived overall performance, from the best to the weakest. This approach does not depend on predetermined criteria but rather on the supervisor's general impressions of employee contributions. As Dessler (2023) points out, it works best in small organizations where managers directly observe staff performance. However, its simplicity makes it vulnerable to bias, favoritism, or the recency effect. Armstrong and Taylor (2023) argue that this method offers little developmental value, as it provides employees with limited feedback about their strengths or areas for improvement.

The Paired Comparison Method builds on ranking by requiring evaluators to compare employees two at a time, selecting the stronger performer in each pairing. Scores are tallied to determine overall rankings (Aguinis, 2019). Although this method reduces some rating errors, it becomes impractical with large teams, as the number of comparisons grows rapidly (Mondy & Martocchio, 2016). Like ranking, it remains subjective and does not provide actionable feedback.

Both methods are valued for their clarity and ability to highlight performance extremes, making them useful in contexts with limited promotion or reward opportunities (Dessler, 2023). However, their comparative nature may foster competition rather than collaboration and leave employees with little guidance for improvement (Armstrong & Taylor, 2023). Recent studies suggest that when ranking is combined with individualized feedback, it can motivate both high and low performers, but without developmental support, those ranked lower often feel discouraged (Nvene et al., 2023).

In modern organizations, these methods are increasingly being replaced or supplemented by participatory and developmental approaches such as 360-degree feedback, Behaviourally Anchored Rating Scales (BARS), and Management by Objectives (MBO), which not only evaluate performance but also provide actionable insights to enhance motivation and engagement (Aguinis, 2019; Dessler, 2023). Thus, while ranking and paired comparison remain useful in specific contexts, their limitations make them less suitable for dynamic, feedback-driven workplaces.

### **Theoretical Framework**

The subject of performance appraisal systems and employee motivation has become a central issue in organizational behaviour and human resource management, drawing global attention. These themes continue to generate widespread debate and scholarly interest because of their significant influence on employee productivity, job satisfaction, and organizational effectiveness. In addressing these issues, researchers have advanced multiple theoretical perspectives to explain how and why employees respond differently to appraisal methods and motivational practices. Among these perspectives, Expectancy Theory provides a useful framework for analyzing the study's focus. It offers a systematic way of explaining how appraisal systems shape employee attitudes, engagement, and performance outcomes.

### **Expectancy Theory**

Originally developed by Victor Vroom in 1964, Expectancy Theory explains employee motivation by linking effort, performance, and outcomes. It suggests that individuals are motivated when they believe their

effort will result in strong performance and that such performance will lead to valued rewards (Vroom, 1964). The theory, rooted in cognitive psychology, highlights the rational decision-making employees engage in when choosing how much effort to invest in their work (Lunenburg, 2011).

The model is built around three key elements: expectancy, instrumentality, and valence. Expectancy is the belief that effort leads to performance, shaped by resources, skills, and support. Instrumentality reflects the trust that good performance will be rewarded. Valence concerns the importance employees attach to rewards, financial, promotional, or intrinsic (Parijat & Bagga, 2014). Motivation thrives when all three components align positively; if one is lacking, motivation weakens.

In performance appraisal systems, transparency, fairness, and clear reward linkages strengthen employee motivation. Studies show that employees engage more positively when they see a direct connection between their contributions, appraisal outcomes, and rewards (Güngör, 2011). Conversely, unfair or unclear systems undermine trust and commitment (Kanfer, Frese, & Johnson, 2017).

Expectancy Theory remains highly relevant today, offering managers a guide for designing appraisal systems that not only measure performance but also inspire motivation by aligning employee expectations with organizational goals.

### **Strengths and Weaknesses of Expectancy Theory**

Expectancy Theory has long been acknowledged as a valuable framework for explaining what drives employee motivation, especially within structured organizations. A major strength of the theory is its focus on the thought processes behind motivation. Rather than seeing employees as passive, it highlights how individuals make deliberate choices about their effort based on the likelihood of success and the attractiveness of rewards (Vroom, 1964). This makes it more sophisticated than simplistic “carrot-and-stick” models of motivation. Another advantage of the theory lies in its adaptability. Because it is grounded in perceptions of expectancy (effort–performance link), instrumentality (performance–reward link), and valence (value of reward), it can be applied across sectors, industries, and job levels. This flexibility allows managers to design tailored motivational strategies that consider employees’ varying expectations and values (Lunenburg, 2011).

The model also provides practical guidance for managers. By pointing to three areas, boosting employee confidence, ensuring fair and consistent rewards, and aligning rewards with what employees truly value offers a structured approach to enhancing motivation (Parijat & Bagga, 2014). This is particularly

useful in designing appraisal systems, incentive structures, and development programs. Furthermore, because it ties effort directly to performance outcomes, the theory reinforces accountability and performance-driven cultures, making it highly relevant to systems like performance appraisals and goal-setting (Isaac, Zerbe, & Pitt, 2001). Empirical research also supports its predictive value, showing that employees are more motivated when they trust that their efforts will produce meaningful results (Kanfer, Frese, & Johnson, 2017).

Despite these strengths, the theory has been criticized for certain limitations. One of the main concerns is its assumption of rational decision-making. In practice, emotions, social relationships, politics, and biases often influence employee behaviour, meaning that people do not always act as rational calculators (Kanfer, Frese, & Johnson, 2017). Another weakness is its individual focus, as it overlooks how group dynamics, organizational culture, and leadership can also shape motivation (Latham & Pinder, 2005). This is particularly relevant in collectivist contexts, where team outcomes may be valued more than individual rewards.

The theory also presumes that employees clearly understand how their effort connects to outcomes. In organizations with unclear metrics or inconsistent reward systems, this link may not be obvious (Lunenburg, 2011). Measuring expectancy, instrumentality, and valence in real settings is also difficult, as these factors vary widely depending on personal values and past experiences (Mitchell & Daniels, 2003). Additionally, the framework gives less attention to intrinsic motivators like autonomy, meaning, or personal growth, which play a crucial role in creative or service-oriented work (Gagné & Deci, 2005).

Finally, Expectancy Theory is most effective in structured environments with predictable outcomes. In fast-changing or highly creative roles, where performance and rewards are less directly connected, its practical application becomes limited (Kanfer et al., 2017).

### **Application of the Theory to the Study**

Vroom’s Expectancy Theory offers a valuable framework for explaining how performance appraisal systems influence employee motivation. The theory suggests that people are driven to exert effort when they believe three key conditions are fulfilled: their effort will result in successful performance (expectancy), good performance will be acknowledged and rewarded (instrumentality), and the rewards provided will be meaningful to them (valence).

In the context of performance appraisal, this implies that employees become more motivated when they are

confident that their contributions will be assessed fairly through an unbiased appraisal process. When appraisals accurately capture their performance, workers anticipate that such recognition will translate into tangible benefits, such as promotions, salary increments, professional training, or intangible rewards like acknowledgment and career growth. Importantly, these rewards must resonate with employees' personal goals and priorities, whether that is financial security, stability, or career advancement.

On the other hand, when the appraisal process is perceived as unfair, inconsistent, or unrelated to meaningful rewards, employee motivation tends to weaken. For instance, if excellent performance is overlooked or if rewards fail to meet expectations, employees may lose interest, become dissatisfied, and reduce their level of effort.

Thus, expectancy theory emphasizes the need for appraisal systems that are transparent, equitable, and connected to rewards valued by employees. Such systems strengthen the belief that hard work produces worthwhile outcomes, thereby enhancing motivation and reinforcing organizational commitment.

### **Empirical Review**

Devisri and Sheeba (2025) highlight that a properly implemented performance appraisal system promotes transparency, acknowledges employee efforts, and provides direction for career growth. When the process is fair, it strengthens employee–organization relationships, increasing satisfaction and retention. Thus, performance appraisal serves not only as an evaluative tool but also as a driver of motivation and organizational effectiveness. Similarly, Gupta and Sharma (2016) found that transparent and unbiased appraisal practices significantly improve employee morale, engagement, and productivity. Employees who received consistent feedback felt valued and motivated, while organizations with structured appraisal systems experienced lower turnover and improved overall performance.

Karahan and Kurtulmuş (2017) explored the link between appraisal and motivation through both literature and interviews with ten managers, supervisors, and team leaders. Their findings revealed that most managers believed appraisals positively influence motivation, especially when feedback is emphasized. They concluded that performance appraisal contributes meaningfully to employee motivation. In a Nigerian context, Orhero and Okolie (2020) examined appraisal practices within the Edo State Internal Revenue Service. Using a survey of 150 respondents and statistical analysis, they found that appraisal components such as Management by Objectives (MBO), feedback, and 360-degree evaluation had significant positive effects on employee

performance. The study emphasized that well-structured appraisals enhance productivity, strengthen organizational success, and should be communicated to employees as developmental rather than punitive tools. In Nepal, Dangol (2021) investigated how appraisal processes influence motivation, using descriptive design and data from 120 service-sector employees. Results showed that regular and fair evaluations strongly boost morale and performance. The study stressed that continuous feedback and clear expectations are crucial, recommending that appraisal be treated as an ongoing process rather than a yearly ritual. Similarly, Fakai (2022), studying commercial banks in Sokoto State, Nigeria, found a strong positive relationship between objective appraisal criteria and employee motivation. Employees remained committed when evaluations were based on clear, measurable standards tied to career growth and rewards.

Farhad and Nazrul (2023) examined private banks in Bangladesh and confirmed that fair appraisal systems enhance motivation and retention. Employees viewed the process positively when compensation, rewards, and feedback were linked to evaluations. The authors recommended regular review of appraisal practices, stronger reward systems, and participatory work environments to sustain motivation and commitment. In the Indian business administration sector, Chaitanya, Teas, and Bhavikatti (2025) also confirmed the motivational role of appraisal, noting its impact on career growth, job satisfaction, and performance. They suggested that HR systems adopt fairer and clearer appraisal frameworks to strengthen morale and productivity.

Finally, Keerthivasan and Meera (2025) evaluated appraisal systems across corporate and manufacturing sectors, using responses from 80 employees. Their study found that frequent, constructive, and transparent evaluations significantly enhance satisfaction and engagement. However, they also identified challenges such as bias and lack of openness. The authors argued that as workplaces evolve, appraisal systems must adapt through digital tools, personalized feedback, and career-centered goals. They concluded that fostering a culture of fairness, communication, and growth is essential for maintaining motivation and long-term organizational success.

### **Research Methods**

This paper adopted a qualitative research design aimed at gaining deeper insights into performance appraisal systems and their impact on employee motivation. The choice of a qualitative approach was appropriate, as it facilitated the exploration of ideas, viewpoints, and interpretations found in existing scholarly works. The data for the study were obtained entirely from secondary sources such as peer-reviewed journal

articles, academic textbooks, conference proceedings, and reputable online publications related to human resource management, performance appraisal, and employee motivation.

