

DELSU Journal of Management Sciences (DELJOMS)

DELJOMS 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 As a journal, we, therefore, advice researchers whose articles could not be published for some structural or procedural defects to revise their work for re-submission because DELJOMS is willing to reassess for future publication were applicable.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 M. E. Tarurhor
Editor-in-Chief

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The Editorial Board of Delsu Journal of Management Sciences (DELJOMS) welcomes scholarly well-researched articles for consideration on any aspect of Management and Social Sciences and allied disciplines. DELJOMS which is a publication of Faculty of Management Sciences (FMS), Delta State University, Abraka, publishes original and cutting edge articles with relevant and significant contributions to the Management, Social Sciences' and allied disciplines.

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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Second Page: The page should repeat the title of the articles but should not in any way disclose the names and addresses of the author. It should include the abstract which should not exceed two hundred and fifty words (typed single –spacing in 12 Times New Roman font) and a list of not more than five keywords. The 12 point font size requirement applies to all the headings, subheadings and all other contents.

Main Body: Articles are normally not expected to exceed 20 pages of A4 paper, typewritten in double –line spacing. Sub-headings sections should not be numbered. However, tables, figures, maps and other illustrations should each be numbered and given a title which must be centred. All sub-headings should be justified.

Cited works/References: The prescribed references style is the American Psychological Association (APA) style.

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Job Design Techniques as Correlates of Business Education Lecturers' Job Satisfaction in Public Tertiary Educational Institutions in Edo and Delta States, Nigeria

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Abstract

The study investigated job design techniques as correlate of business education lecturers' job satisfaction in public educational tertiary institutions in Edo and delta States - Nigeria. The study examined job design techniques of job simplification and job rotation. Similarly, The moderating influence of gender was examined. Three research questions were addressed, while one hypothesis was tested at alpha level of 0.05. Correlational survey research design was employed. 148 business education lecturers were used as study population as well as sample. The study used two sets of instruments and validated. The job design techniques scale reported Cronbach's alpha values of 0.77 for Job Simplification and 0.72 for Job Rotation. 0.73 was the overall scale for both questionnaires. The study used Pearson Product Moment Correlation Coefficient and Fisher-Z statistics. Findings revealed a moderately positive association between job simplification, rotation of job and business education lecturers' job satisfaction and there was no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers. In conclusion, job simplification and job rotation provides a moderately positive job satisfaction to business education lecturers. It was recommended that Heads of Departments should vary the use of job design techniques in order to achieve the best result that will yield business education lecturers the maximum satisfaction in performing their jobs.

KEY WORDS: *Job Design; Job Satisfaction; Business Education lecturers; Public Tertiary Educational Institutions.*

Introduction

Job satisfaction is a basic requirement in every job in order to promote or influence functional employee behaviours in organizations. According to Obiebi and Irikefe (2018), job satisfaction is considered as the collection of feelings and beliefs that people have about their current job. It is also referred to as the feeling or attitude of

accomplishment that an employee generally has about work. This feeling or attitude about one's job could be positive or favourable and it could also be negative or unfavourable. Job satisfaction may be a pointer of how workers' feelings influence their works and an indicator of work comportment in relationship to workers' absenteeism rate and job pull out. However,

organizations see job satisfaction of workers as a work force that is stimulated and attached to high performance. The level of job satisfaction of any employee may vary depending of the circumstances surrounding them.

The two-factor theory of Herzberg of 1959 stated that the indices of job satisfaction are the work nature, work environment, salary, career advancement, supervision, promotion, remuneration, fairness and working conditions among others. Accordingly, these indicators are extrinsic (hygiene) and intrinsic (motivational) factors. The extrinsic motivators represent the job context which includes status, job security, salary and fringe benefits. Therefore, the incapability of employers to provide these basic necessities could lead to job dissatisfaction and reduce job momentum among workers. Intrinsic factors represent the job content such as work challenges, acknowledgments, association, achievement, responsibility, advancement and growth. It follows that these factors provide additional motivation when available; hence they can increase job satisfaction.

Thus, Robbins and Judge (2017) asserted that if the extrinsic factors are available, the intrinsic factors known as the motivators should be emphasized mostly in order to increase the level of employees' job satisfaction. For example, for employees to derive job satisfaction in an establishment, they will want to see things they have been able to achieve in the organization and how these contributions are recognized by the employers. The work they do in the organization will also ascertain the extent of their job satisfaction. Again, the amount of independence or freedom possessed by employees may determine the level of responsibility they take for the work and this may also determine their level of job satisfaction. Opportunities the employees, including business education lecturers obtain on the job content that require them to grow or make advancement on the work itself may determine the extent of job satisfaction business education lecturers will derive on the job.

In general, business lecturers are those lecturers that teach business education courses in tertiary institutions. They perform various duties such as teaching various courses, carrying out research work, supervising students' projects, students on teaching practice and those on industrial training. They also evaluate students'

performance through assignments, tests, practicals, examinations and perform administrative duties such as course advising, timetable/examination officers, chairmen/members of committees/boards, coordinators and Heads of Departments, among others. If these business education lecturers perceive that the various duties they perform in the establishments have no intrinsic value to them, it may lead to job dissatisfaction. On the contrary, if their jobs have intrinsic value, it may lead to job satisfaction.

In a study carried out by Owenbiugie and Ekhaise (2020) assessing the human resource management motivational strategies for enhancing business education lecturers' job performance in universities in Edo and Delta States, recommended that management of educational institutions should redesign tasks/jobs from time to time so as to enhance motivation which in turn will increase job satisfaction. To be able to accomplish this recommendation, management of tertiary institutions may employ job design techniques.

The design of job is considered as the means in which part of tasks, or whole job is regulated. In other words, it involves regulating job, role and duties into a piece of work to accomplish certain organizational intentions. Job design assists in determining how tasks are done; how various tasks are performed and in what arrangement the tasks are performed. It is the procedure of stating in advance on the items of a job in terms of its tasks and accountabilities, on the procedures to be used in carrying such assignments.

Job design may also be seen as a combination of job content and the work procedure adopted in the performance of jobs. These techniques include simplification, job rotation, job enlargement, job enrichment. The essence of these techniques are meant at managing job dissatisfaction and employees' disaffection arising from monotony of tasks. Design of job specifies the content of each job and specifying how work is distributed within the organization that may lead to job simplification.

Job simplification may be seen as breaking down of jobs into simple and narrow set of activities. Kapur (2020) described job simplification as the job that is broken down into small parts and each part is assigned to an individual. By performing the same activity repeatedly the workers may have

expertise on the assigned duties which may invariably lead to increase in the profit margin of the organization. This is why Humphrey, Frederick, Morgeson, Jennifer and Nahrgang in Ayyappan (2013) affirmed that simplifying tasks generally is to get rid of lower performance ratings and improve the worker satisfaction in job. The scholar affirmed that job simplification leads to job satisfaction and this will in turn contributes to higher productivity. Job simplification technique has so many advantages among which is cost of training staff that is saved by the organization. If a task is simplified without making room for job rotation, employees may find the job uninteresting.

Job rotation may be seen as the coherent exchange of employees in different tasks, at various jobs and time intervals. In other words, it is a management approach where employees are shifted between two or more assignments or jobs at regular intervals of time in order to expose them to all verticals of an organization in a bid to enhance employees' experience on the job (Al-Nashmi & Almoayad, 2015). Bennett in Dhanraj and Parumasur (2014) stated that "rotating job is an orderly replacement of workers among various tasks within a specified period of time to enhance workers' job performance and productivity". Job rotation may be done in a sequential way by allowing transfers to allow employees to gain awareness, adeptness and proficiencies. When these techniques are properly harnessed, it may lead to job satisfaction of business lecturers in any institutions of learning.

The study investigated the moderating variable of gender which is either male or female, especially when considered with reference to social and cultural differences rather than biological. These include male, female, boys and girls that are socially connected. This may also include ethos, behaviours and roles of being a man, woman, boy or girl, as well as their relationship to one another.

It appears that tertiary institutions encourage the use of simplification of job and rotating job to impel workers and to involve them in the management of the institutions. Therefore, the job of business lecturers may be simplified or rotated. These processes of job design are aimed at providing job satisfaction for the business lecturers, since job satisfaction is either a positive or negative emotion with which employees value their jobs. It follows that if these job

design techniques are properly used, business lecturers may be expected to be satisfied with their jobs. On the contrary, if these job design techniques are not properly used, the business lecturers may be expected not to be satisfied with their jobs. From the foregoing, it is apparent that an employee that does not have job satisfaction may have low quality of work – life. The consequence is that employees with low job satisfaction may perform poorly and have negative attitude towards work. The attitude of these employees may also affect other performance. Consequently, this may directly or indirectly affect the system as a whole.

Statement of the Problem

In recent times, the Federal and State Governments in conjunction with other stakeholders of tertiary educational institutions have made meaningful contribution towards enhancing the well-being of lecturers in tertiary institutions in Nigeria. For example, the implementations of the minimum wage (Opone & Kelikwuma, 2021). Despite the effort put in place by the government and other stakeholders of these institutions, the lecturers appear exhibiting some observable attitudes over their jobs.

Several visits to some institutions under study by the researcher showed that most business education lecturers gather in clusters discussing issues concerning their jobs. It seems that most business education lecturers do not teach their regular classes, display nonchalant attitude toward students' welfare, do not participate in staff meetings, and are not too keen in preparing students' results and attending to students' complaints. These observable attitudes may have affected their job performance and invariably affected students' performances. What could be the reason for these observable attitudes? Could it be that the Heads of Departments do not engage in job design techniques to assuage the business education lecturers feelings? If these observable attitudes are allowed to continue unattended to, it may lead to poor job performance, thereby affecting the performance of students in the various tertiary educational institutions. It is against this backdrop that the researchers set out to investigate why these observable attitudes and to see the extent job design techniques may be able to correlate business education lecturers job satisfaction in public tertiary

Research Questions

The following questions gave credence to the study

1. What level does job simplification correlate job satisfaction of business education lecturers in public tertiary institutions in Edo and Delta States?
2. What level does job rotation correlate job satisfaction of business education lecturers in public tertiary institutions in Edo and Delta States?
3. To what degree does job design technique correlate business education lecturers' job satisfaction in public tertiary institutions based on gender?

Hypothesis

This null hypothesis was tested at 0.05 significant level.

1. There is no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers in public tertiary educational institutions in Edo and Delta states.

Study Purpose

The main purpose of the study was to correlate job design techniques and business education lecturers' job satisfaction in public tertiary educational institutions in Edo and Delta States. Specifically, the study determined the extent to which:

1. Job simplification correlates job satisfaction of business education lecturers.
2. Job rotation correlates job satisfaction of business education lecturers.
3. Job design techniques correlate job satisfaction of business education lecturers based on gender

Conceptual Framework

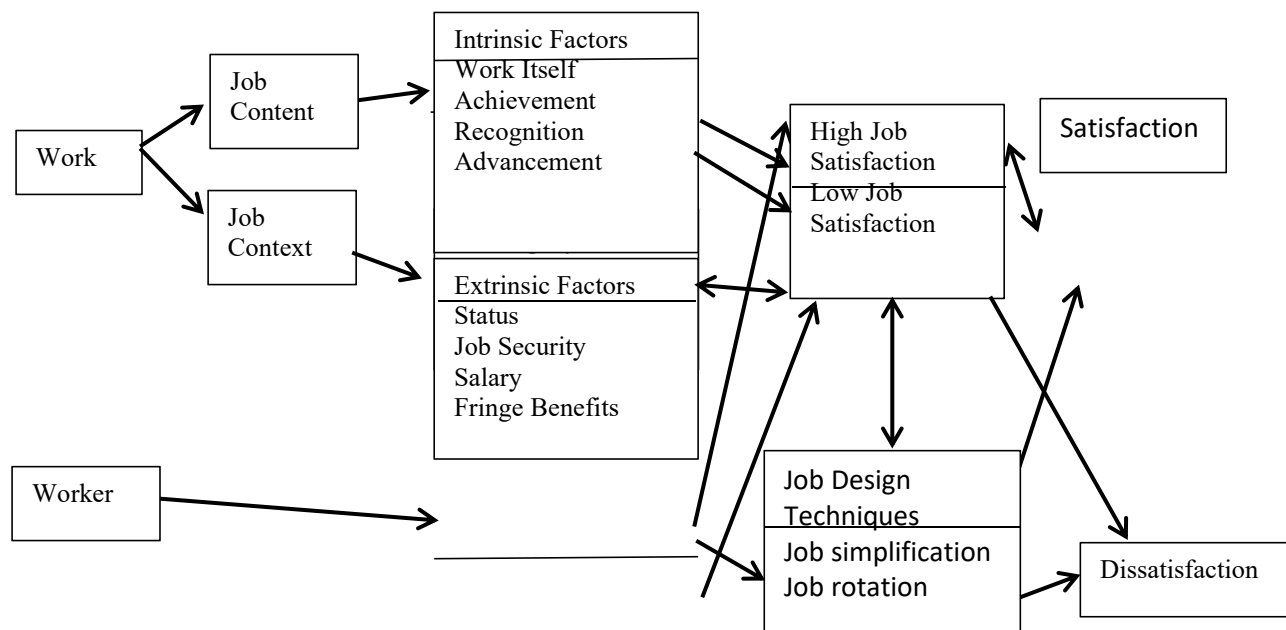


Fig. 1: The conceptual framework is adapted from Owenbuijie's Content and Context Model of Job Satisfaction and Value Creation

Source: Owenbuijie (2015)

The conceptual framework is based on Owenbuijie (2015) content and context model showing the association between job satisfaction and value creation. The model shows the connections between job content and context factors of job satisfaction to overall job satisfaction and also the connections of the two variables of the job design techniques: job simplification, job rotation to overall business education lecturers' job satisfaction. It is assumed that there are factors associated with work itself and which would lead to fulfillment of the individual's need for self-actualization and growth and which are termed satisfiers or content factors. The other factors (dissatisfiers) are also termed the hygiene or context factors because their presence will merely prevent dissatisfaction. Pre-employment expectation of the business education lecturers are factors which determine whether business education lecturers' unsatisfied needs at the time of employment are now being satisfied. If they are not, the effect might be that business education lecturers would be more dissatisfied and this might eventually affect their work performance.