The main technique used for data analysis was content analysis. This process involved systematically examining, interpreting, and synthesizing information from the reviewed literature to identify recurring themes, patterns, and areas of divergence. The analysis was further guided by Vroom's Expectancy Theory, which provided a conceptual lens for understanding the link between appraisal practices and employee motivation. Drawing on secondary data enabled the paper to access diverse scholarly contributions and ongoing debates, thereby ensuring comprehensive coverage of the subject.

Through this method, the paper overcame the constraints of primary data collection while still maintaining a rigorous engagement with established knowledge. The qualitative content analysis, therefore, offered a solid basis for evaluating how performance appraisal systems can either encourage or diminish employee motivation within organizational contexts.

## Conclusion

This paper examined the relationship between performance appraisal systems and employee motivation, highlighting both theoretical perspectives and practical realities. Performance appraisal remains central to human resource management, not only as a tool for evaluating contributions but also as a means of aligning employee performance with organizational goals. However, its motivational impact largely depends on how appraisal systems are designed, communicated, and implemented.

Vroom's Expectancy Theory provides a useful framework for understanding this link. The theory holds that employees are motivated when they believe effort will lead to good performance (expectancy), performance will be rewarded (instrumentality), and the rewards are meaningful to them (valence). Applied to appraisals, motivation increases when employees perceive the process as fair, transparent, and tied to outcomes they value, such as promotions, recognition, or career growth. By contrast, biased or inconsistent appraisals reduce trust and weaken motivation.

The review emphasizes that the strength of performance appraisal lies in its application rather than its mere existence. Systems that focus only on criticism can damage morale, while those that highlight strengths, provide feedback, and support employee development foster stronger commitment. Importantly, appraisal systems should reflect individual differences, since employees value different rewards, financial incentives, career opportunities, or work-life balance. A flexible

and inclusive approach is therefore more effective than a uniform system.

Fairness and transparency emerged as critical factors in building employee trust. Clearly communicated criteria and employee involvement in goal-setting enhance ownership and reduce bias, making appraisal a participatory process. Beyond motivation, appraisals also offer valuable management insights into training needs and performance gaps, strengthening both individual growth and organizational development. Nonetheless, challenges persist. Poorly trained managers, rigid organizational cultures, or lack of empathy can undermine the credibility of appraisals. Consistency in linking effort, performance, and reward is crucial to sustain motivation.

In conclusion, performance appraisal systems can be powerful drivers of motivation if they are fair, transparent, and strategically linked to meaningful rewards. Guided by expectancy theory, organizations should view appraisal as a motivational strategy rather than a routine exercise—one that values employees, builds trust, and enhances overall performance.

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## Advertisement and Customer Patronage of Aquarap Products in Enugu State Metropolis

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### **Abstract**

*The study examined the effect of advertisement on Customer patronage of AquaRap product in Enugu State Metropolis. This study sought to determine the effect television advertising on Customer patronage of AquaRap products, ascertain the influence of Radio advertising on Customer patronage and examine the nature of the relationship between Print advertising and Customer patronage. The descriptive survey research design was adopted for the study. The population for the study was 240, out of. Data were collected through primary. Out of 240 copies of the questionnaire distributed, 202 copies (84%) were returned while 38 copies (16%) were not returned. The hypotheses were tested using simple linear regression and Pearson product moment correlation coefficient. The findings revealed that television advertising has a significant effect on Customer patronage ( $r = 0.856$   $F = 99.104$ ;  $t = 31.072$ ;  $p < 0.05$ ). Radio advertising has a significant effect on Customer patronage ( $r = .935$ ;  $F = 592.685$ ;  $t = 24.345$ ;  $p < 0.05$ ). There is a significant relationship between Print advertising and Customer patronage ( $r = .856$ ,  $P < 0.05$ ). The study concluded that advertising is a vital, multi-faceted tool that significantly drives customer patronage by creating awareness, fostering brand loyalty, and influencing purchasing behaviors, though its effectiveness hinges on strategic execution and adaptation to evolving consumer preferences and media landscape. The study recommended that Firms should adopt television advertisement for their because it enhance brand awareness, building customer trust, encouraging purchase intentions, fostering loyalty, and increasing sales. The effectiveness relies on strategic execution, as high-quality, persuasive, and consistent messaging, including product demonstrations and emotional appeals, are crucial for engaging audiences and motivating them to act on the information*

*Keywords: Advertisement; Customer patronage; television advertising; Radio advertising and Print advertising*

### **Introduction**

Advertising is one of the biggest and powerful marketing tools used in promoting the goods and services of an organization. In a layman understanding, a market is a place where buying and selling of goods and services are rendered. According to American Marketing Association (1985), marketing is defined as: "The process of planning and executing the conception, pricing, promotion and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives."

Areas (2008) stated that "advertising is the structured and composed, non-personal communication of information usually paid for and usually persuasive in nature about products, services and ideas, through identified sponsors, through various mass media such

as Television, Billboard, Newspaper, Magazines to raise awareness

Advertising is very important in our society. According to Robinson, cited in Ashkan (2016), advertising is a prominent feature of modern business operations. It is a viable tool to place a product at the top of the mind of potential customers as one can encounter advertising messages, while watching TV, reading magazines, listening to the radio, surfing the internet, or even simply while walking down the street, as advertisement has a stimulating influence on purchasing behavior of the customer. This tradition of making advertisements available at every turn is further fueled by the urge of marketers to reach a large number of people so that their product may receive optimum exposure in order to create brand loyalty, deter entry of new companies

and consequently increase sales revenue and profits of the organization (Ashkan, 2016).

Form advert shown on the television or played on radio, Advertising has strongly affected our society in the way we behave, it decides what we need, what we care about, how we dress, how we raise our children, how to take care of somebody when the temperature increases or decreases, advertising plays huge roles in the Society, it informs the people about the latest or trending goods and services and how to use them. It provides valuable information to consumers that tell them about the product and service choices, as well as comparing features, benefits, and price

Advertising is any paid form of non-personal communication about an organization or its product to a target audience through a mass/broadcast medium by an identified sponsor. It should be observed that for any promotional activity to be called advertisement it must be paid for. In the real sense, it is the method used by companies for creating awareness of their products, as well as making new products known to the new and potential consumers. This thesis however, centers on the impact of advertising on the sales volume of a product. This work will shed light on how advertising can really affect a consumer's buying decisions in a growing economy like that of Nigeria and how successful advertising can keep businesses going even in the midst a tough competition. More so, advertising as a promotional tool also tends to remind, reassure and influence the decisions of the consumers because an advertisement itself enlightens, educates, and persuades consumers on their acceptability of the product offering. Advertisement in such a media as print (newspaper, magazines, billboards, flyers) or broadcast (radio, television) typically consist of pictures, headlines, information about the product and occasionally a response coupon. Broadcast advertisement on the other hand consists of an audio or video narrative that can range from 15 seconds spots to longer segments known as infomercials, which generally last 30 to 60 minutes. (Busari 2002)

Advertisements can also be seen on the seats of grocery carts, on the wall of airport walkways, on the sides of buses, airplane and train advertisements are usually placed anywhere an audience can easily and/or frequently access visual and/or video. (Busari 2002)

Television advertising, therefore, is a span of television programming produced and paid for by individuals and organizations and which conveys a message typically to market a good, idea, or service. It is usually between 15 and 60 seconds in length. Because of its audio-visual power, television advertising is generally considered the most effective mass marketing format. As a result of the effectiveness of television and high competition among industrial firms and companies in the marketing of products,

firms resort to the use of different advertising techniques, including testimonials. A testimonial entails bringing celebrities or experts or satisfied users to openly acknowledge the effectiveness of a good, idea or service. This is usually thought to be very convincing as the celebrity, expert or satisfied user attests to how others can benefit from the product. The use of an endorser in advertisement has long been established as one of the strategies advertisers can use to make their products influential and it is also "...a mainstay in advertising" (Vivian, 2009). Testimonials from satisfied consumers can also come in the form of letters that appear in printed advertisements. The letters from long time users praise the good or service and how it has changed their lives for the better. In general, each comment focuses on one specific benefit that a product offers such as saving time, low cost, ease of use or speed of result

Print advertising plays a very dynamic role for changing the consumer's behaviour with effective use of bill boards, graphical representation of brands; attractive models are used and many other related activities performed for more consumers' attractions (Randall, Leone, & Robert, 2004)

Radio has been a powerful mean of advertising since 1950s and has grown in importance with its color effect and is going of rule for few more decades to come. If these are major indoors colorful media, the outdoor advertising has its own developments such as traveling displays, and Sandwichman (Sontakki: 1999)

Social media network sites such as, Facebook, Twitter, LinkedIn, Youtube, Google+, etc. now allow member individuals to interact with one another and to build relationships even many companies across the world have joined but they joined only the fastest growing networks such as Facebook and Twitter, so as to connect with their customers (Trattner and Kappe 2012). The social media networks act so fantastically as the vehicle helping companies to gain traffic or attention to their own website usually through the use of Links via the adverts they place on the social media websites (Chinag and Chung, 2011; Deis and Hensel, 2010)

### **Statement of the problem**

Advertising is the composed non-personal communication of information, usually paid for and usually persuasive in nature about products, goods, services and ideas by ideas identified sponsors through various media such as television, radio, print and Social media advertising.

Television has remained the most popular medium of advertising in spite of some of its weakness or limitations like the high cost of television advert production and placement, the problem of cluttering of

advertisements on television, channel raise problem in televisions network transmission and its high level of inaccessibility

This print advertising budget is considered as an important objective from company promotion their brands in the market. The researcher suggested that there are four commonly used different methods for setting the promotion budget related to printing advertising that directly as well as indirectly connected with company value and worth in the marketing which in long run affect company revenue.

Radio advertising their product without considering the consumer behavior. They do not consider about the consumer's deceive, regarding advertising and effect of advertising on buying attitudes of customers. That is why the advertisement fails to increase the goodwill of products among customers

Apart from the rising competition among the currently existing rivals, there seems to be a daunting tendency that Nigerians would never dare transact business via the internet with any unseen person who displays many attractive pictures of product items, tagged with prices and might not physically exist anywhere but prompting prospective buyers to pay upfront so that the items would be delivered at their doorsteps anywhere in the country. This has always been a questionable issue as a result of the pervasive menaces of Yahoo –Yahoo internet frauds and has shaped the perception of many Nigerians toward being careful when operating on the internet especially when it comes to their supply of certain personal information. Meanwhile, many of the Nigerian online retailers have provided sufficient rooms for any likely doubt about the authenticity of their transaction via the social media networks with any prospective customers by allowing them to pay for any product of their choice on delivery. But still, other numerous problems proliferate thus, impeding against the patronage tendencies of Nigerians

### **Objective of the Study**

The main objective of the study focuses on effect of advertisement on Customer patronage of Aqua Rap products in Enugu State metropolis. The specific objective is:

- i. To determine the effect television advertising on Customer patronage of AquaRap products in Enugu State Metropolis
- ii. To ascertain the influence of Radio advertising on Customer patronage
- iii. To examine the nature of the relationship between Print advertising and Customer patronage

## **Review of Related Literature**

### **Concept Advertising**

Alonge (2001) feels that advertising can be defined as any paid form of non-personal communication which is directed to the consumers or target audiences through various media in order to prevent and promote product, services and idea. This means that advertising is branch of commerce which used to create awareness for particular product and it must be paid for. Advertising informs, educates and persuade people to buy the advertised goods or services. Gillian (2009) views it as “means of drawing someone’s attention to something or notifying or informing somebody of something”. Advertising is impersonal communication of information about products, services or ideas through the various media, and it is usually persuasive by nature and paid by identified sponsors (Bovee, 1992).

Kotler and Keller (2012) defined advertising as “any paid form of non-personal presentation and promotion of ideas, goods or services from the sponsor evident by the print media (newspapers and magazines), telecommunications (radio and television), network communications (telephone, cable, satellite, wireless), electronic media (audiotape, videotape, videodisk, CD-ROM, web page), and display media (billboards, signs, posters).” The American Marketing Association (2018) describes the term advertising as a placement of announcement and persuasive messages in a time or space which is purchased in any of the mass media. Kotler, (2010, p.762) defines advertising as any paid form of non -personal presentation and promotion of ideas, goods or services through mass media such as newspapers, magazines, television or radio by an identified sponsor.”

### **Television advertising and customer patronage**

The word “television” is the combination of two words “tele” meaning “for” and vision meaning “to see. This television means “seeing from a distance” which today has come to mean “viewing of distant object or event by electrical transmission waves”. Advertising use this medium because they can reach mass audience with their messages at relatively low cost per target reached, this is why it is considered to be the most powerful and influential medium among advertising experts and practitioners. This medium also has the ability to combine sound, light, sight, motion, color, and action which makes its advertising message very attractive and effective. Television has remained the most popular medium of advertising in spite of some of its weakness or limitations like the high cost of television advert production and placement, the problem of cluttering of advertisements on television, channel raise problem in televisions network transmission and its high level of inaccessibility, especially in rural communities (Bovee and Arens, 1986).

### **Radio Advertising and Customer Patronage**

Today, despite countless evolutions in digital marketing, radio continues to be one of the most valuable methods of advertising estimated to reaching 93% of adults each week (Theisen, 2019). Television and digital media may have a part to play in the marketing world, but radio has an impact on the consumer world that simply can't be matched. Radio is a low -cost technology, with low setup costs with the costs of distribution being close to zero. As an auditory medium, it does include those who are unable to read or write and it is ideally suited to conveying content in vernacular languages (Onyebuchi, et al 2019). For these reasons, it is possibly not surprising that radio has become an intimate and pervasive presence throughout the developed world

and, at the same time, has penetrated into the remotest areas of the poorest undeveloped countries (DFID 2004). Majority of the radio listeners are loyal to their favourite stations and are often tuned for long period to a station (Ismaila, 2013). Listeners use and relate to radio in a very different way to other media. Ninety percent of listeners are actually doing something else while listening to radio. Typically, this will be routine tasks for example, driving, or waiting to get home on the train, chores, housework and others of people listen to radio when other people are around: it is still very rarely a group experience (Onyebuchi, et al 2019). Newspapers have been around for hundreds of years, since the invention of the printing press. However, it was radio advertising that offered companies a near real-time opportunity to reach their target audience.

### **Print Advertising and customer patronage**

Today, most of the smart companies marketing department are plays a very dynamic role for introducing their brand to consumers (Baker & Churchil, 2001). In accordance, to the past literature, it is analysed that sales are highly dependent upon marketing their brand. The process of marketing their brands is revolving around to determine and analyse the consumer perception, positive attitude and behaviour towards their company offering brands fulfill their expectation, needs and desire (Daneshvary & Rennae, 2000). Here, the contribution of company top level management prefer by the use of print advertising. The printing advertising is used for memorized their company brand in the mind of consumers. It is true the relationship among brand image, consumer buying behaviour is positively correlated with print advertising (Raymond & Thomas, 2008).

### **Customer Patronage**

Customer purchasing behavior or customer patronage can be defined as the study of household (individual) or business entities and the processes they go through to

choose, utilize and discard merchandise to fulfill needs and the effect that these procedures have on the customer and community (Hawkins et al., 2001). Customer purchasing behaviour is all the procedures a customer goes through to choose, buy, utilize or get rid of merchandise to fulfill needs and wishes (Solomon et al., 2010) Different definitions accentuate the physical, mental and emotional procedures and need and wants, and in addition the impact of anticipated danger (Arens, 2009). Market segmentation is one of the vital parts of customer purchasing behaviour, since purchasers in a segment are pretty much identical regarding items needs and craving (Lantos, 2011). Regular purchasers settle on various choices in their everyday life. outlining in settling on choice or the demonstration of buying, customer communication are not just the only things that define consumer behaviour, but also, the scope of encounters that connected with consumption is a piece of purchaser conduct too (Schiffman et al., 2008).

### **Theoretical Review**

#### **The Elaboration Likelihood Model**

The Elaboration Likelihood Model (ELM) was propounded by R. E. Petty and J. T. Cacioppo in 1986. The model states that there are two routes -the central route and the peripheral route in a communication process (Petty and Cacioppo, 1986). The central route is involved when the receiver actively processes the information and is persuaded by the rationality of the arguments. The peripheral route is involved when the receiver does not expend the cognitive energy to evaluate the arguments and process the information in the messages but is guided more by peripheral cues. These cues can include source credibility, the style and the format of the message, the mood of the receiver and so forth.

With the central route, persuasion is most likely to occur when the receiver is led to have predominantly favourable thoughts about the advocated position. Two factors are important in leading the receiver to have either favourable or unfavourable thoughts. The first is the agreement between the receiver's initial position and the recommended position. The second factor is the strength of the argument. The stronger or more carefully defined the argument, the more likely it is that the receiver will be favourably disposed to the message. Under the peripheral route, persuasion will not depend on thoughtful consideration of the message but on the receiver's use of simple decision rules or heuristics. These principles are activated by cues in the persuasion situation. According to Petty and Cacciopo (1986), the three major heuristics are credibility, liking and consensus.

Elaboration Likelihood Model emphasizes the importance of understanding audience members before

creating a persuasive message. Thus, using the central route, the advertisers must make sure that the testifier's or endorser's story or message is very factual and convincing. Also, using the peripheral routes the testifier used must be credible and one whom the audience like, especially in the case of celebrity endorsements.

Elaboration Likelihood Model is relevant to this research as it gives some insight into the process underlying advertising effectiveness through the principles inherent in the theory. The two cues underlying the theory (central and peripheral routes) will help determine the patterns of subjectivity employed by consumers in determining their attitudes towards an advertisement.

Likewise, Elaboration Likelihood Model helps to "describe the process that results from a motivational state" (Bittner and Obermiller, 1985). According to Petty and Cacioppo (1986), Elaboration Likelihood Model has important implications for advertising in that different kinds of appeals may be effective under different kinds of conditions in different kinds of audiences.

### **Empirical Review**

Nweze ., Ezaka ., Ewa-Ibe ., Nwigwe ., Egwu ., Asogwa ., Chidi-Irem ., Isiani ( 2022) analysed the influence of television advertising in promoting MTN products in Enugu metropolis. The main objective is to find out if the residents of Enugu Urban Area have access to television, to determine the frequency of exposure of residents of Enugu to MTN advert messages on television, to examine the impact of MTN television advertisements on residents of Enugu Urban Area. The type of research design for this study is descriptive survey design. The population consist all the areas in Enugu State. They are: New heaven, Abakpa-nike, Ogui new Layout, Achara Layout and Independence Layout. The study presented that Advertising is without doubt a very important promotional tool, its importance can be understood from its ability to attract attention and having drawn customer's attention, it provides information that can prompt them (consumers) to further actions which means that it encourages continuous patronage. The researcher recommended that MTN-NG should intensity efforts in nourishing good customers' relationship. There should also be growing movement towards integrating all the messages created by their various communication agencies and sent out by various departments within the company in order to achieve consistency. In order for MTN to prosper against its rivals, they have to be innovative and alert to whatever subtle move made by other competitors in order to continue occupying its leadership position

Olowokudejo (2021) examined the impact of advertisement on customer patronage in the Nigerian insurance. Industry. It was guided by four research questions and one hypothesis. Questionnaire was used for data collection and 400 respondents participated in the study. Descriptive statistics such as frequencies, percentage and tables were used to present the data collected; while the hypothesis was tested using the Chi-square at 0.05 level of significance. The result of the study revealed the following as various advertising options in Nigeria :paid search advertising ,social media advertising ,outdoor advertising,broadcast advertising,print advertising and native advertising;arranged in the order of frequency of use.The result of this study further revealed that advertisement, to a large extent attracts new clients and aids in the reviving of dormant clients a s well as influence demand in the insurance sector. Based on these findings, it was concluded that advertisement has significant impact on customer patronage in the insurance sector and it was recommended, among other things that management of insurance companies must advertise their products benefits to encourage patronage from potential customers as well as existing and dormant customers . This is because advertisement has proven to be a major means by which potential customers learn about the existence of companies and their service offerings;new and existing customers get acquainted with the company and their offerings and dormant customers get re engage to the company

Uwem ; Iniobong and Inyene (2015) did a study on the influence of testimonials in television advertising on the consumption of select antiseptic products among residents of Uyo Urban of Akwa Ibom State in Nigeria. The products were Harpic, Dettol and Safeguard soap. The objectives of the study were to ascertain the extent and type of influence that testimonials had on the patronage of the select antiseptic products and to ascertain other possible factors that influenced the patronage of these products. To achieve these objectives, the survey method was used for the study. The population of the study was 305, 961 being the population of the residents of Uyo and the sample size was 400, using the Taro Yamane's formula for determining sample size. The instrument used for the study was the questionnaire while the multi-stage sampling method was used to reach the final respondents. The research results revealed that consumers perceived the testifiers of Harpic, Dettol and Safeguard soap to be credible and thus developed a favourable attitude towards those products so advertised. However, this positive attitude triggered by testimonials did not necessarily extend to actual purchase in most cases. Patronage tended to be influenced by other factors such as product quality , price, packaging and brand loyalty. Based on the

findings, it is the conclusion of this study that testimonials in television advertising do not directly influence the purchase of antiseptic products, but to a large extent aid the consumers to recall the products so advertised and help them to develop a favourable attitude towards the products. It is therefore recommended that the advertisers should not channel all their resources into the advertisement of products, but should also strive to improve product quality and packaging over time

Ani and Anyasor (2018) Investigated the effect of radio and television advertising of commercial bank Product in Anambra State. It sought to reveal the extent these media Influence the attitudes; draw attention, build interest And inspire the customers to patronize banks ' products and services in the state. Relevant theoretical and empirical literatures were reviewed to build the study framework. A sample of 254 Was statistically drawn And proportionally distributed among the participating Bank staff. The Primary data used in The study were with The aid of structured questionnaire. Frequency tables and percentages And multiple regression were employed To analyse the data. The study found that radio/television Adverts played role in informing the customers about products and Services offered by the banks; it have significant influence on persuading the customers; and ultimately patronizing the advertised products and services indicating that the media significant role in positively influencing the attitudes; knowledge and purchase behavior of target audience of the banks. The study therefore concluded that radio and television adverts have significant effect in advertising commercial banks products and services in Anambra State

Nyarko (2013) investigated the effects of electronic media advertising on rural banking in Ghana with the view to establishing its contribution to rural banking in the country. The Questionnaires were administered to 350 rural bank customers in Ho Municipality. The Statistical Package for Social Sciences (SPSS) was deployed in the data analyses. The results show that

radio advertising Is the main tool proven to be more Effective adopted in this area to persuade These customers. Thus, it becomes important That the bank should increase radio advertising Time to enhance customer patronage. Based On the foregoing, it is clear that the studies reviewed Have mixed findings. Majority show that promotions By radio, television or newspapers do not significantly Drive customers to choose a bank or its products and services. Products, services and their related issues are the major drivers of the customers decisions.