In this model, both job content and context factors are treated as affecting job satisfaction against the two-factor theory of Herzberg. In the present day Nigeria, it would be inappropriate to presume that extrinsic rewards, pay, promotion, status,

working conditions do not contribute to business education lecturers job satisfaction especially now that, apart from high inflationary trend, business education lecturers have continued to compare their rewards with those of workers with equivalent qualifications. Hence, whatever may be the factors associated with the job itself, business education lecturers will often compare their working conditions with those of other workers they are in frequent contact with.

From the conceptual framework, the following assumptions were made by the current researchers:

- ❖ Work is expressed as having two properties of content and context factors.
- ❖ The worker is expressed as having property of gender.
- ❖ The job content factors may affect job satisfaction.
- ❖ The degree of job satisfaction may depend on the job design technique.
- ❖ High job satisfaction of business education lecturers may lead to satisfaction.
- ❖ Low job satisfaction of business education lecturers may lead to dissatisfaction.

This model is well suited for this present study because it highlighted the association between job design and job satisfaction of

business education lecturers in public tertiary institutions. It also indicated that the level of satisfaction or dissatisfaction of business education lecturers may depend on some degrees on the nature of the two variables of job satisfaction and job design technique.

Empirical Review

Ajusa and Atambo (2016) conducted a study on influence of job rotation on organizational productivity at Mount Kenya University and the study found that motivation, worker involvement and training and development are antecedents of organizational productivity. Also, Wyk, Swart and Mukonza (2018) investigated the influence of the implementation of job rotation on employees' perceived job satisfaction and found that the implementation of a job rotation strategy by the Registrar's environment would positively impact job satisfaction of employees in the organization.

In another study conducted by Onwuchekwa, Okoli and Ifeanyi (2020) on job design and sustainability of tertiary institutions in South East, Nigeria it was discovered that there was a significant correlation between skill variety and employee empowerment and between task identity and workplace flexibility. Again, in a research carried out by Teryima and Abubakar (2018) on impact of job design attributes on performance attainment in business organizations using the Deposit Money Banks in Nigeria. The study found that Job Design attributes i.e Skill Variety, Task Identity, Task Significance, Autonomy, and Feedback impact significantly on the performance output of the Deposit Money Banks in Nigeria. While Adjei (2012) conducted a study on the impact of job rotation on employees' performance: a case study of Utrak Financial Services Limited. The researcher found that the participants in the job rotation programme who were interviewed expressed a high level of satisfaction with the programme

Also, Al-Nashmil and Almoayad (2015) conducted a study on the influence of job rotation practices on employee motivation. The result of the study revealed that there was a significant relationship between job rotation with its five components and employee motivation in mobile network companies in Yemen. Marasinghe and Wijayaratne (2018) carried out a study on the impact of gender differences on job

satisfaction of university library professionals and the findings of their research revealed that there is no significant difference in job satisfaction between male and female university library professionals. Meshal and Adnan, (2018) showed on their research work on gender disparity and its impact on job satisfaction: A comparative field study that there is no significant difference on the perception of job satisfaction between male and female.

Methodology

This study adopted correlational survey research design. This design was considered suitable because it explained the extent to which job design correlate business education lecturers job satisfaction in public educational tertiary institutions in Edo and Delta States. The independent variables were job simplification and job rotation, while the dependent variable was job satisfaction. 148 business education lecturers, made up of 118 business education lecturers, from colleges of education and 30 business education lecturers from universities in Edo and Delta States. The 148 also constituted the sample, hence a census. sampling technique was adopted. Two set of instruments were used for data collection. The questionnaires were titled: "Job Design Techniques Questionnaire (JDTQ)" and "Job Satisfaction Questionnaire (JSQ)". The instruments were developed by the researchers. The questionnaires were split into sections A and B. Section A measured the demographic variables of the respondents which comprised gender of the respondents. Section B of Job Design Techniques Questionnaire (JDTQ) made up of 20 items which were divided into two clusters that measured the relevant variables of job design technique, while Section B of Job Satisfaction Questionnaire (JSQ) was made up of 20 items that measured the relevant variables of job satisfaction. The two clusters of the job design techniques questionnaire included simplification of job and rotation of job. The job design technique and job satisfaction were measured with a "5-point Likert Type Scale ranging from Very High Extent (VHE = 5), High Extent (HE = 4), Moderate Extent (ME = 3), Low Extent (LE = 2), and Very Low Extent (VLE = 1)". The instruments were subjected to validity by three experienced scholars. "Cronbach's alpha" statistical tool was used for reliability. The

researchers administered the instruments with the help of nine persons, one from each of the institutions who assisted in the distribution of the questionnaire. The Statistical Packages for Social Science (SPSS) version 23.0 was used for the data analysis. The descriptive and inferential statistical tools were used in analyzing the data. The Pearson Product Moment Correlation Co-efficient Statistics was used in answering the research questions, while Hypothesis was tested using the Fisher-Z. Decision rule was based on r-value, where any calculated r-value between .00 and .30 was regarded as low/weak correlation, .31 and .60 was regarded as moderate/average correlation, .61 and 1.00 was regarded as

high correlation (Owie, 2013). For the hypotheses, the Z-table value was used. When the calculate Z-value was less than the Z table value of 1.96 at 0.05 level of significance, the null hypothesis was retained, but when the calculated Z-value was greater than the Z-table value of 1.96 at 0.05 level of significance, the null hypothesis was rejected.

Results

Research Question 1

To what extent does job simplification correlate job satisfaction of business education lecturers in public tertiary institutions in Edo and Delta States?

Table 1: *Pearson's Correlation of Job Simplification and Job Satisfaction of business education lecturers*

Variables	N	Pearson's r	Sig. (2-tailed)	Remark
Job Simplification	148	.332	.000	Moderately positive relationship
Job Satisfaction				

Table 1 shows a calculated Pearson's r value of .332. Since the r value falls within .31-.60 and it is positive, it shows that there is a moderately positive relationship between job simplification and job satisfaction. Therefore, there is a moderately positive correlation between job simplification and job satisfaction of

business education lecturers in public tertiary institutions in Edo and Delta States.

Research Question 2

To what extent does job rotation correlate job satisfaction of business education lecturers in public tertiary institutions in Edo and Delta States?

Table 2: *Pearson's Correlation of Job Rotation and Job Satisfaction of business education lecturers*

Variables	N	Pearson's r	Sig. (2-tailed)	Remark
Job Rotation	148	.420	.000	Moderately positive relationship
Job Satisfaction				

Data presented in Table 2 shows the correlation coefficients between job rotation and job satisfaction of business education lecturers. A calculated Pearson's r value of .420 is obtained for the variables. Since the r value falls within .31 – .60 and it is positive, it shows that there is a moderately positive relationship between job rotation and job satisfaction. Therefore, there is a moderately positive correlation between job rotation and job satisfaction of business

education lecturers in public tertiary educational institutions in Edo and Delta States.

Hypothesis

There is no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers in public tertiary educational institutions in Edo and Delta states.

Table 3: Fishers Z of Job Design Techniques and Job Satisfaction by gender

Gender	N	r	Z'	Z	Ztable
Male	78	0.671	0.813	0.466	1.96
Female	70	0.627	0.736		

$\alpha = .05$

Table 3 showed a Z value of 0.466 and a table Z value of 1.96, testing at an alpha level of 0.05 the Z value falls in the acceptance region. So, the null hypothesis which states that “There is no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers” was retained.

Discussion of Findings

The study investigated job design techniques and business education lecturers' job satisfaction in public tertiary educational institutions in Edo and Delta States. The findings of research question one revealed that the relationship between job simplification and job satisfaction of business education lecturers in public tertiary educational institutions in Edo and Delta States had a moderately positive correlation. This showed that the application of job simplification in public tertiary educational institution has a moderately positive correlation on business education lecturers' job satisfaction. This implies that with their moderately positive relationship, there is bound to be moderately positive satisfaction of the business education lecturers using job simplification technique. With this moderately positive relationship, there is the possibility of business education lecturers being satisfied with their job to a moderate extent using job simplification in universities and colleges of education. This finding corroborates the findings of Humphrey, et al. in Ayyappan (2013) which stated that simplifying tasks generally is to get rid of lower performance ratings and improve the worker satisfaction in job. Organization which focuses on providing simplification of work turns to job satisfaction and this will contribute to higher productivity. While the findings contradict the findings of Humphrey et al. in Ayyappan (2013) who found that frantic efforts to increase efficiency by simplifying workers' job responsibilities may in fact lead to lower employees' job satisfaction and productivity with time.

The findings from research question two showed that job rotation had moderately positive relationship with job satisfaction of business education lecturers in public tertiary institutions in Edo and Delta States. This means that when there is proper

rotation of the work of the business education lecturers, it will bring about job satisfaction in the tertiary institutions. The finding corroborates the findings by Wyk, et. al. (2018) who found that the implementation of job rotation strategy would positively impact job satisfaction. The findings also agree with Onwuchekwa, et al. (2020); Teryima and Abubakar (2018); Ajusa and Atambo (2016); Adjei (2012) who found that there was a significant correlation between skill variety and employee empowerment and between task identity and workplace flexibility and that participants in the job rotation programme expressed a high level of satisfaction with the programme. It also corroborates the findings of Al-Nashmii and Almoayad (2015) that there is a significant relationship between job rotation with its five components and employee motivation.

The test of hypothesis one showed that there was no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers. This finding corroborates the findings of Marasinghe and Wijayaratne (2018) that there is no significant differences in job satisfaction between male and female university library professionals. This findings also supports the findings of Meshal and Adnan (2018) in their work on gender disparity and its impact on job satisfaction: A comparative field study that there was no significant difference on the perception of job satisfaction between male and female.

Conclusion

The study concluded that job simplification and job rotation provides a moderately positive job satisfaction to business education lecturers. It also concluded that when there is proper rotation of the job of the business education lecturers, it will bring about job satisfaction in the tertiary institutions. It was also established that there is no significant relationship between job design techniques and job satisfaction of male and female business education lecturers. Management of tertiary institutions should therefore strive to strengthen the job design techniques that are capable of improving the job satisfaction of business education lecturers.

Recommendations

Based on the findings of the study, it was recommended that:

1. Management of educational institutions should predominantly design their jobs using job rotation design techniques, since business education lecturers derive job satisfaction from its application
2. Heads of Departments of Business Education should vary the use of job design techniques in order to achieve the best result that will yield business education lecturers the maximum satisfaction in performing their jobs.
3. The management of tertiary educational institutions should engage all personnel in their job design strategies, since there is no significant difference in the relationship between job design techniques and job satisfaction of male and female business education lecturers.

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Research Article

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The Impact of Total Quality Management on Organizational Effectiveness within the context of Delsu Investment Limited (Delsu Investment Limited)

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Abstract

The primary objective of this research is to investigate the impact of Total Quality Management on organizational effectiveness within the context of Delsu Investment Limited (DELSU INVESTMENT LIMITED). This research work is based on Deming's theory of total Quality Management and EFQM (European Foundation Quality Model). This study employed a descriptive survey design to investigate the relationship between Total Quality Management (TQM) and organizational effectiveness. The total population of the study is 67, this consist of staffs in various department of DELSU Investment Limited (DIL) Abraka, located in Ethiopie East Local Government of Delta State, Nigeria. Since the population is small, the Total Enumeration Sampling Techniques (TEST) approach was employed to determine the sampling size (Reddy and Khan 2023) As a result 67 employees or 100% of the population made up the sample which comprises of core staff of the various departments in DELSU Investment Limited (DIL). Multiple regression analysis was used because it is good at determining the statistical relationship between two or more variables and to make predictions of one variable on the basis of the other according to Unukpo (2017). They were employed using the statistical package for social science (SPSS) software version 23. There's significant positive relationship between top management support and organizational effectiveness of DIL Abraka ($0.047 < 0.05$), thus the null hypothesis is accepted and the alternate hypothesis is rejected, There's significant positive relationship between employee engagement and organizational effectiveness of DIL Abraka ($0.014 < 0.05$), thus the alternate hypothesis is accepted and the null hypothesis is rejected. There's significant positive relationship between continuous improvement and organizational effectiveness of DIL Abraka ($0.133 < 0.05$), thus the null hypothesis is accepted and the alternate hypothesis is rejected. From the findings of the study, it can be concluded that Total Quality Management (TQM) significantly affected the organizational effectiveness of DELSU Investment Limited, in Abraka Delta State. The study recommends that Top management should actively and visibly support TQM initiatives at DELSU Investment Limited (DIL). This involves setting clear objectives, allocating necessary resources, and regularly communicating the importance of quality initiatives. Demonstrating commitment through visible actions, such as attending quality meetings and celebrating achievements, can reinforce the value of TQM and integrate it deeply into the organizational culture. The research provides empirical evidence on how different components of TQM—top management support, employee engagement, continuous improvement, and continuous training affect organizational effectiveness.

Keywords: Total quality Management, organizational effectiveness, top management support, employee engagement, continuous improvement, continuous training

Introduction

Total Quality Management (TQM) has emerged as a widely adopted management philosophy that has proven to be instrumental in improving organizational performance and competitiveness across various industries (Djerdjour and Patel, 2019). Total quality management emphasizes a holistic approach to quality that involves all aspects of an organization, ranging from leadership commitment to continuous improvement, employee involvement, and customer satisfaction (Hoyer and Hoyer 2021).

In the 1980s, for the first time, quality has been considered as a competitive weapon that could be used against competitors (Zairi, 2002). It is the most common fact that very few organizations around the world are concerned on quality as a weapon to generate competitive advantage. As quality improves, resulting in improved market share, profitability and market growth (Omachonu & Ross, 2014). Hence, quality approaches to management as a competitive weapon with an emphasis on the word “total” and a broad understanding of “quality” includes all activities at all levels in all areas (Shin et.al, 2018) known as Total Quality Management (TQM) to achieve sustainability and long-term business goals within global market. However, globalization opens the doors for opportunities and challenges as well as increases global market competition between companies.

For the last 20 years, the framework and principles of TQM have been enjoying wide popularity and most of the companies around the world have been experiencing it as a critical tool to achieve competitive advantage (Venkateswarlu & Nilakant, 2015). Practices of TQM principles probably one of the best-understood change management program and could be the best option to face challenges of highly changing global market (Wali et.al, 2018) since quality superiority results in greater customer loyalty, market share improvements, higher stock prices, reduced

service calls, higher prices and greater productivity (Omachonu & Ross, 2020) as well as improved competitive position (Wali et.al, 2018). In fact, adaptation of TQM principles are not only benefited manufacturing and service organizations but also have significant implications in technology (telecommunications, IT), health care (hospitals, medicines), educational institutes (universities/colleges), training centre and government agencies and departments (defence).