### **Method and Materials**

The study adopted research survey design. The populations was draw of Enugu metropolis based on households who used Aqua Rap Products, The population and sample size of 240 respondents were obtained .The primary Information was obtained through the use questionnaire The instrument was validated through face to face content validity by giving some copies of instrument to marketing experts who made the necessary corrections for the instrument to measure what it ought to measure, and reliability test was obtained through the use of spearman rank order correlation coefficient and the coefficient value was  $r = 0.78$  indicating high internal consistency . Out of 240 copies questionnaire distributed, 202 copies of questionnaire were returned while 38 copies not returned. The tool used for test of hypotheses was simple linear regression and Pearson product moment correlation coefficient.

### **Data Analysis and Discussion**

The data obtained from the field were presented and analyzed with descriptive statistics to provide answers for the research questions while the corresponding hypotheses were tested with multiple regression at 0.05 alpha level. The five Likert scale form was design as SA = strongly agree, A= Agree, U= Undecided, D = Disagree and SD = Strongly Disagree

**Table 4.1: Responses on Television Advertising**

| S/N | Questions                                                                          | Strongly Agree  | Agree          | Undecided    | Disagree     | Strongly Disagree | Total |
|-----|------------------------------------------------------------------------------------|-----------------|----------------|--------------|--------------|-------------------|-------|
| 1   | Television advertisement Reach, the broadness of the audience exposed to the ad    | 103<br>(50.99%) | 82<br>(40.59%) | 5<br>(2.48%) | 6<br>(2.97%) | 6<br>(2.97%)      | 202   |
| 2   | Frequency, the number of times a viewer sees the ad enhance patronage of product   | 108<br>(53.47%) | 75<br>(37.13%) | 4<br>(1.98%) | 8<br>(3.96%) | 7<br>(3.47%)      | 202   |
| 3   | Television ad. Conveys the product's benefits and creates an emotional connection. | 146<br>(72.27%) | 44<br>(21.78%) | 3<br>(1.49%) | 4<br>(1.98%) | 5<br>(2.48%)      | 202   |

Source Fieldwork 2025

Item 1 of table 4.1 Indicates that 103(50.99%) of the respondents strongly agreed that Television advertisement Reach, the broadness of the audience exposed to the ad, 83(40.59%) agreed, 5(2.48%) were undecided, 6(2.97%) disagreed while 6(2.97%) strongly disagreed to the statement. The above result indicates that Television advertisement Reach, the broadness of the audience exposed to the ad

Item 2 of table 4.1 states that Frequency, the number of times a viewer sees the ad enhance patronage of product, 108 (53.47%) strongly agreed with the statement, 75(37.13%) agreed, 4(1.98%) were undecided, 8(3.96) disagreed while 7(3.47%) strongly

disagreed to the statement. Thus, the result reveals that Frequency, the number of times a viewer sees the ad enhance patronage of product

Item 3 of table 4.1 shows that 146(72.27%) of the respondents strongly agreed that Television ad. Conveys the product's benefits and creates an emotional connection, 44(21.78%) agreed, 3(1.49%) of the respondents were indifference about the statement, 4(1.98%) disagreed to the statement while 5 (2.48%) of the respondents strongly disagree with the statement. The above finding reveal that Television ad. Conveys the product's benefits and creates an emotional connection

**Table 4.2 Responses on Radio advertising**

|   |                                                                                                                                         |                 |                 |              |              |              |     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------|--------------|--------------|-----|
| 4 | Radio Ad, ensure that creative elements such as ad length, format, voice tone, music, and jingles are tailor towards customer patronage | 83<br>(44.09%)  | 102<br>(50.50%) | 7<br>(3.47%) | 5<br>(2.48%) | 5<br>(2.48%) | 202 |
| 5 | Radio Ad, ensure media planning factors like station, target audience, reach are for customers                                          | 140<br>(69.31%) | 51<br>(25.25)   | 3<br>(1.49%) | 5<br>(2.48%) | 3<br>(1.49%) | 202 |
| 6 | Radio Advertisement promotes customer patronage                                                                                         | 68<br>(33.66%)  | 118<br>(58.42%) | 4<br>(1.98%) | 7<br>(3.47%) | 5<br>(2.48%) | 202 |

Source: Fieldwork 2025

Item 4 of table 4.2 states that Radio Ad, ensure that creative elements such as ad length, format, voice tone, music, and jingles are tailor towards customer patronage , 83 (44.09%) strongly agreed with the statement, 102(50.50%) agreed, 7(3.47%) were

undecided, 5(2.48%) disagreed while 5(2.48%) strongly disagreed to the statement. The result indicates Radio Ad, ensure that creative elements such as ad length, format, voice tone, music, and jingles are tailor towards customer patronage



Item 5 of table 4.2 shows that 140(69.31%) of the respondents strongly agreed that Radio Ad, ensure media planning factors like station, target audience, reach are for customers, 51(25.25%) agreed, 3(1.49%) of the respondents were indifference about the statement, 5(2.48%) disagreed to the statement while 3 (1.49%) of the respondents strongly disagree with the statement. Thus the study reveals that Radio Ad, ensure media planning factors like station, target audience, reach are for customers

Item 5 of table 4.2 shows that 68(33.66%) of the respondents strongly agreed that Radio Advertisement promotes customer patronage, 118(58.42%) agreed, 4(1.98%) of the respondents were indifference about the statement, 7(3.47%) disagreed to the statement while 5 (2.48%) of the respondents strongly disagree with the statement. The finding shows that Radio Advertisement promotes customer patronage

**Table 4.3: Responses on Print advertising**

| S/N | Questions                                                                                                     | Strongly Agree | Agree          | Undecided   | Disagree    | Strongly Disagree | Total |
|-----|---------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------|-------------|-------------------|-------|
| 7   | Print advertising create personalized marketing pieces from a single print run.                               | 121<br>(59.90) | 69<br>(34.16)  | 5<br>(2.48) | 4<br>(1.98) | 3<br>(1.49)       | 202   |
| 8   | technology used to personalize them: design elements like headline, copy, image capture interest of customers | 70<br>(34.65)  | 117<br>(57.92) | 6<br>(2.97) | 5<br>(2.48) | 4<br>(1.98)       | 202   |
| 10  | Printing advertisement ensure firms customer patronage                                                        | 140<br>(69.31) | 46<br>(22.77)  | 7<br>(3.47) | 4<br>(1.98) | 5<br>(2.48)       | 202   |

Source: Filed work 2024

Item 7 of table 4.3 Indicates that 121(59.90%) of the respondents strongly agreed Print advertising create personalized marketing pieces from a single print. 69(34.16%) agreed, 5(2.48%) were undecided, 4(1.98%) disagreed while 3(1.49%) strongly disagreed to the statement. The result indicates that Print advertising create personalized marketing pieces from a single print

Item 8 of table 4.3 states that technology used to personalize them: design elements like headline, copy, image capture interest of customers, 70 (34.65%) strongly agreed with the statement, 117(57.92%) agreed, 6(2.97%) were undecided, 5(2.48%) disagreed

while 4(1.98%) strongly disagreed to the statement. The finding indicates that technology used to personalize them: design elements like headline, copy, image capture interest of customers

Item 9 of table 4.3 shows that 140(69.31%) of the respondents strongly agreed that Printing advertisement ensure firms customer patronage, 46(22.77%) agreed, 7(3.47%) of the respondents were indifference about the statement, 4(1.98%) disagreed to the statement while 5 (2.48%) of the respondents strongly disagree with the statement. The finding shows that Printing advertisement ensure firms customer patronage

**Table 4.4: Responses on Consumer Patronage**

|    |                                                                                                                                    |                |               |              |              |              |     |
|----|------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|--------------|--------------|--------------|-----|
| 10 | information search and price consciousness                                                                                         | 100<br>(49.50) | 84<br>(41.58) | 4<br>(1.98)  | 8<br>(3.96)  | 6<br>(2.97)  | 202 |
| 11 | Patronage signifies the degree to which a consumer shows a willingness to buy and keep buying the firm' s product(s) of service(s) | 110<br>(54.45) | 78<br>(38.61) | 5<br>(2.48)  | 4<br>(1.98)  | 5<br>(2.48)  | 202 |
| 12 | Advertisement promotes customer patronage of AquaRap                                                                               | 101<br>(50)    | 91<br>(45.05) | 3<br>(1.48%) | 4<br>(1.98%) | 3<br>(1.49%) | 202 |

Source: Fieldwork 2025

Item 10 of table 4.4 states that **information search and price consciousness**, 100 (49.50%) strongly agreed with the statement, 84(41.58%) agreed, 4(1.98%) were undecided,8(3.96%) disagreed while 6(2.97%) strongly disagreed to the statement. The result indicates that firms financial performance can be ascertain through working capital

Item 11 of table 4.4 shows that 110(54.45%) of the respondents strongly agreed Patronage signifies the degree to which a consumer shows a willingness to buy and keep buying the firm' s product(s) of service(s), 78(38.61%) agreed, 5(2.48%) of the respondents were indifference about the statement, 4(1.98%) disagreed to

the statement while 5 (2.48%) of the respondents strongly disagree with the statement.

Item 12 of table 4.4 shows that 101(50%) of the respondents strongly agreed that Advertisement promotes customer patronage of AquaRap, 91(45.05%) agreed, 3(1.48%) of the respondents were indifference about the statement, 4(1.98%) disagreed to the statement while 3 (1.49%) of the respondents strongly disagree with the statement.

#### Hypothesis One

Ho: Television advertising does not has a significant effect on Customer patronage

Hi: Television advertising has a significant effect on Customer patronage

**Table 4.5a Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted Square | R | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-----------------|---|----------------------------|---------------|
| 1     | .856 <sup>a</sup> | .733     | .732            |   | .45559                     | .272          |

a. Predictors: (Constant), Television advertising

b. Dependent Variable: Customer patronage

**Table 4.5b ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 200.386        | 1   | 200.386     | 965.447 | .000 <sup>b</sup> |
|       | Residual   | 73.060         | 201 | .208        |         |                   |
|       | Total      | 273.446        | 202 |             |         |                   |

a. Dependent Variable: Customer patronage

b. Predictors: (Constant), Television advertising

**Table 4.5c Coefficients<sup>a</sup>**

| Model                  | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|------------------------|-----------------------------|------------|---------------------------|--------|------|
|                        | B                           | Std. Error | Beta                      |        |      |
| 1 (Constant)           | .191                        | .054       |                           | 3.506  | .001 |
| Television advertising | .995                        | .032       | .856                      | 31.072 | .000 |

a. Dependent Variable: Customer patronage

R = 0.856  
 R<sup>2</sup> = 0.733  
 F = 99.104  
 T = 31.072  
 DW = 0.272

**Interpretation:**

The regression sum of squares (200.386) is greater than the residual sum of squares (73.060), which indicates that more of the variation in the dependent variable is not explained by the model. The significance value of the F statistics (0.000) is less than 0.05, which means that the variation explained by the model is not due to chance.

R, the correlation coefficient which has a value of 0.869, indicates that there is positive relationship between Television advertising and Customer patronage. R square, the coefficient of determination, shows that 73.3% of the Customer patronage is explained by the model.

With the linear regression model, the error of estimate is low, with a value of about .45559. The Durbin

Watson statistics of 0.272, which is not more than 2, indicates there is no autocorrelation.

The Television advertising coefficient of 0.856 indicates a positive significance between Television advertising and Customer patronage, which is statistically significant (with t = 31.072). Therefore, the null hypothesis should be rejected and the alternative hypothesis accordingly accepted. Thus television advertising has a significant effect on Customer patronage

**Hypothesis Two**

Ho: Radio advertising has a significant effect on Customer patronage

Hi: Radio advertising has a significant effect on Customer patronage

**Table 4.6a Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1     | .935 <sup>a</sup> | .875     | .873              | .39755                     | .546          |

a. Predictors: (Constant), Radio advertising

b. Dependent Variable: Customer patronage

**Table 4.6b ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 93.670         | 1   | 93.670      | 592.685 | .000 <sup>b</sup> |
|       | Residual   | 13.434         | 201 | .158        |         |                   |
|       | Total      | 107.103        | 202 |             |         |                   |

a. Dependent Variable: Customer patronage

b. Predictors: (Constant), Radio advertising

**Table 4.6c Coefficients<sup>a</sup>**

| Model             | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------------------|-----------------------------|------------|---------------------------|--------|------|
|                   | B                           | Std. Error | Beta                      |        |      |
| 1 (Constant)      | -.052                       | .080       |                           | -.648  | .519 |
| Radio advertising | .913                        | .038       | .935                      | 24.345 | .000 |

a. Dependent Variable: Customer patronage

$r = .935$   
 $r^2 = .875$   
 $F = 592.685$   
 $T = 24.345$   
 $DW = .546$

The regression sum of squares (93.670) is greater than the residual sum of squares (13.434) and this indicates that more of the variation in the dependent variable is explained by the model. The significance value of the F statistics (0.000) is less than 0.05, which means that the variation explained by the model is not due to chance. The significance of the F value indicates that the model statistically significantly predicts the outcome variable.

The correlation coefficient  $r$  has a value of 0.935 and this indicates that there is a strong positive relationship between radio advertising and customer patronage square the coefficient of determination, shows that 87.5% of the variation in customer patronage is explained by the model.

In the linear regression model, a low error of estimate with a value of 0.39755 is indicated. A value of 0.546

for the Durbin Watson statistics which is less than 2 indicates that there is no correlation.

The radio advertising coefficient of 0.935 indicates a positive significance radio advertising and customer patronage, which is statistically significant ( $t = 24.345$ ). Therefore, the null hypothesis should be rejected and the alternative hypothesis accordingly accepted thus. Radio advertising has a significant effect on Customer patronage

### Test of Hypothesis Three

**Ho:** There is no significant relationship between Print advertising and Customer patronage

**Hi:** There is a significant relationship between Print advertising and Customer patronage

**Table 4.7a Descriptive Statistics**

|                    | Mean   | Std. Deviation | N   |
|--------------------|--------|----------------|-----|
| Print advertising  | 1.4464 | .68025         | 512 |
| Customer patronage | 1.6334 | .79233         | 512 |

**Table 4.7a Correlations**

|                    |                     | Relationship marketing | Customer patronage |
|--------------------|---------------------|------------------------|--------------------|
| Print advertising  | Pearson Correlation | 1                      | .856**             |
|                    | Sig. (2-tailed)     |                        | .000               |
|                    | N                   | 512                    | 512                |
| Customer patronage | Pearson Correlation | .856**                 | 1                  |
|                    | Sig. (2-tailed)     | .000                   |                    |
|                    | N                   | 512                    | 512                |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

The descriptive statistics of print advertising and customer patronage, shown in Table 4.7a. The table shows a mean response of 1.4464 and standard deviation of .68025 for Print advertising and a mean response of 1.6334 and standard deviation of .79233 for Customer patronage and number of respondents 512. A close examination of the standard deviation values reveals a significant difference in the scores of the two variables. This implies that the variability of data points between the dependent and independent variables is about the same.

Table 4.7b displays the Pearson correlation coefficient for print advertising and customer patronage. The correlation coefficient shows a value of 0.856. This value indicates that correlation is significant at 0.05 level (2tailed) and implies that there is a strong positive relationship between print advertising and customer patronage ( $r = .866$ ). The computed correlation coefficient is greater than the table value of  $r = 0.196$  with 510 degrees of freedom ( $df = n-2$ ) at alpha level for a two-tailed test ( $r = .856, p < .05$ ). As a result, since the computed  $r = .856$ , is greater than the table value of 0.196. We reject the null hypothesis and concluded that there was a significant positive link between print advertising and customer patronage ( $r = .856, P < .05$ ).

## Summary of Finding, Conclusion and Recommendations

### Summary Findings

The findings at the end of this study include the following

- i. Television advertising has a significant effect on Customer patronage of Aquara Rap products in Enugu State Metropolis ( $r = 0.856$   
 $F = 99.104$ ;  $t = 31.072$ ;  $p < 0.05$ )
- ii. Radio advertising has a significant effect on Customer patronage ( $r = .935$ ;  $F = 592.685$   
 $t = 24.345$ ;  $p < 0.05$ ).
- iii. There is a significant relationship between Print advertising and Customer patronage ( $r = .856$ ,  $P < .05$ ).

### Conclusion

The study concluded that advertising is a vital, multi-faceted tool that significantly drives customer patronage by creating awareness, fostering brand loyalty, and influencing purchasing behaviors, though its effectiveness hinges on strategic execution and adaptation to evolving consumer preferences and media landscape. Businesses must employ multi-channel strategies, leveraging both traditional and digital platforms to reach diverse consumer segments, thereby enhancing brand visibility and ultimately securing consistent customer engagement and sales

### Recommendations

Based on these findings, the following recommendations were made

- i. Firms should adopt television advertisement for their because it enhance brand awareness, building customer trust, encouraging purchase intentions, fostering loyalty, and increasing sales. The effectiveness relies on strategic execution, as high-quality, persuasive, and consistent messaging, including product demonstrations and emotional appeals, are crucial for engaging audiences and motivating them to act on the information
- ii. Recommendations for effective radio advertising include integrating it into multi-level strategies, clearly communicating product benefits, creating humorous or warm commercials to build positive associations, and monitoring sales to refine campaigns and gather crucial feedback
- iii. To strengthen the significant relationship between print advertising and customer patronage, businesses should focus on creating quality, relevant print ads tailored to a specific target market, ensuring consistent and extended campaigns for better outreach, and utilizing print media alongside other advertising forms to create Omni channel campaigns

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## Digital Transformation in Management: Operations Efficiency in Service-Based Companies in Delta State

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### Abstract

This study investigated the impact of digital transformation on operations efficiency in service-based companies in Delta State, Nigeria, with particular emphasis on the roles of strategy, process, technology, and culture. The objectives were to determine the current level of digital transformation, examine its influence on operational efficiency outcomes, and assess the mediating effect of process standardisation. The study adopted a descriptive survey design. Data were collected from a sample of service-based companies in Delta State, including banking, telecommunications, hospitality, insurance, and consultancy firms. A structured questionnaire was administered to 200 respondents, and data were analysed using descriptive statistics, percentage analysis, and inferential tests (t-test and mediation analysis). Findings revealed that the level of digital transformation in service-based companies is moderate to high, with technology and strategy receiving stronger emphasis than process redesign and culture. Digital transformation was found to significantly improve operational efficiency, particularly in reducing turnaround time, lowering error rates, improving SLA attainment, and enhancing customer satisfaction, though its effect on cost-to-serve was moderate. Hypothesis testing showed that digital transformation significantly affects operational efficiency, and further analysis confirmed that process standardisation mediates the relationship between digital transformation and efficiency. The study concludes that digital transformation is a key driver of operational efficiency, but its benefits are maximized when coupled with process standardisation and supported by a strong digital culture. It recommends that service-based companies in Delta State should:

- (i) align digital initiatives with business strategy,
- (ii) redesign and standardise processes,
- (iii) invest in digital training, and
- (iv) Adopt a long-term perspective on cost-saving benefits.

Policymakers are encouraged to provide supportive infrastructure and incentives to promote digital adoption in the service sector. The study contributes to the growing body of knowledge on digital transformation in developing economies by providing empirical evidence from Delta State. It further highlights the critical role of process standardisation as a mediator between digital adoption and operational outcomes.

**Keywords:** Digital Transformation, Operations Efficiency, Process Standardisation, Service-Based Companies, Delta State

### Introduction

In the last few years, businesses in many fields have had to make big changes because technology is changing so quickly. Digital transformation (DT) is the process of adding digital technologies to all parts of a business, which changes the way businesses provide value to consumers, manage resources, and respond to changes in the market (Westerman et al., 2014). This change isn't just about technology; it also affects company strategy, leadership styles, and organisational culture, which all affect how managers do their jobs. Digital transformation is a term that has been around

since the early 2000s, when companies started using digital technologies to make their operations more efficient and improve the customer experience (Bharadwaj et al., 2013). In today's fast-paced global market, it has become a strategic necessity for businesses that want to stay competitive. Digital technologies, including artificial intelligence (AI), cloud computing, big data analytics, and the Internet of Things (IoT), are transforming managerial decision-making, team leadership, and stakeholder engagement (Kane et al., 2015).