While some organization, run TQM like a program which they expect to function and perform the magic all by itself, others have used a half hearted approach to it, by using some bits and pieces of the principles. This has accounted for the failure of most organization in meeting up to their expected target from implementing this ideology. There is a need to continue to buttress the benefits that accrue to organizations from the implementation of TQM, especially in developing economies, such as Nigeria where the adoption of these principles seems farfetched to organizations.

Problem Statement

Despite the widespread recognition and adoption of Total Quality Management (TQM) as a powerful strategy for enhancing organizational performance, numerous studies have identified challenges and issues associated with its implementation. Organizations often encounter obstacles in aligning TQM principles with their unique operational contexts, leading to variations in the effectiveness of implementation. In the case of DELSU Investment Limited (DIL) in Abraka, it is essential to investigate and identify the specific challenges that may hinder the successful adoption and integration of TQM practices.

Studies have highlighted factors such as resistance to change, lack of top management commitment, and inadequate employee involvement as common impediments to the successful implementation of TQM. Moreover, the contextual nature of challenges may vary

across industries and organizations, underscoring the need for a detailed examination within the specific context of DIL. Therefore, a comprehensive analysis of the challenges faced by DIL in implementing TQM is crucial for understanding the potential barriers and devising effective strategies for successful integration.

The primary objective of this research is to investigate the impact of Total Quality Management on organizational effectiveness within the context of Delsu Investment Limited (DELSU INVESTMENT LIMITED). Specific objectives include: to examine the extent to which top management support impact on organizational effectiveness of DIL Abraka, to determine the level of employee engagement on organizational effectiveness of DIL Abraka and to investigate the extent to which continuous improvement impact on organizational effectiveness of DIL Abraka. The research questions and hypotheses are in line with the research objectives.

Review of Related Literature

Concept of Quality

Quality speaks of authenticity, high standard, integrity and value not just in organizations or products and services but in every aspect of human life. The need for quality as a fundamental component in the formulation of strategies for institutions to implement TQM is clearly outlined present in the day-to-day running of an institution, in aspects such as establishment of policies, decision process, selection of personnel, allocation of resources, definition of priorities and service delivery to satisfy customer requirements". According to Djerdjour and Patel (2019), quality is no longer an optional extra; it is an essential strategy to survive.

Total Quality Management is therefore a solution for improving the quality of products and services. Before one can discuss the concept of TQM, one first needs to discuss, understand and analyze the concept of 'quality' itself. According to Dale (2020) and Evans and Dean (2019)

quality, reliability, delivery and price build the reputation enjoyed by an institution. Quality is the most important of these competitive weapons and is an extremely difficult concept to define in a few words in order to agree on a consensus definition; a trait it shares with many phenomena in business and social sciences (Hoyer and Hoyer 2021). Quality does not only refer to goods and services but includes quality of time, place, equipment and tools, processes, people, the environment and safety, information and measurement (Dale 2020).

Total Quality Management

Total quality management (TQM) is a systematic quality improvement approach for firm-wide management for the purpose of improving performance in terms of quality, productivity, customer satisfaction, and profitability. Since TQM practices have been embraced by many firms around the world for decades, they have earned the attention of many researchers from diverse areas.

Total Quality Management is a management philosophy that is intended to empower every member of the organization. It is intended to promote continuous, sustained, and long term improvement in quality and productivity and to eliminate employees' fear of change. Its basic principle is that the cost of prevention is less than the cost of correction. Bellis-Jones and Hand, (1999) suggests that TQM is not just another management fad; it is capable of delivering real competitive advantage. The TQM approach integrates the fundamental techniques and principles of quality function deployment, statistical control, and existing management tools in a structured manner.

Total Quality Management (TQM) Strategy

Four components frequently cited as critical to a successful TQM strategy are customer satisfaction, employee involvement, managerial leadership, and process improvement and control. Marketing theory has long recognized the importance of

customer satisfaction to the business organization. Quality-focused organizations must identify their customers (both internal and external), determine the specific needs of these customers, integrate all activities of the organization (including marketing, production, finance, HRM, and IS) to satisfy the needs of these customers, and finally, follow up to ensure the customers have been satisfied (Feigenbaum 1991). JIT, TQM, and SCM represent alternate approaches to improving the effectiveness and efficiency of an organization's operations function. The cost of quality is considered by both Crosby and Juran to be the primary tool for measuring quality. In their approach, it is used to track the effectiveness of the TQM process, select quality improvement projects, and provide cost justification to doubters. By bringing together these easily assembled costs of review, inspection, testing, scrap, and rework, one can convince management and others of the need for quality improvement." Cost of quality has received increasing attention in recent years. It is effective in its intended purpose of raising awareness about quality and communicating to management the benefits of TQM in terms of dollars. Under TQM systems, product/service design efforts have two objectives: designing manufacturable products and designing quality into the products (Handfield, Jayaram and Ghosh, 2019). Designing to simplify manufacturing utilizes cross-functional teams to reduce the number of parts per product and standardize the parts (Chase, Aquilano and Jacob, 2021), which results in more efficient process management by reducing process complexity and process variance (Ahire and Dreyfus, 2020).

Top Management Commitment and Support

Top management commitment and support are foundational pillars of Total Quality Management (TQM). Scholars and experts in quality management have emphasized the critical role that top management plays in

fostering a culture of quality excellence within an organization.

Dale (2020) highlights the importance of top management's understanding and buy-in when it comes to TQM. Leaders must have a deep comprehension of TQM principles and methodologies to effectively lead quality improvement initiatives. This understanding goes beyond surface-level knowledge and encompasses a deep appreciation for how TQM aligns with the organization's goals and values. Choppins (1995) highlights the pivotal role of top management in providing the necessary resources for TQM initiatives to succeed. This includes allocating finances, time, personnel, and technology necessary to support quality improvement efforts across the organization. Without adequate resources, TQM initiatives may lack the necessary support to achieve their goals.

Oschman (2019) suggests that top management should set clear expectations regarding quality standards, performance goals, and the importance of continuous improvement. This involves defining measurable objectives, outlining the role of each department in quality improvement, and communicating the importance of quality excellence to all employees.

Furthermore, effective top management identifies and removes barriers that hinder the successful implementation of TQM, as discussed by Dale (2020). This may involve addressing organizational silos, resistance to change, and other obstacles that impede quality improvement efforts. Leaders play a crucial role in restructuring processes, fostering collaboration between departments, and promoting a culture of openness to change.

Total Employee Engagement

Total employee involvement is a fundamental principle in Total Quality Management (TQM) that emphasizes the active participation and contribution of every employee in quality improvement initiatives and processes. Scholars and experts in quality management have

extensively discussed the significance of involving employees at all levels to achieve quality excellence within an organization.

Barner (2008) stresses the importance of total employee involvement as a key aspect of TQM. This principle contrasts TQM from previous quality management initiatives by emphasizing that TQM is not just a top-down approach but a way of organizing and involving the entire organization, including every department, activity, and individual employee. In TQM, every employee is seen as a valuable contributor to the quality improvement process.

Choppins (1995) further elaborates on the role of total employee involvement in TQM by highlighting its importance as an outcome and a condition for continuous improvement. Teams are generally viewed as more powerful and effective work entities than individuals, and teamwork is essential for all organizations to work more flexibly and develop mutual trust among members. Total employee involvement fosters a sense of ownership and accountability for quality improvement initiatives.

Oschman (2019) emphasizes that empowerment is an integral part of total employee involvement in TQM. Empowerment creates an environment where employees have the ability, confidence, and commitment to take responsibility and ownership of improving processes to satisfy customer requirements and achieve organizational goals. TQM offers ways in which empowerment of employees can support an organization's efforts not only in quality improvement but also in overall organizational effectiveness.

Continuous improvement

Continuous improvement is a cornerstone principle of Total Quality Management (TQM) that focuses on ongoing enhancement of processes, products, services, and organizational performance. Scholars and experts in quality management have extensively discussed the importance of continuous improvement in driving

excellence and competitiveness within organizations.

Dale (2020) emphasizes that the best way to improve organizational output is through continuous improvement. Quality improvement is not a task with an end; it is a dynamic process that requires organizations to constantly seek opportunities for enhancement. This emphasis on continuous improvement aligns with the core philosophy of TQM, which advocates for never-ending efforts to meet both external and internal customer needs.

Oschman (2019) underscores that continuous improvement is not just about making incremental changes but also about encouraging bold and innovative initiatives. TQM encourages organizations to adopt a proactive approach to improvement, leveraging data, feedback, and best practices to drive meaningful and sustainable enhancements across all aspects of operations.

Theoretical Framework

Total Quality Management (TQM) is a quality improvement body of methodologies that are customer-based and service oriented. TQM was first developed in Japan in 1940s after the Second World War by quality gurus who includes Shewhart, Deming, Juran, Feigenbaum, Ishikawa and Taguchi and then spread in popularity. However, while TQM may refer to a set of customer based practices that intend to improve quality and promote process improvement, there are several different theories at work guiding TQM practices. This research work is based on Deming's theory of total Quality Management and EFQM (European Foundation Quality Model).

Deming's theory of Total Quality Management was postulated by W. Edwards Deming worked as a statistician and researcher during World War II, and in the 1950s and rests upon fourteen points of management he identified, the system of profound knowledge, and the Shewart Cycle (Plan-Do-Check-Act). He is known for his ratio - Quality is equal to the result of work

efforts over the total costs. If a company is to focus on costs, the problem is that costs rise while quality deteriorates. Deming's system of profound knowledge consists of the following four points:

Research Methodology

Research Design

This study employed a descriptive survey design to investigate the relationship between Total Quality Management (TQM) and organizational effectiveness. The study adopted a mixed-methods approach, combining participant observation and surveys to gather comprehensive data. This

approach was deemed most applicable due to its capacity to collect large and standardized data.

Population of the Study

Okeke (2002) defines population as the collection of elements, units or individuals for which information is sought. The total population of the study is 67, this consist of staffs in various department of DELSU Investment Limited (DIL) Abraka, located in Ethiope East Local Government of Delta State, Nigeria.

The breakdown of the population is detailed in the table below:

List of DELSU Investments Units

Departments in DIL	No. of Employees
Bakery	7
Block Industry	1
Consultancy	11
Eatery	4
Farm	2
Guest house	9
ICT	5
Oil Mill	1
Petrol Station	5
Printing Press	13
Water Factory	10
Total	67

Source: Managements of DELSU Investment Limited (DIL), Abraka.

The total population was collected directly from the management of DELSU Investment Limited (DIL), Abraka. The total population comprises of major staffs in charge of the various department listed in the table above.

Sample size and sampling technique

According to Osuala (2023), sampling is any portion of a population or universe taken as a representative of that population. It is a group of relatively smaller number of people or events selected from a population for investigation purpose. Since the population is small, the Total Enumeration Sampling Techniques (TEST) approach was employed to determine the sampling size (Reddy and Khan 2023) As a result 67

employees or 100% of the population made up the sample which comprises of core staff of the various departments in DELSU Investment Limited (DIL).

Research Instrument

The instrument for data collection is a questionnaire. It consists of section A and B. Section A; elicit personal information about the respondents.

Method of Data Administration

The researcher administered the questionnaire to the staff of DELSU Investment Limited (DIL), Abraka, in Ethiope East Local Government Area of Delta State with the assistance of selected staff members of the organization. The questionnaires were distributed to the

respondents and subsequently collected after completion before being returned to the researcher for coding and analysis.

Validity of research instrument

The validity of the research instrument will be ensured through multiple steps. Content validity will be established by reviewing existing literature on TQM and organizational effectiveness and consulting experts to ensure comprehensive coverage of relevant dimensions. Construct validity will be confirmed through exploratory factor analysis to verify the underlying structure of the questionnaire. These steps will ensure the instrument accurately measures TQM practices and their impact on organizational effectiveness at DELSU Investment Limited (DIL) in Abraka.

Test of Validity:

The study performed content validity testing. This has to do with administering the

questionnaire to 10 expert researchers. Their feedback was used to improve the questionnaire. Content validity is defined as “the degree to which items in an instrument reflect the content universe to which the instrument will be generalized” it is highly recommended to apply content validity while the new instrument was developed.

Reliability of Instrument:

Reliability refers to the stability of the measuring instrument used and its consistency over time. The literature reveals that the acceptable reliability should fall between 0.70 and above, however 0.60 may be acceptable. A high value of Cronbach's alpha test means that the stability, reliability and certainty of the instrument used in measurement is very assured (Singh & Masuku, 2014). The reliability score of the construct yielded a Cronbach's alpha of $r=0.811$ as shown below in the table below:

Reliability Statistics:

Cronbach's Alpha	No of Items
.811	5

Source: SPSS Version 23.

Method of Data Collection:

Data was collected through primary and secondary sources. Questionnaire administered to respondents is of the primary data source. The source of primary data for this study is the questionnaires which were administered to sixty seven (67) staff of DELSU Investment Limited (DIL) Abraka in Delta State. The collection of data that was used for analytical purpose in this research was done by means of a self-administered structured questionnaire distributed to staff in DELSU Investment Limited (DIL) Abraka, Delta State and retrieved thereafter by hand after given the respondents sufficient time to respond to the various questionnaires constructs in each of the sub-scales. The internet as well as the library constituted the secondary data collection medium. This includes journals, newspapers, magazines, textbooks, research

findings reports etc.

Method of Data Analysis:

In this study, statistical techniques of data analysis were used. The list includes: descriptive statistics, frequency analysis and multiple regression analysis. Multiple regression analysis was used because it is good at determining the statistical relationship between two or more variables and to make predictions of one variable on the basis of the other according to Unukpo (2017). They were employed using the statistical package for social science (SPSS) software version 23.

Data Analysis and Presentation of Results

This chapter provides a detailed analysis of data collected from field survey via the administration of questionnaire. The questionnaire comprises of two sections; A

and B. While section 'A' contains four (4) questions on the demographics of the respondents such as Gender, Age, education and marital status, section 'B' contains twenty (25) questions on the aspect of "Total Quality Management (TQM) and organizational effectiveness at DELSU.. Investment Limited (DIL), Abraka." A total number of 67 questionnaire were distributed to the employees in DELSU.. Investment Limited (DIL), Abraka, out of which Sixty (60) respondents were returned properly and adequately completed. The data collected

from the respondents via questionnaire will be classified, organized and analyzed.

General Response Rate:

Sixty Seven (67) copies of questionnaires were administered specifically to employees in DELSU Investment Limited (DIL), Abraka. A total of Sixty seven (67) questionnaires were retrieved properly and 60 copies were adequately completed by the staffs. The 60 questionnaires will be used for the analysis of this study.

Analysis of the Field Survey.

The analysis from the field survey is presented below in tabular form:

	Number administered	Number returned	Unused copies	Number used	Response rate
Employees	67	67	7	60	89.5%

Socio-Demographic Profile of the Respondents:

This section shows the reported demographic profile of the sample, showing

distribution in terms of gender, age, academic qualification and marital status.

Gender Distribution

Gender	No of Respondents	Percentage
Male	25	41.7%
Female	35	58.3%
Total	60	100

Age Group Distribution

Age Category	No of Respondents	Percentage
Below 30 years	25	41.7%
31 – 40 years	20	33.3%
41 - 50 years	15	25%
Total	60	100

Educational Background

Educational Status	No of Respondents	Percentage
O'Level	14	23.3%
NCE/OND	17	28.3%
HND/B.SC	25	41.7%
Postgraduate Degree	4	6.7%
Total	60	100

Marital Status

Marital Status	No of Respondents	Percentage
Single	29	48.3%
Married	24	40.0%
Divorced	7	11.7%
Total	60	100

Source: Researcher's Field Survey Result (2026)

The table above shows the gender, age, marital and educational status of the sample population. It shows that 35 out of the total questionnaires returned were Female representing 58.3% of the total sample size while 25 were Male representing 41.7% of the total sample size. From the above analysis, it can be inferred that majority of the respondents were Females.

The numbers of the respondents that are below 30 years of age, were 25, and this represents 41.7% of the total sample followed by 20 respondents in the age bracket of 31-40 which represents 33.3% of the total sample. 15 respondents are in the age bracket of 41-50 making up 25% of the total sample size.

The table also presented information on the educational status of the respondents. It shows that 25 respondents have a Bachelor's degree making up 33.3% of the total respondents. 17 respondents have an NCE/OND degree making up 28.3% of the total respondents. 14 respondents have O' Level certificate representing 23.3% of the total respondents. 4 respondents have a

postgraduate degree representing 6.7% of the total respondents. It is vivid that majority of the respondents have a Bachelor's degree as their highest academic qualification.

Furthermore, regarding the marital status of the sample population. It shows that 29 respondents are Single, representing 48.3% of the sample population which is clearly the largest. 24 respondents are married and this represents 40.0% of the total respondents. While 7 respondents are divorced and this represents 11.7% of the total sample size. It can thus be inferred that majority of the respondents are single.

Test of Hypothesis:

Four (4) hypotheses will be tested using the multiple regression analysis in the course of this study. In the regression analysis, when the significant (sig) value is less than 0.05 for 95% confidence level or less than 0.01 for 99% confidence level we accept the alternative hypothesis and reject the null hypothesis and vice versa.

Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797 ^a	.635	.609	.24825

Source: Data Analysis Survey 2024, using SPSS.

Predictors: (Constant), Top Management Support, Employee Engagement, Continuous Improvement, Continuous Training.

Dependent Variable: Organizational Effectiveness.

Above revealed that there is a strong relationship at $R=0.797^a$ between the

Independent Variables (Top Management Support, Employee Engagement, Continuous Improvement and Continuous Training) and the Dependent variable (Organizational Effectiveness). The coefficient of determination $R^2 = 0.635$ implies that, the Independent Variables (Top Management Support, Employee

Engagement, Continuous Improvement and Continuous Training) accounts for 63.5% of variations having a significant effect on Dependent variable (Organizational Effectiveness). The Adjusted R Square 0.668 measures the goodness or fitness of

the model and also explain the impact of Top Management Support, Employee Engagement, Continuous Improvement and Continuous Training in relation to Organizational Effectiveness 66.8% ways.

ANOVA

Model		Sum of Squares	Degree of Freedom	Mean Square	F-Ratio	Significance
1	Regression	5.904	4	1.476	23.949	.000 ^b
	Residual	3.390	55	.062		
	Total	9.293	59			

Source: Data Analysis Survey 2026, using SPSS.

a. Dependent Variable: Organizational Effectiveness.

b. Predictors: (Constant) Top Management Support, Employee Engagement, Continuous Improvement, Continuous Training.

Table 4.3.2 shows that the F-Ratio is the Mean Square Regression (1.476) divided by the Mean Square Residual (0.062), yielding

F=23.949. From the result in this table the level of statistical significant (Sig <.000). Therefore, Top Management Support, Employee Engagement, Continuous Improvement, and Continuous Training is a significant predictor of Organizational Effectiveness.

Multiple Regression Analysis of Total Quality Management (TQM) on organizational effectiveness

Coefficients.

Model		Unstandardized Coefficients.		Standardized Coefficients	Test Statistic Value	Significance
		B	St.d Error	Beta		
1	Constant	0.135	0.358		0.378	0.707
	Top Management Support	0.189	0.093	0.198	2.034	0.047
	Employee Engagement	0.285	0.129	0.258	2.206	0.032
	Continuous Improvement	0.190	0.124	0.178	1.523	0.133
	Continuous Training	0.339	0.133	0.326	2.549	0.014

Source: Data Analysis Result 2026, SPSS.

a. Dependent Variable: organizational effectiveness.

The table 4.3.3.above, revealed the degree of the impact of Top Management Support, Employee Engagement, Continuous Improvement, and Continuous Training on organizational effectiveness and its level of significance. The result shows that Continuous Training has the highest value ($\beta=0.339$, $t=2.549$, $p<0.014$). This is followed by Employee Engagement ($\beta=0.336$, $t=2.549$, $p<0.014$). The next with highest value is Top Management Support ($\beta=0.189$, $t=2.034$, $p<0.047$), Continuous Improvement has the least value ($\beta=0.190$, $t=1.523$, $p<0.133$). All the variables have significant values since the associated p-values are less than 0.05. This implies that Top Management Support, Employee Engagement, Continuous Improvement, and Continuous Training have significant effect on organizational effectiveness. Except for Continuous Improvement whose p-value is greater than 0.05, which implies that Continuous Training have insignificant effect on organizational effectiveness.

Multiple Regression Model is given as

$$EP = a + \beta_1 TMS + \beta_2 LEE + \beta_3 CI + \beta_4 CT + \varepsilon$$

Where OE = Organizational Effectiveness.

a = constant

βx = Coefficient of X

ε = Error

Therefore, Organizational Effectiveness =

$$= 0.135 + 0.189TMS + 0.285LEE + 0.190CI + 0.339CT + \varepsilon$$

The test of each hypotheses and its discussion of findings is as follow:

The null hypotheses will be accepted if the p-value (calculated value) is greater than ($>$) the set level of significance (0.05) and reject the alternate hypotheses. Also if it is less than ($<$) the set level of significance (0.05) the alternate hypotheses will be accepted vice visa (Unukpo, 2017).

1. There is no significant relationship between top management support and

organizational effectiveness of DIL Abraka.

The result in the table 4.3.3. (the table of Coefficients) indicate that, top management support has the third highest of value ($\beta=0.189$, $t=2.034$, $p<0.047$). Since the associated p-value (sig value) is less than ($<$) the set level of significance (0.05) therefore, the alternate hypothesis which says top management support has significant effect on organizational effectiveness is accepted and the null hypothesis which says top management support has no significant effect on organizational effectiveness is rejected.

This findings is supported by Pham, Pham, & Pham, (2020). Highlighting that Top management support has been found to affect organizational effectiveness such as work performance. The study examined the relationship between top management support and organizational performance and shown that there is a positive relationship between these two variables. Exploration of these variables was based on a systematic examination of literature, a unique contribution toward elaborating upon the elements impacting organizational performance. Njenga, Kariuki, & Wanjohi, (2023) also support the findings highlighting, that top management support has a positive and significant relationship with effectiveness of an organisation. The study revealed that management's commitment determines the level of organizational success.

2. There is no significant relationship between employee engagement and organizational effectiveness of DIL Abraka.

The result in the table 4.3.3. (the table of Coefficients) indicate that, employee engagement support has the second highest of value ($\beta=0.336$, $t=2.549$, $p<0.014$). Since the associated p-value (sig value) is less than ($<$) the set level of significance (0.05) therefore, the alternate hypothesis which says employee engagement has significant effect on organizational effectiveness is accepted and the null hypothesis which says employee engagement has no

significant effect on organizational effectiveness is rejected.

The findings collaborate with the findings of Deepalakshmi, Tiwari, Baruah, Seth & Bisht (2024). Highlighting the positive effects of employee engagement on employee productivity the study consistently demonstrates a positive correlation between employee engagement and organizational performance metrics such as productivity, profitability, customer satisfaction, and employee retention. Employee engagement should be recognized as a strategic priority for organizations seeking to enhance their performance in a competitive market environment. Mansor, Mat Jusoh, Hashim, Muhammad, & Omar (2023) also support the findings, revealing a significant relationship between employee engagement and organizational performance. The study highlights the importance of employee engagement and its relationship to organizational performance. It is concluded that there is a significant relationship between employee engagement and organizational performance with a moderate level relationship.

3. There is no significant relationship between continuous improvement and organizational effectiveness of DIL Abraka.

The result in the table 4.3.3. (the table of Coefficients) indicate that, continuous improvement has the least of value ($\beta=0.190$, $t=1.523$, $p<0.133$). Since the associated p-value (sig value) is greater than ($>$) the set level of significance (0.05) therefore, the null hypothesis which says continuous improvement has no significant effect on organizational effectiveness is accepted and the alternate hypothesis which says continuous improvement has significant effect on organizational effectiveness is rejected.

The findings collaborate the study of Mwilu, & Wainaina (2021) highlighting that process improvement is positively correlated with organization performance but contradict the result stating that process improvement has

significant effect on organization performance. The findings also contradict the findings of Jerab, D. (2024) stating that effective continuous improvement initiatives positively impact organizational performance across various dimensions. Organizations that prioritize continuous improvement tend to experience higher levels of productivity.

Recommendation

Top management should actively and visibly support TQM initiatives at DELSU Investment Limited (DIL). This involves setting clear objectives, allocating necessary resources, and regularly communicating the importance of quality initiatives. Demonstrating commitment through visible actions, such as attending quality meetings and celebrating achievements, can reinforce the value of TQM and integrate it deeply into the organizational culture.

Reevaluate and refine the continuous improvement processes to enhance their impact. Although continuous improvement was expected to have a significant impact, the study found its effect to be insignificant. DIL should reassess its continuous improvement strategies to ensure they are effectively aligned with organizational goals. This might involve conducting a thorough review of existing practices, implementing structured feedback loops, and using quality improvement tools more effectively. Focusing on specific, data-driven areas for improvement can help make these initiatives more impactful and better support overall organizational effectiveness.

Contribution to Knowledge

The study tends to offers some contributions to the field of Total Quality Management (TQM) and its application within organization context:

1. Clarification of TQM Components' Impact: The research provides empirical evidence on how different components of TQM—top management support, employee engagement, continuous

improvement, and continuous training—affect organizational effectiveness. By identifying the specific impacts of these components. This insight is valuable for organizations seeking to implement or improve their TQM practices, offering a clear basis for prioritizing efforts and resources.

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Efficiency Improvement Strategy Using Data Envelopment Analysis (Dea) and Linear Programming Methods in a Tofu Factory in Bengkulu City

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Abstract

This study aims to analyze the level of production efficiency and determine the optimal combination of production factors at the Saiful Tofu Factory in Bengkulu City. The analytical methods used were non-pure Data Envelopment Analysis (DEA) to measure technical production efficiency and Linear Programming with the Z-maximum and Z-minimum approaches to determine optimal production conditions. Research data was obtained through observation, interviews, and documentation. Input variables include soybean raw materials, labor, energy, water, and supporting materials, while the output variable is the quantity of tofu produced. The novelty of this study lies in the integration of the non-pure DEA method with the Z-maximum and Z-minimum Linear Programming models in analyzing tofu production efficiency. The non-pure DEA analysis results showed an efficiency index value of 0.773, indicating that tofu production is relatively efficient, but still has room for efficiency improvement. The Linear Programming analysis results indicate that the production cost of Rp13,427,609.77 for producing 72,000 units of tofu is within the minimum operational limit. The maximum total revenue is Rp21,600,000, with a profit of Rp8,172,427.77 in one production period. Efforts to increase efficiency can be achieved through better management of soybean raw materials, increased energy efficiency, improved production processes, and enhanced workforce skills and discipline.

Keywords: *production efficiency, DEA, Linear Programming, tofu industry, production optimization*

Introduction

Background

The agribusiness sector has a strategic role in Indonesia's economic development because it is able to integrate agricultural production activities with processing industries, distribution, and marketing in a sustainable manner. According to FAO (2017), agro-industry development is key to increasing the added value of

agricultural products, creating employment, and strengthening national food security. This is in line with the opinion of Sjarkowi and Sufri (2018) who stated that agro-industry plays an important role in encouraging the efficiency of agricultural systems and increasing the competitiveness of local products.

One important sub-sector in the agribusiness system is agricultural

product processing agro-industry, including the tofu industry based on soybeans as the main raw material. Tofu is a processed food product that contains high vegetable protein, is relatively affordable, and has a high consumption rate in Indonesian society. According to BPS (2023), consumption of tofu and tempeh is still the main source of protein for most households, especially in urban and rural areas.

Saiful Tofu Factory in Bengkulu City is one of the small-medium scale agro-industries that operates sustainably in processing soybeans into tofu. However, small and medium industries (SMIs) generally still face various obstacles in production management, such as the use of simple technology, limited production management, and the absence of production planning based on quantitative analysis. Wibowo and Hidayat (2019) stated that most small agro-industries still carry out production processes conventionally, thus potentially causing inefficiency in input use.

Based on initial observations at Saiful Tofu Factory, it was found that there was wastage of soybean raw materials, less than optimal use of labor, and relatively high energy and water consumption. This condition indicates that production activities are not yet at an optimal level of technical and economic efficiency. According to Coelli et al. (2017), production inefficiency occurs when the combination of inputs used has not been able to produce maximum output or when production costs have not been reduced to a minimum level.

To overcome these problems, a quantitative analysis approach is needed that is able to provide optimal solutions systematically. Operations Research is an appropriate scientific approach to assist production decision-making through mathematical modeling. Taha (2017) explains that operations research is designed to determine the best

(optimal) decision by considering various existing resource constraints.