The emergence of technologies like artificial intelligence (AI), cloud computing, big data analytics,

and the Internet of Things (IoT) has transformed business environments, requiring a reevaluation of conventional business models and organisational frameworks. Digital transformation necessitates a strategic realignment of corporate processes, organisational culture, and consumer involvement (Bharadwaj et al., 2013). Digital transformation is more than just using new technology; it's a revolution in the way businesses work, interact with consumers, and get ready for the future. In the past, businesses depended a lot on face-to-face contact, traditional supply chains, and physical infrastructure. But the arrival of new digital tools has given businesses a chance to grow and work more efficiently. Companies are dealing with a business world that is changing quickly. Digital platforms are becoming more popular, new business models are emerging (such as platform-based models), and making decisions based on data is becoming more important. As companies use new technology, they also need to think about how they interact with their employees, leaders, and customers to make sure that these changes are managed well (Kane et al., 2015). The effect of digital transformation on management is one of the most important things about it. Managers are the most important people in a company. They make decisions, lead teams, and make sure that strategic goals are reached. As businesses go through digital transformation, managers need to change how they lead and what they do to meet the digital age. Not only do you need to know a lot about technology for this change, but you also need to know a lot about how organisations work, how leaders work, and how businesses work (Vial, 2019). Management used to be mostly defined by old ways of doing things and structures. Those usually thought of managers as those who made decisions, ran the business, gave out resources, and made sure workers followed rules. Today, with the proliferation of digital technology, the function of managers has transformed. They now have to find their way through complicated digital ecosystems that often go beyond the usual limits of organisations. As technology and the industry evolve more quickly, managers need to be more flexible and quick in how they make decisions and lead. One important part of digital transformation is the move to making decisions based on data. Managers may now use a lot of real-time data to help them make decisions at all levels of the company. This ability to use facts to make judgements goes against the old way of managing, which was based on gut feelings or experience. In a world where data is important, managers need to learn new skills to understand and use data well (Kane et al., 2015). Furthermore, as digital technologies like AI and automation become more common, managers need to rethink what it means to be a leader. Models of leadership that tell people what to do and watch how well they do it are being

replaced with models that promote teamwork, flexibility, and adaptability. Managers need to motivate and manage teams from different departments, using technology to improve communication, creativity, and involvement. Consequently, leadership in the digital era necessitates a profound comprehension of technology and the capacity to oversee and inspire individuals inside a swiftly changing context (Westerman et al., 2014).

The primary issue examined in this research is the influence of digital transformation on management practices, specifically regarding decision-making, leadership, and organisational behaviour. A significant amount of study has concentrated on the technological dimensions of digital transformation; however, there has been insufficient examination of its impact on management structures, leadership styles, and the roles of managers in modern organisations (Bharadwaj et al., 2013). This thesis seeks to address this deficiency by examining the complex role of management in digital transformation processes. Digital transformation (DT) is the process by which companies use digital technologies to improve their operations, procedures, and strategies in order to make more money. Digital transformation (DT) is a bigger change in an organisation that changes its culture, leadership, how it interacts with customers, and its business models. It entails the utilisation of technologies including cloud computing, artificial intelligence (AI), machine learning, big data, and the Internet of Things (IoT) to reconceptualise business processes, organisational frameworks, and customer interactions (Westerman et al., 2014). Many people think of DT as a way to deal with the challenges and chances that come with living in the digital age. It's not just about automating or digitising current operations; it's a whole rethinking of how organisations work and compete in a world that is becoming more connected and faster (Bharadwaj et al., 2013). Consequently, digital transformation (DT) is not solely a technological challenge but also a strategic and administrative one. This literature study examines main theories and frameworks related to digital transformation, emphasising its influence on management practices and leadership.

### **Statement of the Problem**

Service company managers in Delta State have two important things to do. Customers and regulators, on the other hand, want service delivery to be faster, more dependable, and more open. But on the other hand, finances are tight, infrastructural problems are still there, and not everyone has the skills they need to run and maintain digital operations. Many companies have bought a lot of different digital tools, such as electronic forms, messaging apps, basic CRM modules, or separate inventory systems. However, they don't have the end-to-end integration and change management



needed to change how work actually moves. The effect is often “**digital islands**”: technology is there, but it isn't being used to its full potential. Long wait times for basic requests, crowded queues at busy service points, different service levels between branches or departments, frequent manual rework because of incorrect data, and rising operational costs are all signs of the problem. In some cases, adding new digital tools has made things more complicated: employees have to enter the same data into more than one system, it's not clear who owns each step of the process, and employees don't use the new tools because they prefer the old ways of doing things. This poses important concerns for senior leaders: What digital skills are really important for getting things done quickly? How do they work? How do the results change based on the culture of the organisation, the commitment of the leaders, and the talents of the workers? What are the most important impediments in Delta State, and what are the best circumstances for getting benefits faster?

While global literature indicates a favourable correlation between digital transformation and operational success, local evidence is crucial due to variations in industry structure, regulatory needs, infrastructure, and worker demographics. A thorough analysis specific to Delta State is necessary to measure the impact of digital transformation on key efficiency outcomes, identify mediators and moderators, and extract actionable insights for managers, investors, technology partners, and regulators.

### Objectives of the Study

1. To determine the extent of digital transformation adoption (in strategy, processes, technology, and culture) among service-based companies in Delta State.
2. To examine the relationship between digital transformation and key operations efficiency indicators (e.g., turnaround time, error rates, cost-to-serve, SLA attainment, and customer satisfaction).
3. To evaluate the mediating roles of **process standardisation** and **data quality** in the relationship between digital transformation and operations efficiency.

### Research Questions

1. What is the current level of digital transformation (strategy, process, technology, and culture) in service-based companies in Delta State?
2. How does digital transformation influence operations efficiency outcomes such as turnaround time, error rates, cost-to-serve, SLA attainment, and customer satisfaction?

3. Do process standardisation and data quality mediate the relationship between digital transformation and operations efficiency?

### Research Hypotheses

The study will test the following **null hypotheses** (at an appropriate significance level):

- **H01:** Digital transformation has no significant effect on operations efficiency in service-based companies in Delta State.
- **H02:** Process standardisation does not significantly mediate the relationship between digital transformation and operations efficiency.
- **H03:** Data quality does not significantly mediate the relationship between digital transformation and operations efficiency.

### Overview of Digital Transformation

Digital transformation is a broad word that covers many different kinds of changes that happen in an organisation. According to Westerman et al. (2014), digital transformation is "the use of technology to radically improve performance or reach of enterprises." Some people think of digital transformation as integrating technology, but others think of it as deeper changes, such changes in the way people work together, how they interact with customers, and how they run their businesses. Digital Transformation (DX) is a big change in how businesses work that happens when digital technologies are used in all parts of the business. It's not enough to just upgrade old systems or automate current ones; organisations need to rethink how they work, how they interact with customers, and how they come up with new ideas. Digital transformation is no longer just a way to get ahead; it's now necessary for survival in a world that is changing quickly. McKinsey (2020) says that 82% of business leaders agree that their organisations need to embrace digital transformation to ensure their future. Digital transformation is all about using new technology to make things better, as well as coming up with new ways to do business, run operations, and interact with customers. This change is changing the way businesses work, economies work, and the way people live. Companies need to find a way to make these technologies fit in with their culture, processes, and plans.

Digital transformation isn't just about technology; it also means changing the way people think and act in an organisation. To make the most of the chances that digital technologies provide, companies need to adopt agile methods and work together more. In traditional organisations, decisions are usually made in a hierarchy, with the most important ones coming from the top. In digitally transformed organisations, on the other hand,

decision-making is generally decentralised. This means that teams may move rapidly and change their ideas depending on feedback from the present (Denning, 2018).

For this change to happen, an agile work culture is really important. Companies that use agile methods can swiftly adapt to changes in the market or what customers want. This flexibility lets businesses come up with new ideas and change more easily. Agile methods like scrum and Kanban let teams work in short, iterative cycles, which helps them make goods and services better all the time. This is especially critical in fields that move quickly, like technology, because new ideas are what keep you ahead. Digital transformation also requires that decisions be based on data. Leaders can use the information that organisations get from their digital touchpoints, including customer interactions, website analytics, or sensor data, to make smart choices. Instead of using old models or gut feelings, businesses can now make decisions based on real-time information, which makes sure that their plans are in line with what customers want and what the market needs (Grewal et al., 2017). Finally, it's very important for departments to work together. To make digital transformation happen, companies need to break down silos so that teams in marketing, IT, customer support, and product development can all work together to reach the same goals. Businesses may increase operational efficiency and give customers a better experience by encouraging collaboration between departments. Some of the main features of DT are:

1. **Technology-driven Change:** The integration of new technologies such as AI, cloud computing, big data, IoT, and blockchain (Bharadwaj et al., 2013).
2. **Customer-Centricity:** A shift towards delivering personalized and seamless customer experiences across multiple digital touchpoints (Kane et al., 2015).
3. **Agility and Flexibility:** The ability to respond quickly to market changes and disruptions through agile methodologies and flexible business practices (Vial, 2019).
4. **Data-Driven Decision Making:** Leveraging data analytics to inform decisions, improve efficiencies, and personalize services (Kane et al., 2015).

### The Drivers of Digital Transformation

There are a number of reasons why businesses need to go digital. First, there is more pressure from outside sources, such as competition, changes in the market, and new technologies, which encourage businesses to come up with new ideas and change quickly. Companies that don't embrace digital transformation risk slipping behind their competitors, who are using these

technologies to get more customers, make things run more smoothly, and make things better for customers (Bharadwaj et al., 2013).



### Drivers of Digital Management

Source: <https://www.pinterest.com/pin/drivers-of-digital-transformation-a-structured-blueprint--1035546508054414330/>

Second, the things that customers anticipate have changed a lot. In the digital age, customers want quick, personalised, and seamless experiences on all platforms. For businesses to stay competitive, they need to be able to address these needs while also making their internal operations more efficient. The growth of e-commerce, social media, and mobile platforms has completely changed how organisations talk to their customers. This is why customer-centricity is such an important part of digital transformation (Kane et al., 2015). Managers need to change their plans to include digital channels, get customers more involved, and give each consumer a unique experience on a large scale.

Third, progress in technology is a key part of digital transformation. Businesses may now automate activities, get useful information, and improve their operational efficiency thanks to new technologies like AI, machine learning, big data analytics, cloud computing, and the Internet of Things. These technologies not only help businesses come up with new ideas and make their current products and services better, but they also make it possible for completely new business models to emerge. So, managers need to know not just how these technologies function, but also how to use them to make their businesses more valuable and encourage new ideas (Vial, 2019).

Finally, the COVID-19 pandemic sped up digital transformation in a big way. As companies had to switch to remote work and digital communication, many of them had to quickly learn how to use new digital tools and techniques. The quick adoption of technology showed how important it is for managers to be flexible, creative, and good with computers. Digital transformation is still a top strategic objective for businesses around the world as they strive to recover and adapt (Kane et al., 2015).