One of the main methods in operations research is Linear Programming (LP), which allows the formulation of production models with two main orientations, namely maximizing profit or output (Z maximum) and minimizing costs or input use (Z minimum). According to Hillier and Lieberman (2021), Linear Programming is very effective in production planning because it is able to determine the most efficient combination of inputs by considering constraints of raw materials, labor, and production capacity.

In addition, to measure the actual level of technical efficiency of the ongoing production process, the Data Envelopment Analysis (DEA) method is used. DEA is a non-parametric method used to assess the relative efficiency of a production unit based on the relationship between inputs and outputs. Cooper, Seiford, and Tone (2020) state that DEA is very suitable for evaluating the performance of small and medium enterprises because it does not require certain production function assumptions and is able to identify sources of inefficiency specifically.

By combining the Operations Research approach through the Z maximum and Z minimum models as well as Data Envelopment Analysis (DEA), this study is expected to provide a comprehensive picture of production efficiency while producing recommendations for optimal input combinations for Saiful Tofu Factory, Bengkulu City.

Problem Formulation

Based on the background, the problem formulation of this research is:

What is the level of technical efficiency of tofu production at Saiful Tofu Factory based on the DEA method?

How is the tofu production optimization model based on Linear Programming with the Z maximum and Z minimum approaches in producing the most

efficient combination of production inputs at Saiful Tofu Factory?

What strategies can be implemented to improve the efficiency of tofu production at Saiful Tofu Factory?

Research Objectives

To analyze the level of technical efficiency of tofu production using the Data Envelopment Analysis (DEA) method

To develop a production optimization model with the objective functions of Z maximum and Z minimum to determine the optimal solution for the use of production inputs at Saiful Tofu Factory

To provide strategic suggestions that can be implemented to improve production efficiency at Saiful Tofu Factory

Benefits of Research Theoretical Benefits:

This research is expected to contribute to the development of agribusiness science and production management, particularly in the application of Operations Research methods (Linear Programming with Z maximum and Z minimum approaches) and Data Envelopment Analysis (DEA) to analyze the production efficiency of small-medium scale food agro-industry.

Practical Benefits:

Practically, this research is expected to provide applicable recommendations for Saiful Tofu Factory, Bengkulu City in determining the optimal combination of production inputs, including the use of soybean raw materials, labor, energy, and water.

Research Methods

Research Location and Time

This research was conducted at Saiful Tofu Factory located on Jalan Tribrata, Cempaka Permai Village, Gading Cempaka District, Bengkulu City. The research was conducted from December 2025 to January 2026.

Data Collection Methods

This study uses two types of data:

a. Primary Data

Primary data were obtained directly from the field through interaction with parties involved in the tofu production process, including:

Owner or manager of Saiful Tofu Factory

Production workers

Primary data collection methods include:

Structured interviews

Direct observation

Questionnaires

b. Secondary Data

Secondary data were obtained from:

Department of Industry and Trade of Bengkulu City

Central Bureau of Statistics (BPS)

Scientific literature and previous research results

Internal documents of Saiful Tofu Factory

Respondent Determination Method

Respondents were determined using purposive sampling method with criteria of respondents who directly understand the production process. The respondents in this study consisted of:

Owner/manager of Saiful Tofu Factory (1 person)

Head of production section or foreman (1 person)

Production workers (11 people)

Total respondents were 13 people.

Data Analysis Methods

Efficiency Analysis with Non-Pure Data Envelopment Analysis (DEA)

Since the study only involved one business unit (1 DMU), a non-pure DEA approach was used with the formula:

$$\text{Efficiency} = Y / \sum X_i$$

Where:

Y = amount of tofu output

X_i = i-th production input

For easier interpretation, the efficiency value is transformed into an efficiency index (0–1):

$$\text{Efficiency Index} = Y / (Y + \sum X_i)$$

Assessment criteria:

Value close to 1: business is more efficient

Value close to 0: business is less efficient

Optimization Analysis with Linear Programming

Z Maximum Model (maximizing output):

Objective function: $Z \max = c_1X_1 + c_2X_2 + c_3X_3 + c_4X_4$

Constraints: limitations of raw materials, labor, energy, and water

$X_j \geq 0$

Z Minimum Model (minimizing costs):

Objective function: $Z \min = c_1X_1 + c_2X_2 + c_3X_3 + c_4X_4$

Constraints: Output $\geq$ production target

$X_j \geq 0$

Optimization analysis used Microsoft Excel Solver.

Results and Discussion

General Conditions of Research Location

This research was conducted at Saiful Tofu Factory located on Jalan Tribrata, Cempaka Permai Village, Gading Cempaka District, Bengkulu City. The location is a residential area that

develops with small and medium-scale economic activities, including household businesses and food processing industries.

Geographically, Cempaka Permai Village is located in the urban area of Bengkulu City with relatively good accessibility. Around the factory location, there is a river that plays an important role in supporting tofu production activities, particularly in meeting water needs for the soaking, washing, and soybean processing.

Respondent Characteristics

The respondents in this study consisted of:

1. Business Owner/Manager

The owner and manager of Saiful Tofu Factory has a high school education level. This tofu business has been operating since 2009, so the owner has more than a decade of business experience.

2. Production Workers

The number of workers is 11 people, with the following education levels:

2 people with junior high school education

9 people with high school education

All workers acquire skills through direct experience (learning by doing).

3.3 Efficiency Calculation Results with Non-Pure DEA Method

Input and output production data of Saiful Tofu Factory in one production period are presented in Table 1.

Table 1. Production Input and Output Data of Saiful Tofu Factory

Variable	Value	Unit
Soybeans (X_1)	1000	kg
Labor (X_2)	11	people
Electricity (X_3)	69.252	kWh
Wood (X_4)	2	m ³
Diesel Fuel (X_5)	10	liters
Water (X_6)	20000	liters
Cooking Oil (X_7)	20	liters
Vinegar (X_8)	3	liters
Salt (X_9)	1	kg
Tofu Output (Y)	72000	units

Source: Primary data 2026

Total input calculation:

$$\text{Total Input} = 1,000 + 11 + 69.252 + 2 + 10 + 20,000 + 20 + 3 + 1 = 21,116.252$$

Efficiency value calculation:

$$\text{Efficiency Value} = 72,000 / 21,116.252 = 3.41$$

This means that each unit of production input used is able to produce an output of 3.41 units.

Efficiency index calculation:

$$\text{Efficiency Index} = 72,000 / (72,000 + 21,116.252) = 0.773 \text{ or } 77.3\%$$

The efficiency index value of 0.773 or 77.3% indicates that tofu production at Saiful Tofu Factory is classified as efficient. However, there is still a potential efficiency increase of 22.7% that can be achieved through improvements in production management, input usage efficiency, improvement of worker skills, and application of more efficient production technology.

This result is in line with research by Ristiani et al. (2024) which stated that small and medium-scale tofu industries are generally quite efficient, but not yet fully optimal from a technical perspective.

Factors affecting efficiency include:

Less than optimal soybean soaking process (less than 30 minutes)

Less than effective worker performance

Need to improve management of imported soybean raw materials

3.4 Production Cost Optimization Results (Z Minimum) and Revenue (Z Maximum)

3.4.1 Production Costs Before Optimization

Based on initial calculations, the total production cost incurred to produce 72,000 units of tofu was Rp13,427,609.77. This value reflects the actual production cost conditions in the field before the optimization process.

Table 2. Production Cost Components Before Solver

Component	Amount	Unit Price (Rp)	Total Cost (Rp)
Soybeans	1000 kg	10,000	10,000,000
Labor	11 people	120,000	1,320,000
Electricity	69.252 kWh	1,444	100,000
Wood	2 m ³	700,000	1,400,000
Diesel Fuel	10 liters	10,000	100,000
Water	20,000 liters	0	0
Cooking Oil	20 liters	15,000	300,000
Vinegar	3 liters	33,000	99,000
Salt	1 kg	19,000	19,000
Depreciation Cost	-	-	48,513.88
Land & Building Rent	-	-	41,095.89
Total			13,427,609.77

Source: Primary data processed 2026

2 Z Minimum Optimization Results

After optimization with Excel Solver, all decision variables were mathematically zero because the cost optimization model without minimum production constraints would choose the lowest cost, which is zero. However, this result does not reflect actual production conditions because the production process cannot run without inputs.

By comparing production cost conditions before and after optimization, it can be concluded that the actual production cost of Rp13,427,609.77 is the **minimum operational cost** that must be incurred to produce an output of 72,000 units of tofu. This shows that operationally:

The business has been cost-efficient

There are no production inputs that can be reduced without decreasing the amount of production

Production cost savings cannot be achieved through reducing input quantities

This finding is in line with Heizer and Render (2017) who stated that optimization results do not always result in cost reduction, but can function to confirm that the production system is at optimal condition.

3.4.3 Z Maximum Optimization Results (Revenue)

Based on production data, the amount of tofu output produced in one production period is 72,000 units, with a selling price of Rp300 per unit.

Table 3. Total Revenue

Component	Amount (units)	Selling Price (Rp)	Total (Rp)
White Tofu	36,000	300	10,800,000
Fried Tofu	28,800	300	8,640,000
Pong Fried Tofu	7,200	300	2,160,000
Total	72,000		21,600,000

Source: Primary data processed 2026

Production is dominated by white tofu (50%) due to high market demand and simpler production process, followed by fried tofu (40%) and pong fried tofu (10%).

3.4.4 Business Profit

Profit = Z Maximum – Z Minimum

= Rp21,600,000 – Rp13,427,609.77

= **Rp8,172,427.77** per production period

This profit value indicates that Saiful Tofu Factory is able to generate significant economic added value in one production period. According to Fauzi et al. (2024), the greater the difference between revenue and production costs, the higher the level of business efficiency.

Production Efficiency Improvement Strategies

Based on the results of efficiency analysis using the non-pure Data Envelopment Analysis (DEA) method and the results of production cost and revenue optimization, the following strategies can be implemented to improve production efficiency:

1. Soybean Raw Material Management

Soybean raw material is the largest cost component in the tofu production cost structure.

In addition, most of the soybeans used are imported so their availability and prices are greatly influenced by international market conditions and exchange rates. Strategies that can be implemented:

Choose trusted suppliers to maintain supply stability

Ensure good soybean quality during storage

Control the use of raw materials to prevent wastage during the production process

Energy Efficiency Improvement

Uncontrolled energy use can cause cost wastage in the long term. Strategies that can be implemented:

Plan production time more systematically

Perform regular equipment maintenance to make fuel use more efficient

Consider using alternative energy such as palm kernel shells as a substitute for wood fuel

3. Production Process Improvement

More effective workflow arrangement can reduce waiting time between processes. Strategies that can be implemented:

Apply standard soybean soaking time (± 30 minutes) so that soybeans become softer and easier to grind

Standardize each production stage (soaking, grinding, boiling)

Maintain consistent tofu quality

Improvement of Worker Skills and Discipline

Workers who have good skills and understanding of the production process will be able to work faster and more efficiently. Strategies that can be implemented:

Conduct continuous skills training

Improve work time discipline

Avoid habits that can hinder the production process (too frequent breaks, smoking during working hours)

Conclusions and Suggestions

Conclusions

Based on the results of analysis and discussion, it can be concluded as follows:

Technical Efficiency Level (DEA Method)

The results of efficiency calculation using the non-pure Data Envelopment Analysis (DEA) method showed an efficiency index value of 0.773 or 77.3%. This means that tofu production at Saiful Tofu Factory is classified as efficient, but still has a potential efficiency increase of 22.7% through improvements in input management and production processes.

Production Optimization Model (Linear Programming)

Based on the results of analysis using the Linear Programming method, the actual production cost of Saiful Tofu Factory of Rp13,427,609.77 to produce 72,000 units of tofu has been at the minimum operational limit. The maximum total revenue obtained was Rp21,600,000, so the business profit reached Rp8,172,427.77 in one production period. Production is dominated by white tofu (50%), followed by fried tofu (40%) and pong fried tofu (10%), in accordance with the level of market demand.

Production Efficiency Improvement Strategies

Efforts to improve efficiency cannot be done through reducing production inputs, but through improving the production system, including:

Better management of soybean raw materials

Increasing energy efficiency through more economical fuel use or alternative energy

Improving production processes with clear work standards

Improving worker skills and discipline

Suggestions

Based on the research results, the suggestions that can be given are as follows:

Saiful Tofu Factory is advised to improve production efficiency through improving work processes and controlling input use, especially soybean raw materials which are the largest cost component.

Energy savings and management need to be done in a more planned manner, including considering the use of alternative energy such as palm kernel shells as a substitute for firewood, so that production efficiency can be improved in the long term.

Improvement of worker skills through continuous training and work experience needs to be done to support productivity and production quality. Workers are expected to work diligently and avoid habits that can hinder the production process.

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Forensic Accounting Practices and Development of Nigerian Economy: Evidence from Delta State Oil Producing Area Development Commission

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Abstract

Forensic accounting has emerged as a crucial tool in addressing financial irregularities, promoting accountability, and enhancing development outcomes in Nigeria's public sector. This study investigates the effect of forensic accounting on the growth and development of the Nigerian economy with evidence from the Delta State Oil Producing Areas Development Commission. The study adopts a quantitative methodology using secondary data from 2019 - 2023. Variables such as number of forensic audits conducted, financial irregularities detected, funds recovered, projects completed, employment generated, and community satisfaction were analyzed using the Statistical Package for Social Sciences. Descriptive and inferential statistical tools were employed in analyzing the data obtained. The regression result revealed a positive relationship between forensic accounting practices and development indicators. Similarly, forensic audit was found to significantly affect funds recovered, project completion rates, employment creation, and community satisfaction levels. The study concludes that forensic accounting contributes substantially to economic transparency, financial recovery, and socio-economic development and, by extension, Nigeria. The study recommends among others, the need for institutionalizing forensic practices across other development agencies to curb corruption and enhance sustainable development.

Keywords: Forensic accounting, Development, DESOPADEC, Financial recovery, Economic growth, Economic Development; Nigeria.

Introduction

In Nigeria, forensic accounting is becoming ever more identified as a critical mechanism for promoting economic development, especially in the fight against financial crimes and government transparency. On the other hand, economic growth has been significantly undermined by massive corruption and financial mismanagement (Adebaifo, 2023). One of the largest economies in Africa, Nigeria has been

struggling with corruption, leadership deficits and ineffective use of her enormous oil reserves. Over 80% of Nigeria's foreign exchange revenues come from the oil and gas industry that is marred by a history of unethical business practice, opaque transactions and lack of accountability (NNPC, 2020).