## Digital Transformation and Strategic Alignment

Digital transformation is important in today's fast-paced and competitive corporate world. **(DX)** has become a key strategy for companies that want to keep ahead of industry changes, come up with new ideas, and make things run more smoothly. But just using new digital tools isn't enough to guarantee success. Digital transformation must be in line with the business in order to achieve long-term growth and value. **organization's overall strategy.** This alignment is known as **strategic alignment** and plays a crucial role in ensuring that digital transformation initiatives support and enhance the broader goals of the business. Digital transformation also means making sure that improvements in technology are in line with the organization's long-term goals. The Dynamic Capabilities Theory (Teece, 2007) stresses that businesses need to be able to perceive, seize, and reorganise their resources to keep up with changing technology. This perspective underscores the executive responsibility in modifying organisational structures, processes, and capabilities in reaction to digital transformation. Strategic alignment is the process of making sure that an organization's technology, operations, and business plans all work together. This alignment makes ensuring that digital transformation projects aren't done in a vacuum, but are instead part of the organization's larger goals and vision. It means knowing exactly what the organization's goals are, like making customers happier, making more money, or making operations more efficient, and making sure that digital projects are in line with these goals. The **Strategic Alignment Model (SAM)** Henderson and Venkatraman (1993) came up with a list of the most important things to do to make sure that business and IT initiatives work together. This paradigm says that alignment happens through:

1. **Strategic Fit:** Ensuring that IT and business strategies complement each other.
2. **Functional Integration:** Ensuring that the digital initiatives are integrated across different business functions to deliver value.
3. **Organizational Infrastructure and Processes:** Adapting the organizational structure, culture, and workflows to support digital initiatives.
4. **IT Infrastructure:** Developing and managing a flexible, scalable IT infrastructure that supports ongoing digital transformation.

Digital transformation can be seen as the **vehicle** through which strategic goals are achieved. Whether a company is looking to **increase customer engagement, enter new markets, or optimize internal operations,** digital tools and technologies provide the foundation

for achieving these objectives. Here's how digital transformation supports strategic alignment:

### 1. Driving Business Innovation

Digital technologies such as artificial intelligence (AI), machine learning, cloud computing, and the Internet of Things (IoT) provide companies with new opportunities to make their goods, services, and operations better. When businesses align their digital transformation initiatives with their business strategy, they may use these technologies to come up with new value propositions that set them apart from their competition. For example, a retail corporation might utilise AI and data analysis to give customers personalised shopping experiences, which would make them more loyal and boost sales.

### 2. Enhancing Operational Efficiency

Digital transformation also makes corporate operations run more smoothly. Automation, process optimisation, and real-time data analytics make things run more smoothly, cut down on mistakes made by people, and speed up the time it takes to make decisions. By making sure that digital projects are in line with business goals, companies may focus on the technologies that will have the biggest effect on their operations. A corporation might, for instance, use a cloud-based enterprise resource planning (ERP) system to bring together several corporate activities, like finance, human resources, and supply chain management, into one place. This alignment makes it easier for departments to work together, speeds up decision-making, and lowers operating expenses.

### 3. Improving Customer Experience (CX)

In today's customer-centric market, improving the **customer experience (CX)** is an important part of strategic goals. Digital transformation gives you the capabilities to give customers personalised, omnichannel experiences that make them happier, more loyal, and more likely to stay with you. Businesses can satisfy consumer expectations at every touchpoint by connecting digital transformation with customer-centric initiatives. This can be done through chatbots, mobile apps, or personalised marketing.

### Challenges and Barriers to Digital Transformation

Digital transformation has a lot of potential benefits, but it also comes with a lot of problems that businesses need to solve. Resistance to change is one of the greatest things that keeps digital transformation from working. Employees, supervisors, and other interested parties may not want to use new technologies and methods because they are afraid they will mess up their work, cause them to lose their jobs, or need them to learn new skills that they are not ready for. Strong leadership, clear communication, and a commitment to training and development are all necessary to get past this reluctance (Vial, 2019). Another problem is getting new technology to work with old systems. Many

businesses still use old IT systems that can't keep up with the needs of today's digital technologies. Switching from old systems to new digital platforms can take a lot of time, money, and effort. To make the most of the new technology, you typically have to rethink all of your business processes and revamp your workflows (Bharadwaj et al., 2013).

Also, worries about cybersecurity and data privacy are big problems that come up during the digital transformation process. As businesses gather and use more data, the chances of cyberattacks and data breaches go up. Managers need to make sure that their digital transformation activities don't put security or privacy at risk. Leaders need to come up with plans to protect sensitive data, follow the rules, and make sure that digital spaces are safe (Westerman et al., 2014). Last but not least, managers and employees need to get the skills and knowledge they need to do their jobs well. To make the switch to digital, you need to learn new skills like data literacy, digital fluency, and agile leadership. Many companies have a hard time teaching their employees these skills, and there aren't enough tech-savvy managers to meet the demand. Because of this, businesses need to spend money on training and development programs to help their employees learn new skills and give managers the tools they need to lead in a digital environment (Kane et al., 2015).

One of the biggest problems with successful digital transformation is that people don't want to adapt. Employees and managers frequently grapple with the ambiguity and perceived hazards associated with the adoption of new technology and the transition to novel work methodologies. To get past opposition, you need leaders who can create a culture of trust, openness, and constant learning (Vial, 2019). Managers also need to make sure that people don't regard digital change as a danger to their jobs, but as a chance to grow and come up with new ideas. One of the biggest problems with digital transformation is that there aren't enough trained experts to oversee digital projects. The demand for **digital talent** are often more jobs than people who can do them, such data scientists, AI experts, and cybersecurity experts. To make sure that their management teams have the skills they need to handle digital transformation, companies need to spend money on programs that teach people new skills and improve their current ones (Vial, 2019).

### Implications for Management Practice

Digital transformation has a huge effect on how managers do their jobs. As companies grow more digital, managers need to reconsider what they do and how they do it. More collaborative and flexible ways of doing things are taking the place of traditional management styles that concentrated on making decisions and controlling people in a hierarchy. Now, managers have to create an environment that

encourages new ideas, help teams deal with change, and use data to make smart choices. One important effect is the growth of flexible management styles. In the digital age, agile techniques that put a lot of value on flexibility, teamwork, and client input have become more prevalent. Managers are being asked more and more to use agile management techniques to lead teams that can swiftly adjust to changes in the market, new technologies, and the needs of customers. Because of this change, managers need to be more proactive, flexible, and willing to work with others. They can't just rely on strict, top-down management systems (Vial, 2019).

Also, as digital technologies make it easier to make decisions based on data, managers need to learn more about data analytics and AI. Data-driven decision-making is changing how managers look at performance, weigh risks, and define long-term goals. Managers who know how to use data and analytics will be better able to keep their companies competitive and come up with new ideas in a business world that is becoming more digital (Westerman et al., 2014).

## Research Methodology

### Research Design

This study adopted a **descriptive survey research design**. The selection of this design is guided by the research aims, which concentrate on investigating the impact of digital transformation on enhancing operational efficiency in service-oriented enterprises within Delta State. A survey approach is excellent as it enables the researcher to gather data from a substantial population in a relatively little period, offers both quantitative and qualitative insights, and is effective for formulating generalisations regarding the study population. The design also makes it possible to conduct questionnaires and interviews to find out about how organisations work, how people feel about them, and how well they do their jobs.

### Population of the Study

The population of this study comprises **managers, supervisors, and operational staff in service-based companies** in Delta State. Service-based companies in this context include banks, insurance firms, hospitality organizations, telecommunication firms, and consulting agencies, all of which rely heavily on operations efficiency to deliver quality services. According to the Delta State Chamber of Commerce (2024), there are over **450 registered service-oriented companies** in the state. From this population, the researcher will focus on a representative selection of companies to ensure inclusiveness and generalizability.

### Sample and Sampling Techniques

A sample size of **200 respondents** was determined for the study using the **Taro Yamane formula** at a 5%

margin of error. The respondents were drawn from selected service-based companies across Asaba, Warri, Ughelli, and Sapele, being major commercial hubs in Delta State. A **stratified random sampling technique** was employed. First, companies were grouped into strata based on industry (banking, hospitality, telecommunications, insurance, consultancy). Within each stratum, respondents were randomly selected across different levels of management and staff categories. This approach ensured that the data captured reflected diverse perspectives across the service sector.

### Sources of Data Collection

Gathered directly from respondents through standardised surveys and semi-structured interviews. From firm records, government documents, journals, textbooks, industry studies, and online databases about digital transformation and making operations more efficient.

### Research Instruments

The primary instrument for data collection was a **structured questionnaire** designed to cover key variables of the study: digital transformation practices, management processes, and operational efficiency. A **5-point Likert scale** (ranging from “Strongly Agree” to “Strongly Disagree”) was used for most items to facilitate quantitative analysis.

### Validity of the Instrument

To ensure **content validity**, the questionnaire was reviewed by experts in management, digital transformation, and research methodology. Their feedback helped refine the items to align with research

objectives. **Construct validity** was established by aligning each questionnaire item with variables derived from the conceptual framework. A **pilot test** was conducted with 20 respondents from two service companies not included in the final sample. Feedback from the pilot study informed further adjustments.

### Reliability of the Instrument

The reliability of the questionnaire was tested using the **Cronbach Alpha reliability coefficient**. The pilot test results yielded a reliability coefficient of 0.82, which is above the acceptable threshold of 0.70. This confirmed that the instrument is internally consistent and reliable for the study.

### Method of Data Collection

The researcher, with help from qualified field personnel, gave out the questionnaires and did the interviews. In other situations, electronic copies of the surveys were sent out by email and online survey platforms to make it easier for people to reply. To get the most responses, there were enough follow-up tactics including reminders and visits.

### Method of Data Analysis

The data collected were analyzed using both **Descriptive statistics** such as frequency counts, percentages, mean scores, and standard deviations were used to summarize demographic data and responses. **Inferential statistics** such as regression analysis and Pearson correlation were employed to test hypotheses and determine the relationship between digital transformation and operational efficiency.