Financial impropriety and lack of transparency in government financial management have usually weakened the

effectiveness of government intervention to promote economic stability. DESOPADEC has reportedly been accused of embezzlement and mismanagement of funds, which calls into question the effectiveness of the current financial control mechanisms. This has contributed to a considerable misdirection of funds meant for development projects, thus stifling the growth and development of the Nigeria economy.

Despite Nigeria's immense oil wealth, corruption and mismanagement are some of the key challenges in the oil and gas sector that has impeded the economic growth and development of the nation (Egbe, 2018). The Nigerian government, in the last few years, has implemented a number of reforms directed towards ensuring accountability, transparency and good governance in the oil and gas sector. The creation of the delta state oil producing area development (DESOPADEC), a body that oversees the state's oil proceeds, is one such reform (DESOPADEC, 2020).

Forensic accounting, a professional accounting specialty applying accounting, auditing and investigation expertise to aid financial disagreements and identify fraudulence activities (AICPA, 2020), has been viewed as a prospective way out to identify and deter inefficiencies, mismanagement in the oil and gas industry. Forensic accountants can help to deepen transparency, accountability and good governance in the oil and gas sector (Okoye & Akamobi, 2015). Thus, using DESOPADEC as a focus, this study examined how forensic accounting affects the growth and development of Nigeria economy.

Review of Literature

Forensic Accounting

Because there are several authors that have written in this area of accounting literature, there are several definitions of forensic accounting. Consequently, there is no single definition that is regarded as the best. The term "forensic" is associated with the identification of crimes for the intention of improving financial investigation and preventing or mitigating financial misconduct in all its forms, science is

therefore applied to provide responses to queries arising from crime or litigation and therefore introduction in the accounting disciplines (Chepngeno and Fred, 2023).

As Yasmin (2023) defined it, forensic accounting is a profession that synthesizes auditing and investigative skills of accounting to identify financial frauds, detect discrepancies. It is not only applicable in the private sector, but also in the public sector to detect and prevent frauds, as attested by Akinadewo and Akinkoye (2020), who highlighted. Forensic accounting as a variable agent to combat fraudulent activities in the government sector. Forensic accounting has been very important in the corporate agenda since the financial reporting scandals that took place in various companies across the world like Enron, Tyco and world com.

Those scandals cost public confidence as well as a lot of money. To avoid fraud and theft, and to restore the seriously eroded public confidence, a few firms took the initiative of strengthening the infrastructure of their accounting and internal control system substantially. It was this transformation which contributed to the importance of accountants who have chosen to specialize in forensic accounting and hence are referred to as forensic accountants. Current research highlights the increased contribution of forensic accounting in addressing contemporary financial challenges.

By protecting the integrity of financial institutions from financial crimes, and offering expert testimony during court, forensic accounting is essential to the economic growth. The value of forensic accounting in the today's complex and worldwide economy cannot be overemphasized. By analyzing financial records, and detecting unusual transactions, forensic accountants help avoid financial crime like fraud, embezzlement, and money laundering forensic accountants help avoid government corporations and investors' trust in the financial system by detecting and preventing these types of crimes.

Furthermore, by assisting in the identification and deterrence of financial crimes that would hinder economic progress, forensic accounting also facilitates

economic development depends. Economic development is based on a safe and secure setting for investment and trade which forensic accountants assist in creating through preventing financial crimes. By assisting in detaining and averting financial crimes that would destabilize economic growth, forensic accounting also promotes economic growth. Economic growth is dependent on a safe and secure investment and commerce environment, which forensic accountants assist in achieving through the avertment of financial crimes.

Challenges Facing the Use of Forensic Accounting in Nigeria

Despite the immense potential of forensic accounting, there are challenges facing its use in Nigeria some of which are,

- (i) **Lack of Awareness and Comprehension:** There are a high number of stakeholders, from law enforcement officers to business owners who are not aware of the ides and advantages of forensic accounting.
- (ii) **Inadequate Funding:** Nigeria frequently lacks the substantial resource needed for forensic accounting investigation
- (iii) **Shortage of Qualified Personnel:** Nigeria is unable to provide enough forensic accountants because it lacks adequate experts.
- (iv) **Insufficient Legal and Regulatory Frameworks:** Forensic accounting practice is insufficiently backed by existing legal and regulatory frame works in Nigeria. For instance, there might not be the application of specific guidelines on the admissibility of forensic accounting evidence in court.
- (v) **Resistance to Change:** Acceptance of new technologies and practices may be difficult in Nigeria, as there are possibly imbedded traditions and beliefs.

Growth and Development of Nigeria Economy

Economic growth is the manner in which a country's wealth changes in the long term, according to John (2022). The term he

employed, is commonly employed in discussions of short-term prosperity from an economic standpoint, but in discussions of economic theory, is more commonly used to denote an accumulation of wealth over a period of time. A society's ability to produce a greater quantity of economic goods and services of better quality is referred to as economic growth, according to Roser (2021).

Amedo (2021) observes that the increase in per-capita income is a better indicator because it is what corresponds to in terms of output good and service increase. The term development up to now has implied growing defined in terms of gross National product (GNP), Gross domestic product (GNP) or rise in per capital income, but development is not growth. Development can be considered to be growth with social justice (Bassanini, Scarpetta & Hemmings, 2021). The Nigerian economy has grown and developed considerably with time; even though it has experienced a lot of challenges, there is proof of growth and development through the early years when the Nigeria economy was agricultural with Nigeria as a major producer of products like coco, palm oil and groundnuts (Adeyinka, 2007). The discovery of oil in 1956 and the oil boom of the 1970's transformed the Nigeria economy (Iwayemi, 2017). This consequently has led to a significant contribution towards the development and growth of the Nigeria economy.

Theoretical Framework

The theory was championed by Sulterland (1949) as cited in Micheal (2004). He put forward his theory in an address to American sociological society in efforts of studying two fields, crime and high society, with no empirical connection earlier. Sutherland illustrates that in his time, fewer than 2percent of the people committed to prison within a year belong to the upper class. He defined his idea as crime that is carried out by someone of high social statuses in pursuit of his career. He intended to show a connection between money, status and chances of being imprisoned for a white-collar crime in comparison to more visible customary crimes.

White-collar crimes have been estimated to go undetected or if detected go unreported because the criminals in these crimes are of high status. A highly trained and experienced investigator or examiner like the professional forensic accountant must be able to prevent such big-name fraud. In this research study, the theory will help in excavating DESOPADEC and determining all the financial crimes committed by high profiled individuals in the company and with this criminal, he can be sanctioned. Accordingly, and it will reduce the commission of such high-profile crimes which will contribute to coming up with the development and growth of DESOPADEC and the economy as a whole.

Methodology

This study used an *ex-post facto* design because it employed secondary data. Secondary data were collected from DESOPADEC annual reports and budget documents and other relevant reports and statistical bulletin of the Central Bank of Nigeria (CBN). Data were obtained on forensic accounting and economic growth. Variables such as number of forensic audits conducted, financial irregularities detected, funds recovered, projects completed, employment generated, and community satisfaction were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistical tools were employed in analyzing the data obtained.

Results

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max
Forensic Audits	5.00	1.58	3	7
Irregularities Detected (₦)	1,240.00	386.61	850	1,750
Funds Recovered (₦)	560.00	244.13	300	900
Projects Completed	22.00	5.83	15	30
Community Satisfaction (%)	57.20	11.42	42	73
Employment Generated	324.00	112.89	200	470

Source: Researchers' Computation via SPSS

The average number of forensic audits performed annually was 5.00, which equates to an average uncovering of ₦1.24 billion in financial irregularities. funds recovered annually averaged ₦560 million. Steady

improvement in the completion of projects, employment creation and satisfaction among the community were observed alongside audit activity.

Table 2: Pearson Correlation coefficients

Variables	Audits	Irregularities	Funds Recovered	Satisfaction	Project completed	Employment
Forensic Audits	1	0.98**	0.99**	0.99**	0.98**	0.98**
Irregularities Detected		1	0.99**	0.98**	0.97**	0.96**
Funds Recovered			1	0.99**	0.97**	0.97**
Community Satisfaction				1	0.98**	0.98**
Projects Completed					1	0.98**
Employment Generated						1

Source: Researchers' Computation via SPSS

Note: $p < 0.01$, therefore correlation is significant at 0.01 level (2-tails)

There is a strong, positive, and statistically significant relationship between forensic audits and Funds recovered ($r = 0.99$); Community satisfaction ($r = 0.99$); Projects completed ($r = 0.98$); Employment generated

($r = 0.98$). This implies that increased forensic audit activity is strongly associated with higher financial recovery, development delivery, and better socio-economic outcomes.

Table 3: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error
1	0.990	0.980	0.973	1.928

Source: Researchers' Computation via SPSS

The R^2 value $R^2 = 0.98$ indicates that 98% of the variation in community satisfaction is explained by forensic audits activities carried out.

The high adjusted R^2 confirms that the model's robustness despite the simple sample size.

Table 4: ANOVA Summary

Model	SS	df	MS	F	Sig.
Regression	580.05	1	580.05	155.86	.001
Residual	11.15	3	3.72		
Total	591.20	4			

Source: Researchers' Computation via SPSS

The F -value (155.86) and significance level (.001), indicates that the regression model is statistically significant.

Table 5: Regression Coefficients

Variable	Unstandardized coefficient B	Std. Error	Beta	t	Sig.
Constant	27.80	3.26		8.52	.003
Forensic Audits	5.90	0.47	0.990	12.48	.001

Source: Researchers' Computation via SPSS

The coefficient ($B = 5.90$) implies that for each additional forensic audit conducted by DESOPADEC leads to an approximate 59% increase in community satisfaction, holding all else constant. The regression is statistically significant at $p < .0$, suggesting that forensic accounting is a governance perception and development outcomes. These findings confirm prior research (Okoye & Gbengi 2013; Modugu & Anyaduba, 2013) and affirmed the value of forensic accounting in promoting public accountability and sustainable development.

Conclusion and Recommendations

In this research, the effect of forensic accounting on the growth and development of

Nigeria economy was examined. The study's aim was to investigate the link between the activities of forensic accounting and economic development indicators such as fund recovered, execution of community projects, creation of jobs and satisfaction of the people in the community. However, secondary data was used and analyzed with SPSS..

The key variables investigated are amount of forensic audits conducted, financial malpractices uncovered, monies recovered, projects implemented, audit effectiveness, jobs created, and satisfaction levels in host communities. Based on the analysis of data, the following findings emerged:

- (i) That forensic audits were positively correlated with the amount of recovered funds.
- (ii) The forensic audits had a strong correlation with indicators of development such as project completion and creation of jobs.
- (iii) Social satisfaction grew in tandem with increased financial transparency and audit efficiency.
- (iv) Regression analysis revealed that forensic audits highly predicted fund recovery and indirectly influenced other indicators of development.

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Brand Personality and Brand Identity as Determinants of Consumers Patronage of Non-Foreign Made Household Attires among Male Residents of Bayelsa State, South-South, Nigeria

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Abstract

This study investigated the influence of branding dimensions on consumer patronage of locally made attires, with particular emphasis on Brand Identity and Brand Personality. The growing preference for foreign-made products has generated concerns regarding the sustainability and competitiveness of indigenous fashion industries, thereby necessitating an empirical examination of the determinants of consumers' patronage of locally produced attires. A quantitative research design was adopted, and data were obtained from 200 respondents using structured questionnaires. The collected data were analyzed using descriptive statistics and multiple regression analysis. The formulated hypotheses were tested at the 0.05 level of significance to establish the statistical relationships among the variables. The results revealed that Brand Identity has a positive and statistically significant effect on Consumer Patronage of locally made attires ($\beta = 0.3476$, $p = 0.001$), leading to the rejection of the null hypothesis. Similarly, Brand Personality was found to exert a positive and statistically significant influence on Consumer Patronage ($\beta = 0.3876$, $p = 0.000$), resulting in the rejection of its corresponding null hypothesis. These findings indicate that both branding dimensions are significant predictors of consumer purchasing behaviour. Furthermore, the regression models were statistically significant, confirming their suitability for explaining variations in consumer patronage. The coefficients of determination further indicated that a substantial proportion of the variation in consumer patronage is explained by Brand Identity and Brand Personality, reflecting their strong explanatory capacity. The study concludes that effective branding constitutes a critical determinant of consumer patronage within the locally made attire industry. It recommends that producers and marketers strengthen brand identity and brand personality through improved product quality, consistent branding strategies, emotional appeal, and strategic promotional efforts.

Introduction

Consumer patronage behaviour has remained a major subject of scholarly inquiry within the fields of marketing, consumer psychology, and retail studies, particularly in emerging economies where trade liberalization and globalization have intensified competition between domestically manufactured goods and imported alternatives. Across many developing nations, consumers are increasingly exposed to international brands, digital retail platforms, and foreign lifestyle influences, all of which continue to reshape conventional consumption habits and purchasing preferences. According to Kotler & Keller (2021) & Schiffman & Wisenblit (2022), patronage decisions are shaped by an intricate combination of psychological, cultural, social, and economic factors, including perceived quality, symbolic meaning, price considerations, brand credibility, and social identity.

Within the Nigerian market environment, the increasing influx of foreign products particularly fashion items, footwear, textiles, and household attire has significantly transformed consumer preferences and buying behaviour. Imported clothing from countries such as China, Turkey, Italy, and the United Kingdom frequently dominates urban retail outlets and is often perceived as more stylish, durable, and prestigious than locally produced substitutes. Recent empirical studies reveal that country-of-origin effects, perceived product quality, brand reputation, design sophistication, and technological finishing significantly influence purchase intentions within fashion markets (Etuk & Udonde, 2022; Akinyele & Bassey, 2023; Okeke et al., 2024). Nigerian consumers' commonly associate foreign-made apparel with superior standards, modernity, and status value, whereas locally produced garments are sometimes perceived as lacking standardization, innovation, and long-term durability.

Such perceptions have contributed to a sustained bias against domestically produced clothing despite several government initiatives aimed at encouraging the consumption of indigenous products through

“Made-in-Nigeria” patronage campaigns. Reports from the Federal Ministry of Industry, Trade and Investment (2023) indicate that local manufacturers continue to experience weak domestic demand, largely due to unfavourable consumer stereotypes and strong foreign competition. In a similar vein, studies by Enyia & Emelah (2018), Iyiola et al. (2018), and Olorunniwo & Adebayo (2023) observed that low patronage of locally made goods is associated with declining consumer confidence, infrastructural deficiencies, inconsistent quality assurance, weak branding efforts, and limited market visibility. Moreover, researchers such as Udegbe (2016), Agu & Onuoha (2016), Eze & Nkamnebe (2021), & Bello et al. (2024) maintain that variables including product fit, affordability, price sensitivity, aesthetic appeal, social influence, and perceived value significantly determine patronage behaviour in fashion markets. Consumers are generally more inclined to purchase clothing items that combine comfort, durability, uniqueness, and reasonable pricing. Additionally, social media exposure and celebrity endorsements now exert growing influence on fashion consumption patterns among younger and middle-aged consumers in Nigeria (Adewale & Yusuf, 2024).

In the context of Bayelsa State, where indigenous culture and traditional dressing remain socially significant, examining the determinants of patronage for non-foreign (locally made) household attire is particularly important. Bayelsa possesses a rich cultural heritage characterized by strong attachment to native fabrics, ceremonial male clothing, and identity-driven dressing patterns. Male consumers within the state often weigh cultural identity, economic realities, prestige considerations, and functional utility when making clothing choices. Traditional outfits such as senator wear, native kaftans, wrappers, and embroidered shirts are commonly worn during festivals, weddings, religious ceremonies, and political gatherings.

Recent studies further suggest that consumers within the Niger Delta region increasingly assess clothing purchases not only on

economic considerations but also on symbolic relevance, ethnic pride, and social recognition (Tamuno & Douglas, 2022; Ebiye & Selekere, 2024). Consequently, patronage of locally made household attire among male residents of Bayelsa State may be shaped by income level, product quality, tailoring craftsmanship, cultural loyalty, pricing, peer influence, and access to local fashion designers. A clearer understanding of these determinants is therefore essential for promoting indigenous entrepreneurship, strengthening local textile value chains, generating employment opportunities, and advancing regional economic development. Despite continuous advocacy for the patronage of locally manufactured products in Nigeria, empirical evidence suggests that a substantial proportion of consumers particularly urban male buyers still demonstrate stronger preferences for imported clothing items. This tendency is largely influenced by deeply rooted perceptions that foreign-made apparel possesses superior quality, greater durability, better aesthetic appeal, and higher social prestige. As a result, imported garments are frequently perceived as symbols of status, sophistication, and modernity, whereas locally produced alternatives are often undervalued regardless of their practical usefulness or improving standards.

The consistently low patronage of locally made attire carries important socioeconomic implications. First, it restricts the growth, competitiveness, and sustainability of indigenous textile and fashion industries by reducing domestic demand and discouraging investment in local production. Second, it limits employment creation opportunities throughout the production and distribution chain, including textile manufacturing, tailoring, merchandising, logistics, and retailing activities. Third, it weakens broader economic sustainability by increasing dependence on imported goods, stimulating capital outflow, and diminishing the contribution of local enterprises to national income, industrial expansion, and economic diversification. Previous studies further indicate that many Nigerian consumers

remain reluctant to purchase locally branded products, leading some manufacturers and retailers to package or market their goods as foreign-made in order to secure greater consumer acceptance. This pattern demonstrates the depth of consumer bias against domestic brands and the persistent credibility challenges facing indigenous producers. In addition, weak consumer confidence and unfavourable perceptions of local products continue to endure despite noticeable improvements in product quality, design creativity, and manufacturing standards in recent years.

Although an expanding body of literature has examined consumer preferences for local versus imported goods, limited empirical attention has been given to male consumers in Bayelsa State and their patronage behaviour toward non-foreign household attire. This represents an important research gap, particularly considering the cultural significance of traditional male clothing and the growing local fashion market within the state. Consequently, there is a compelling need for a systematic investigation into the factors shaping such patronage behaviour in order to provide evidence-based recommendations for producers, marketers, and policymakers.

Objectives of the Study

General Objective

To examine the determinants of consumers' patronage of non-foreign made household attire among male residents of Bayelsa State.

Specific Objectives

To assess the influence of brand personality on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State.

To determine the effect of brand identity on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State.

Research hypotheses

The guide the realization of the above stated objectives, the following null form hypotheses were postulated.

H₀₁: There exist no significant relationship between brand personality on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State.

H₀₂: brand identity does not exert significant influence on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State

Review of Related Literature

Brand Personality

In recent times, the concept of brand personality has attained enormous importance within the successful management of brands. With a view to better satisfy their customers' needs and to establish long-term consumer-brand relationships, Companies position their brands with unique personalities (Weis & Huber, 2000). Brand personality is a concept within the field of relational marketing and it is defined as a set of human characteristics associated to a brand (Aaker, 1997 as cited by Anees & Thyagaraj, 2015). According to theories of animism, brands can also have their own personality. In fact human beings aspire to personify objects so as to help their interactions with the intangible world. The perceptions of the brand personality traits are created through all direct or indirect contacts that consumers have with a brand (Plummer, 1984 as cited as Anees & Thyagaraj, 2015). The concept of brand personality offers a major managerial advantage.

Giroux, Pons & Maltese (2017) stated that consumers consider brand personality while studying and reacting to the advertising strategies. In fact, the compatibility between brand personality and the selected marketing strategy positively affects consumer perceptions and brand equity. Freling & Forbes (2005) also stated that a strong, unique and desirable understanding of brand personality can lead to a set of unique and appropriate brand images, as a result, it creates the potential capacity in order to influence the total equity. Dimitra, Kyriaki,

Kostas & Nikos (2019) declared that brand personality positively and significantly affects the attitudinal loyalty of fans. Muhammad, Muhammad, Jin & Tahir, (2018) also stated that brand personality mediates the relationship between brand experience and brand equity, which shows that brand personality can affects the brand equity as a mediator (Akbar, Mohammad, Rasoul & Marjan, 2020).

Considering the importance and stand of the consumer in the market, customer acquisition and retention can be accounted as one of the most important issues in marketing activities in brand valuation (goods and services) (Akbar, et al 2020). Given the above-mentioned topics, it can be said that the brand authenticity and brand personality are two components that can affect the brand equity. Considering the importance and stand of the consumer in the market, customer acquisition and retention can be accounted as one of the most important issues in marketing activities in brand valuation (goods and services) (Akbar, et al 2020).

Brand personality can also help customers transfer product features and create functional benefits for customers. Brand personality is an important issue because consumers may choose a brand just because of their personality earlier than other brands. This suggests that the attribution of personality to the brand has attracted the attention of many researchers in the field of communication, especially in the 1980s and 1990s, and they believed that brands and products have characters that can be built or destroyed the bazaar (Joudzadeh, Nadaf, Darzin, Azizi & Hashemi, 2015). Allocating human characteristics to inanimate objects can pave the way for brands to have human characteristics as well. Thus, branding literature links human-like characteristics to commercial brands. Companies that properly use brand personality as part of their overall positioning strategy can have a much greater impact on consumer perceptions than other gradual and more sustainable ways of communicating strategies (Razgardani & Eivazi, 2020).

Today, many companies are looking to attract the attention of their customers. One way to achieve this goal is to examine consumer behaviour. Achieving sustainable competitive advantage for companies has made consumer behaviour a component of key priorities of today's companies. In general, companies can differentiate their products from competitors by focusing on physical characteristics such as taste, design, and physical fitness, such as price, brand, and country of origin, based on the needs and wants of consumers (Razgardani & Eivazi, 2020). Branding is one of the most powerful tools for differentiating. Branding enables the manufacturer to gain the benefits offered by products of unique and excellent quality and also provides an opportunity to transfer these identifiable relationships to other products and services (Razgardani & Eivazi, 2020). Branding creates a competitive advantage because the brand reflects the quality of the quality and commitment to the buyer, which, like special features, encourages consumers to buy branded products/ services (Karimi, Gholipour & Amrayi, 2015).

In addition, due to the increasing variety of products, every consumer, regardless of the type of product, is faced with a huge flood of brands. Brand managers need to make appropriate and comprehensive efforts in characterizing their brands and introducing them as a reliable virtual personality that has the ability to become a communication partner (Darvish, 2011). Specifically, brand personality reflects consumers' identification of real self (Beverland & Francis, 2010). Sun & Li (2016) argued that brand personality can be clearly described by consumers or can clearly express consumers themselves, consumers will have a positive attitude towards the brands. Huang & Lai (2017) stated that the link between brand personality and consumer self-concept will be different due to different brand personality. Lee & Li (2018) pointed out that preference of positive brand personality by consumers will affect their behaviour and self-esteem.

Brand Identity

Kotler & Keller (2012) posited that brand identity is a name, term, sign, symbol, design, combination of these, intended to identify goods or services from a seller or group of sellers to differentiate goods or services from competitors. Brand identity can be in the form of signs or symbols that can provide the identity of certain goods or services which can be in the form of words, pictures or can combine both. By giving a brand, it will be easier for consumers to distinguish products or services produced by a company. Brand identity plays an important role in the sale of a product because if a brand that is positioned in the market has a good image, then it will be one of the drivers to grow consumer purchase intention. Brand identity is what is meant by a brand and how it is felt in the world. Those are the words, thoughts, and images that come to mind when consumers engage with a brand and how it can make consumers feel it (Catur, Sengguruh & Ani, 2020).

A prestigious brand is not only enjoys a proper quality but also is used for flaunting uses. More prestigious and popularity is a brand, more self-enhancement feeling among customers. Hence, more a brand is distinctive and prestigious; it increases more customers' satisfaction (He et al, 2011). Companies which provide integrated and distinguished brand identity can dominate the market, add to the value of their products and services, and may achieve advantages through price leadership. Contrary to managers opinions who say that brand identity should be stable over time, Da Silverira *et al* (2011) stated since the environment is highly dynamic and ever-changing, brand identity should be also dynamic and developed overtime. Brand identity is a completely dynamic process and should be developed overtime by bilateral impacts of brand managers and other social elements (i.e. consumers). By their identity, brands are recognized by customers and are distinguished from rivals. Yo *et al*, (2017) pointed out that brand identity is to strengthen emotional connections when consumers believe that brands can enhance or reflect a certain level of self-concept. Yeh (2017)

believes that consumer identity allows consumers to view corporate brands as segment of their self-extension. Chien & Chen (2017) pointed out brand identification

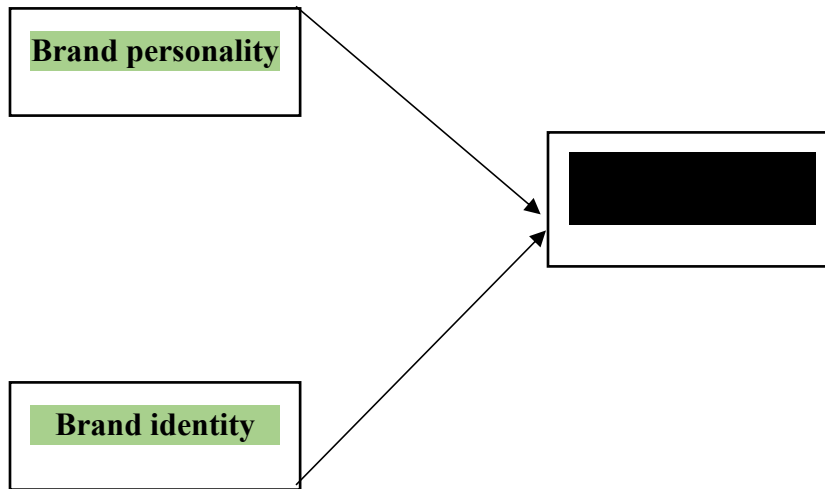
can be defined as a personal commitment, and emotional involvement with a brand which incorporates psychological and behavioural aspects.

Conceptual Model

Figure 2.1 is an illustration of how brand credibility, customer brand relationship, brand

personality and brand identity as dimensions of brand image influence customer's consumptions.

Independent Variables



Sources: Researcher's Model (2026)

Figure 2.1: Conceptual model of components and their hypothesized relationships.

Brand Personality and Consumers patronage

Brand personality has attracted substantial scholarly attention as it provides a valuable framework for understanding how relationships between brands and consumers are initiated, nurtured, and sustained over time. It provides insight into the emotional and symbolic bonds that consumers develop with brands beyond their functional usefulness (Gouteron, 2008). In addition, brand personality aids to describe how consumer brand relationships influence attitudes, satisfaction, loyalty, advocacy, and repeat purchase behaviour (Ambroise, 2006). More recent studies further indicate that brands perceived as possessing clear, distinctive, and relatable personalities are more likely to generate stronger engagement, emotional attachment, and enduring customer commitment (Keller, 2021; Japutra & Molinillo, 2023).

Brand personality refers to the set of human characteristics or traits associated with a brand. These characteristics may include sincerity, excitement, competence, sophistication, and ruggedness, as originally conceptualized by Jennifer (1997). By assigning human-like qualities to products and services, organizations are capable to create more meaningful and memorable brand identities that resonate with target consumers. This process of humanization enables consumers to relate to brands in ways comparable to interpersonal relationships, thereby strengthening trust, familiarity, and emotional closeness. The functional benefits of a product can also be effectively communicated through brand personality. Rather than depending solely on direct claims relating to performance, quality, or utility, marketers often embed such attributes within the personality of the brand itself. Consequently, brand personality serves as a

symbolic vehicle through which product-related utilitarian benefits and desirable brand attributes are conveyed (Anees & Thyagaraj, 2015). For example, a brand positioned as competent may communicate reliability and efficiency, whereas a sophisticated brand may signal prestige and premium quality. Functional benefits therefore become more persuasive when expressed through a compelling and consistent brand personality than when communicated through purely rational appeals (Aaker, 1996, as cited in Anees & Thyagaraj, 2015). Recent evidence also suggests that emotionally framed brand messages exert stronger influence on consumer evaluations than messages based solely on factual information (Dwivedi, Johnson, & Wilkie, 2022).

Furthermore, consumers frequently use brands as symbolic resources for expressing self-identity. A selected brand may reflect an individual's actual self-concept or represent an aspirational identity that the person desires to project. Consumption behaviour, including the selection of particular brands, often communicates personal values, lifestyle orientation, social class, and personality characteristics. In this regard, brands function as reflective symbols of the consumer's self-image (Anees & Thyagaraj, 2015). Scholars such as Belk (1988) and Escalas & Bettman (2005) similarly argue that consumers tend to prefer brands that align with their self-concepts because such brands reinforce identity consistency and a sense of social belonging. This symbolic role of brands is particularly evident in industries such as fashion, cosmetics, automobiles, and technology, where products frequently carry strong social and psychological meanings. For instance, a consumer may prefer a specific clothing label because it conveys elegance, youthfulness, professionalism, or cultural relevance. Recent studies in emerging markets reveal that younger consumers increasingly choose brands that enhance online identity and social media image, thereby extending the significance of brand personality into digital environments (Chopra, Avhad, & Jaju, 2024).