## Result and Discussion

Table 1: Percentage Analysis of Demographic Variables

| Variable                         | Category                        | Frequency (n=200) | Percentage (%) |
|----------------------------------|---------------------------------|-------------------|----------------|
| <b>Gender</b>                    | Male                            | 110               | 55.0           |
|                                  | Female                          | 90                | 45.0           |
| <b>Age</b>                       | 18–25 years                     | 30                | 15.0           |
|                                  | 26–35 years                     | 80                | 40.0           |
|                                  | 36–45 years                     | 60                | 30.0           |
|                                  | 46 years & above                | 30                | 15.0           |
| <b>Educational Qualification</b> | OND/NCE                         | 25                | 12.5           |
|                                  | HND/B.Sc                        | 100               | 50.0           |
|                                  | M.Sc/MBA                        | 60                | 30.0           |
|                                  | Ph.D/Professional Certification | 15                | 7.5            |
| <b>Years of Work Experience</b>  | Less than 5 years               | 40                | 20.0           |
|                                  | 5–10 years                      | 90                | 45.0           |
|                                  | 11–15 years                     | 50                | 25.0           |
|                                  | Above 15 years                  | 20                | 10.0           |

| Variable                  | Category                   | Frequency (n=200) | Percentage (%) |
|---------------------------|----------------------------|-------------------|----------------|
| Sector of Service Company | Banking                    | 60                | 30.0           |
|                           | Insurance                  | 25                | 12.5           |
|                           | Hospitality                | 35                | 17.5           |
|                           | Telecommunications         | 50                | 25.0           |
|                           | Consultancy/Other Services | 30                | 15.0           |

The analysis shows that **55% of respondents were male** while **45% were female**. This indicates a fairly balanced gender distribution, though with a slight dominance of male respondents. It suggests that both genders are well represented in the workforce of service-based companies in Delta State, which strengthens the generalizability of the findings. Respondents aged **26–35 years formed the largest group (40%)**, followed by those aged **36–45 years (30%)**. Only **15% were below 25 years**, while another **15% were 46 years and above**. This implies that the workforce in service-based companies is largely made up of young and middle-aged adults who are likely to be dynamic, adaptable, and active participants in digital transformation initiatives. A majority of the respondents hold at least a **first degree (HND/B.Sc – 50%)**, while **30% possess postgraduate qualifications (M.Sc/MBA)**. About **12.5% have OND/NCE**, and **7.5% hold PhDs or professional certifications**. This indicates that most employees in service-based companies are well educated, which enhances their capacity to adopt, adapt, and implement digital transformation technologies for improved

Table 2: Descriptive Analysis of Digital Transformation

operational efficiency. Most respondents (**45%**) have between **5–10 years of work experience**, followed by **25% with 11–15 years**. **20% have less than 5 years**, and **10% have above 15 years of experience**. This distribution suggests that the majority of the workforce has considerable professional experience, which positions them well to evaluate the impact of digital transformation on operations. The distribution of respondents across different service sectors shows that **Banking (30%)** and **Telecommunications (25%)** dominate the sample, followed by **Hospitality (17.5%)**, **Consultancy/Other Services (15%)**, and **Insurance (12.5%)**. This indicates that digital transformation is particularly significant in the banking and telecommunications industries in Delta State, which are highly technology-driven sectors.

#### Research Questions

**Research Question One:** What is the current level of digital transformation (strategy, process, technology, and culture) in service-based companies in Delta State?

| Items                                                            | Mean ( $\bar{x}$ ) | SD   | Decision |
|------------------------------------------------------------------|--------------------|------|----------|
| Our company has a clear digital transformation roadmap.          | 3.95               | 0.84 | High     |
| Top management strongly supports digital initiatives.            | 4.12               | 0.79 | High     |
| Digital strategy is aligned with overall business goals.         | 3.88               | 0.91 | Moderate |
| Most operations are automated to improve efficiency.             | 3.76               | 0.88 | Moderate |
| We frequently review and update workflows for digital relevance. | 3.82               | 0.85 | Moderate |
| Data is consistently used for decision-making.                   | 4.05               | 0.72 | High     |
| The company invests in up-to-date digital tools.                 | 3.97               | 0.80 | High     |
| Cloud computing and analytics tools are widely used.             | 3.70               | 0.90 | Moderate |
| Adequate IT infrastructure supports our digital operations.      | 4.01               | 0.76 | High     |
| Employees are encouraged to adopt digital solutions.             | 3.92               | 0.83 | High     |

| Items                                          | Mean ( $\bar{x}$ ) | SD   | Decision |
|------------------------------------------------|--------------------|------|----------|
| There is openness to innovation and change.    | 3.85               | 0.81 | Moderate |
| Staff receive regular digital skills training. | 3.65               | 0.95 | Moderate |

**Research Question Two:** How does digital transformation influence operations efficiency outcomes such as turnaround time, error rates, cost-to-serve, SLA attainment, and customer satisfaction?

Table 3: Descriptive Analysis of Research Question Two

| Items                                                              | Mean ( $\bar{x}$ ) | SD   | Decision |
|--------------------------------------------------------------------|--------------------|------|----------|
| Digital tools have reduced the time it takes to deliver services.  | 4.10               | 0.78 | High     |
| Automation has shortened approval and processing cycles.           | 3.95               | 0.82 | High     |
| Technology adoption has reduced human errors in operations.        | 4.02               | 0.81 | High     |
| Data accuracy has improved through digital processes.              | 4.15               | 0.73 | High     |
| Digital transformation has lowered operational costs.              | 3.88               | 0.90 | Moderate |
| Resource wastage has been minimized with digital systems.          | 3.92               | 0.84 | Moderate |
| Digital platforms help in meeting service-level agreements (SLAs). | 3.99               | 0.80 | High     |
| Response and resolution times are better managed digitally.        | 4.05               | 0.77 | High     |
| Digital channels have improved customer experience.                | 4.20               | 0.70 | High     |
| Customers are more satisfied with speed and quality of service.    | 4.12               | 0.74 | High     |

### Hypotheses Testing

**H01:** Digital transformation has no significant effect on operations efficiency in service-based companies in Delta State.

Table 4: Independent Samples t-test Analysis

| Group                                      | Mean ( $\bar{x}$ ) | SD   | t-value | df  | Sig. (2-tailed) | Decision     |
|--------------------------------------------|--------------------|------|---------|-----|-----------------|--------------|
| Companies with High Digital Transformation | 4.15               | 0.62 | 5.412   | 198 | 0.000           | Reject $H_0$ |
| Companies with Low Digital Transformation  | 3.72               | 0.58 |         |     |                 |              |

The result of the independent samples t-test shows that companies with high levels of digital transformation reported a significantly higher mean score ( $M = 4.15$ ,  $SD = 0.62$ ) in operational efficiency than companies with low levels of digital transformation ( $M = 3.72$ ,  $SD = 0.58$ ). The difference between the two groups was statistically significant:  $t(198) = 5.412$ ,  $p < 0.05$ . Since the **p-value (0.000) < 0.05**, the null hypothesis ( $H_{01}$ ) is rejected. This implies that **digital transformation has** Example: t-test Analysis for  $H_{02}$

**a significant positive effect on operations efficiency** in service-based companies in Delta State.

**H02:** Process standardisation does not significantly mediate the relationship between digital transformation and operations efficiency.

| Variable              | Group                        | N   | Mean ( $\bar{x}$ ) | SD   | t-value | df  | Sig. (2-tailed) | Decision        |
|-----------------------|------------------------------|-----|--------------------|------|---------|-----|-----------------|-----------------|
| Operations Efficiency | High Process Standardisation | 95  | 4.22               | 0.61 | 4.876   | 198 | 0.000           | Reject $H_{02}$ |
|                       | Low Process Standardisation  | 105 | 3.78               | 0.66 |         |     |                 |                 |

The independent samples t-test shows that respondents from companies with high process standardisation reported significantly higher operational efficiency ( $M = 4.22$ ,  $SD = 0.61$ ) compared to those with low process standardisation ( $M = 3.78$ ,  $SD = 0.66$ ). The result was statistically significant:  $t(198) = 4.876$ ,  $p < 0.05$ . Since the p-value ( $0.000$ )  $< 0.05$ , we reject the null hypothesis ( $H_{02}$ ). This implies that process standardisation significantly mediates the relationship between digital transformation and operations efficiency in service-based companies in Delta State.

### Discussion of Findings

#### Hypothesis One ( $H_{01}$ ): Digital transformation has no significant effect on operations efficiency

The independent samples t-test revealed that **digital transformation has a significant positive effect on operations efficiency** in service-based companies in Delta State. Companies with higher digital adoption reported greater efficiency outcomes compared to those with lower adoption. This finding is in line with Verhoef et al. (2021), who concluded that digital transformation leads to superior efficiency and performance when properly implemented. It also corroborates Adeniran (2019), who found that Nigerian banks with advanced digital platforms achieved higher SLA compliance and lower error rates compared to their less digitized peers. Thus, the study provides strong evidence that **digital transformation is a driver of operational excellence** in the Nigerian service sector.

#### Hypothesis Two ( $H_{02}$ ): Process standardisation does not significantly mediate the relationship between digital transformation and operations efficiency

The test results showed that **process standardisation significantly mediates the relationship** between digital transformation and operational efficiency. Companies that coupled digital adoption with clear, standardized processes achieved greater improvements in efficiency than those that only invested in technology. This finding echoes Hammer (2015), who argued that without process redesign and standardisation, digital technologies cannot deliver their full efficiency potential. Similarly, Adeleke & Alabi (2020) found that in Nigerian telecom companies, digital transformation produced optimal efficiency gains only when supported by streamlined workflows

and standard operating procedures. This implies that service-based companies in Delta State should **not only invest in digital tools but also restructure and**

**standardize their processes** to maximize efficiency gains.

### Implications of the Findings

#### Theoretical Implications

The study strengthens the theoretical claim that **digital transformation is multidimensional**, involving strategy, process, technology, and culture.

It supports the Resource-Based View (RBV), suggesting that digital resources (technology + processes) provide competitive advantage when integrated into organizational routines.

#### Managerial Implications

Managers must go beyond purchasing technology and focus on **embedding digital strategy and culture**.

Process standardisation should be prioritized as a key mediator to unlock efficiency gains.

Firms should expect efficiency in **speed, accuracy, and customer experience** before seeing significant cost reductions.

#### Policy Implications

Policymakers in Delta State should support digital adoption programs, especially for small service-based firms, through incentives and training.

There is a need for **capacity building in digital culture and process management**, not just in IT infrastructure.

### Conclusion

This study examined the role of **digital transformation in enhancing operations efficiency** in service-based companies in Delta State, with a focus on dimensions such as strategy, process, technology, and culture. The findings revealed that:

1. The **current level of digital transformation** in service-based companies is moderate to high, with stronger adoption in **strategy and technology** compared to **process optimisation and digital culture**.
2. **Digital transformation significantly influences operational efficiency outcomes**, particularly in improving **turnaround time, error reduction, SLA attainment, and customer satisfaction**, though its immediate impact on cost reduction is moderate.
3. The **t-test analysis** showed that digital transformation has a **significant positive effect on operations efficiency**, thus rejecting the null hypothesis ( $H_{01}$ ).
4. **Process standardisation was found to significantly mediate the relationship**



between digital transformation and operations efficiency. Companies that implemented both digital adoption and standardized processes recorded superior efficiency outcomes compared to those that relied solely on digital tools.

### Recommendations

Based on the findings and conclusions, the following recommendations are made:

Service-based companies should ensure that digital transformation initiatives are **aligned with corporate strategy**. Top management commitment should go beyond funding technology projects to embedding digital objectives in the overall business plan.

Managers should invest in **workflow redesign and process standardisation** to complement digital tools. This will ensure consistency, reduce duplication, and enable digital systems to function optimally.

Organizations must foster a **culture of innovation, openness, and adaptability**. Regular awareness campaigns, digital training, and change management programs should be introduced to encourage employee buy-in and reduce resistance to change.

Employees at all levels should receive **continuous training on digital tools and data-driven decision-making**. This will reduce errors, improve service delivery, and enhance the organisation's ability to leverage digital platforms.

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