A strong and well-defined brand personality offers numerous strategic advantages. It can strengthen consumer preference, stimulate positive emotions, enhance trust, improve customer loyalty, and provide a sustainable basis for product differentiation (Freling & Forbes, 2005). It may also reduce perceived risk, particularly in markets where consumers face uncertainty regarding product quality or performance. When a brand's personality is perceived as authentic and consistent across multiple touch points, consumers are more likely to develop favourable attitudes and maintain repeat patronage. Moreover, congruence between brand personality and consumer personality often results in more stable purchase behaviour. When consumers believe that a brand reflects who they are or who they aspire to become, they are more likely to remain committed to that brand over time. This phenomenon, commonly referred to as self-congruity, has been associated with stronger purchase intention, emotional attachment, and positive word-of-mouth communication (Sirgy, 2018; Islam & Rahman, 2023). Therefore, when brand personality aligns with customer self-image, consumers can reasonably be expected to demonstrate greater consistency in their purchasing decisions (Freling & Forbes, 2005).

In highly competitive markets, particularly those involving locally manufactured goods, developing a compelling brand personality has become increasingly important. Indigenous firms that successfully establish brands perceived as trustworthy, stylish, innovative, or culturally authentic are more likely to overcome negative stereotypes and compete effectively with imported alternatives. Thus, brand personality remains a vital strategic mechanism for strengthening consumer relationships, enhancing market acceptance, and sustaining long-term organizational performance.

Brand Identity and Customers patronage

Consumers frequently engage in processes of social comparison, often using brands as expressive instruments to differentiate

themselves from others within various social contexts. In many instances, individuals deliberately construct and communicate their identities through the brands they select, consume, and display (Shen, Chiou, Hsiao, Wang, & Li, 2016). From this standpoint, brand consumption extends beyond functional utility and becomes a symbolic act that reflects personal identity, lifestyle orientation, and social positioning. Contemporary studies further reinforce the argument that consumers increasingly rely on brands to construct both digital and offline identities, particularly in highly visible consumption domains such as fashion, technology, and lifestyle products (Tajvidi, Richard, Wang, & Hajli, 2020; Loureiro & Sarmiento, 2021).

Within this framework, distinctiveness is conceptualized as the perceived uniqueness of a brand's identity, and it plays a central role in shaping consumer identification with that brand. A distinctive brand identity enhances perceptions of exclusivity and facilitates differentiation from competing alternatives in highly saturated markets. The need for uniqueness has long been recognized as a significant psychological driver of consumer behaviour, forming part of individuals' efforts to maintain or enhance self-esteem through differentiated consumption choices (Snyder & Fromkin, 1977, as cited in Yolanda, Dini, & Mangku, 2017). Extending this perspective, Tepper, Bearden, & Hunter (2001) identified two related dimensions of uniqueness motivation: the desire for personal distinctiveness, reflected in individual identity expression, and the perceived distinctiveness of brands themselves. Collectively, these dimensions suggest that consumer motivation is shaped not only by internal self-concept needs but also by external brand attributes that signal exclusivity, originality, and social differentiation. More recent studies similarly confirm that consumers with a strong need for uniqueness are more inclined to prefer rare, niche, or less commonly used brands as a means of reinforcing individuality and avoiding social conformity (Mimouni-Chaabane & Volle, 2022).

Brand identity has increasingly gained prominence in marketing scholarship, although earlier studies devoted comparatively limited empirical attention to the concept (DaSilveira *et al.*, 2011). It refers to the set of meanings, values, and associations that define how a brand is perceived and distinguished in the minds of consumers. As such, brand identity provides a strategic foundation for positioning, communication, and the development of long-term brand equity. Empirical evidence suggests that a strong and coherent brand identity significantly enhances customer satisfaction by aligning consumer expectations with perceived brand promises and actual experiences (He *et al.*, 2011). Furthermore, more distinctive and prestigious brands are generally perceived as more attractive and desirable, as they convey higher social value and symbolic meaning (Bhattacharya & Sen, 2003). This observation is particularly relevant in contemporary markets where consumers increasingly seek brands that combine functional utility with social distinction. Recent studies also indicate that brand distinctiveness contributes to stronger emotional attachment, perceived authenticity, and greater willingness to engage in brand-supportive behaviours such as advocacy, loyalty, and repeat purchase (Keller & Swaminathan, 2020; Orth & Rose, 2023). Brand identity also plays a crucial role in satisfying consumers' need for uniqueness and exclusivity. Individuals inherently strive for differentiation, and brands that project a clear and distinctive identity are better positioned to fulfil this psychological need. When a brand is perceived as unique, consumers are more likely to develop stronger emotional, attitudinal, and behavioural commitment toward it (He *et al.*, 2011). Contemporary evidence further suggests that brand uniqueness not only strengthens emotional attachment but also enhances perceived self-congruity and long-term loyalty, particularly within highly competitive consumer markets (Zhang, Liu, & Wei, 2022). Overall, the literature consistently demonstrates that brand identity as well

distinctiveness are key determinants of consumer behaviour. Brands that effectively communicate uniqueness and exclusivity have higher tendency to attract attention, enhance consumer identification, and foster enduring relationships across both traditional and digital consumption environments.

Theoretical Framework

Flow Theory

Flow refers to a highly immersive psychological state that emerges when individuals are deeply engaged in an activity, experiencing effortless concentration and intrinsic enjoyment. It is characterized by complete absorption in the task at hand, heightened focus, reduced self-consciousness, and an overall sense of optimal experience (Mihaly Csikszentmihalyi, 2000). In this state, individuals often lose track of time and external distractions, becoming fully involved in the activity consequence to its inherent interest and rewarding nature. Flow theory, as advanced by Csikszentmihalyi (2000) & Csikszentmihalyi & LeFevre (1989), explains that this optimal experience occurs when there exist a perceived balance between the degree/level of challenge in a task and the individual's skills to meet those challenges. When task demands are neither too simple nor excessively difficult, and when personal abilities are adequately developed to cope with those demands, individuals have high disposition to experience flow. This balance creates a state of psychological harmony that enhances engagement, motivation, and performance.

Typically, flow is associated with several core dimensions, including intense concentration on the activity, a merging of action and awareness, a loss of self-consciousness, a distorted perception of time, and a strong perception of control over the task. It is also characterized by intrinsic enjoyment, where the activity becomes rewarding in itself as opposed to being driven by external outcomes or rewards. In relation to the present study, flow theory is highly relevant for understanding consumer engagement behaviour, particularly in contexts where

individuals interact intensively with products, services, or brand-related experiences. When consumers feel their interaction with notable brand including evaluating products, engaging with marketing content, or making purchase decisions as both enjoyable and appropriately challenging, they are more likely to experience deep engagement. This heightened engagement can improve attention to brand information, strengthen emotional connection, and increase the likelihood of favorable evaluations and purchase intention.

Furthermore, flow provides a useful explanatory lens for understanding why some consumers develop stronger attachment to certain brands or consumption experiences than others. When brand-related interactions are interactive, stimulating, and well-aligned with consumer skills and expectations, individuals have higher tendency to enter a flow state, which in turn enhances satisfaction and positive behavioural outcomes. In marketing contexts, this may translate into increased brand loyalty, repeat patronage, and positive word-of-mouth communication. Therefore, integrating flow theory into the present study offers a valuable psychological framework for explaining variations in consumer behaviour, particularly in how individuals process brand-related stimuli, sustain engagement, and ultimately form preferences within competitive product markets.

Brand Congruence Theory

The theory of brand congruence posits that consumers tend to experience greater satisfaction and psychological comfort when their chosen brands align with their actual self-concept or their ideal/desired self-image (Grubb & Grathwohl, 1967; Sirgy & Su, 2000). Although the theory recognizes both the actual and ideal selves, two central motivational forces underpin brand congruence: self-consistency and self-esteem (Alpert & Kamins, 1995; Sirgy, 1982). Self-consistency reflects an individual's motivation to behave in ways that are consistent with their established self-concept, thereby maintaining internal psychological

stability. In contrast, self-esteem motivation drives individuals to enhance and affirm a positive self-image, often by seeking distinction and personal significance in their choices. As a result, a dynamic tension exists between self-consistency and self-esteem motives, both of which shape consumer decision-making processes (Sirgy, 1982; Snyder & Gangestad, 1986). While self-consistency encourages individuals to avoid behaviours and product choices that conflict with their self-concept, self-esteem motivates them to pursue options that enhance their perceived uniqueness and social value.

This tension becomes particularly relevant in the context of the need for uniqueness (NFU), where consumers strive to construct and express an idealized and distinctive self-image. Individuals with a strong NFU have increase tendency to prioritize uniqueness-seeking goals and avoid products or brands that, although consistent with their self-concept, are widely adopted by others. In such cases, even self-congruent brands can/may be rejected if they fail to advance a focus of differentiation or exclusivity. Accordingly, brand congruence operates in a complex manner. In other words, similarity between the consumer's self-concept and a brand may enhance satisfaction by reinforcing a sense of identity affirmation and personal distinctiveness. On the other hand, when such brands are widely consumed within a social group, they may lose their perceived uniqueness, thereby weakening their appeal among consumers with a strong NFU. In such situations, consumers may deliberately avoid otherwise self-congruent brands if they no longer contribute to feelings of exclusivity or personal distinction.

Consequently, while brand similarity can initially support consumers' need for uniqueness by reinforcing identity expression, excessive diffusion of the same brand around a social group may generate the opposite effect, reducing desirability and encouraging avoidance behaviour. This highlights the paradoxical impact of brand congruence in influencing consumer preferences, particularly among individuals who place

high value on uniqueness. Furthermore, unless a brand actively supports consumers' desire for individuality and differentiation, it risks being perceived as generic and indistinguishable from competing alternatives (Puzakova & Aggarwal, 2018). The manifestation of uniqueness also varies across consumption contexts. For instance, consumers purchasing hedonic products have the likelihood to exhibit uniqueness-driven preferences compared to those purchasing utilitarian goods, as hedonic consumption is more closely related with personal pleasure, identity expression, and emotional satisfaction (Whitley, Trudel, & Kurl, 2018).

In addition, consumers experiencing incidental pride tend to seek products that allow them to showcase achievements, status, or desirable personal attributes, thereby reinforcing their sense of uniqueness (Huang, Dong, & Mukhopadhyay, 2014). Moreover, the need for uniqueness is closely linked to consumer involvement and product knowledge; individuals who are more knowledgeable and emotionally invested in a product distinction have the likelihood to select brands that reinforce their distinctiveness and identity expression (Bhaduri & Stanforth, 2016). Overall, the literature demonstrates that brand congruence, self-concept motivation, and the need for uniqueness interact in complex ways to shape consumer behaviour, particularly in contexts where identity expression and social differentiation are central to purchasing decisions.

Materials and Method

This study employed a survey research design. The survey method involves the use of a structured questionnaire designed to elicit relevant information from respondents in a systematic manner. Beyond mere data collection, survey research is aimed at uncovering meaning within the data so that findings can be properly interpreted, explained, and understood within the context of the study objectives. The design was considered appropriate because it facilitates the collection of data from a defined

population or representative sample using instruments such as questionnaires, interviews, or other standardized data-gathering tools. It is particularly suitable where the study involves a relatively large number of respondents drawn from a broader population, allowing for generalization of findings based on sampled evidence. This study was carried out in Yenagoa local government area.. The most widely developed and industrialized hub in Bayelsa State. It also serve as the capital, hosting major government administrative and commercial infrastructures of the state. Hence it was considered fit for this study. Primary data was elicited through a 15-item questionnaire clearly put together to generate information on the effect brand personality and brand identity consumers patronage of non-foreign made household attires. That is, to ascertain whether or not brand identity and brand personality contribute to consumer preference for non-foreign attires. The instrument used was structured after the 5-point Likert type scale. A sample size of 250 respondents was randomly chosen from the study selected population resources.

Questionnaire was thereafter distributed to them for the purpose of eliciting their thought on the above subject matter. Apparently, out of the 250 administered questionnaire, two hundred only (200) were fully completed and returned and found useful for the study. To keep the tradition of strong empirical study outcome and reliability, prior to the distribution of the instrument, it was pilot examined. Table 1therefore present shows the outcomes of the Cronbach Alpha examination. As indicated, number of items scaled in the questionnaire were 15. This comprised of 5 items designed to generate information on respondents' demographics, and 10 items were used to gather information on the basic subject areas of the research. That's. Brand personality, brand identity and consumers patronage of non-foreign made household attires. The Alpha coefficient obtained from the test of reliability was 0.860, which is higher or above the 0.70 threshold. Owing to the outcome obtained, it implies that the study instrument is internally consistent, reliable and fit.

Table 1: Results for Reliability test scale

Variable	Ave Interim Cov.	Items in Scale	Alpha Value	Remarks
Brand identity	0.3305	5	0.8537	Reliable
Brand personality	0.2937	5	0.8633	Reliable
Consumers patronage	0.5830	5	0.8630	Reliable
Overall test scale		15	0.860	Reliable

Source: *Field Survey, (2026).*

Table 2: Demographics information of respondents

Variable	Category	Frequency(n=112)	Percentage (%)
Respondents Gender characteristics	Male	75	37.50
	Female	125	62.5
	TOTAL	200	100
Marital status of Respondents	Married	146	73
	Single	40	20
	Others	14	7
	TOTAL	200	100

Respondents Age bracket	18-25 years	23	11.50
	26-35 years	42	21
	36-45 years	80	40
	46-55 years	38	19
	56 years and above	17	8.50
	TOTAL	200	100
Years of patronizing locally made attires	1-12 months	18	9
	2-5 years	40	20
	6-15 years	88	44
	20 years and above	54	12.50
	TOTAL	200	100
Respondents Educational disposition	FSLC/SSCE	21	10.50
	NCE/OND	59	29.50
	HND/BSc/PGD	68	34
	MSc/MBA,MPA	52	26
	TOTAL	200	100

Source: *Field Survey, 2026.*

Table 2 presents the demographic profile of the respondents included in the research. Specifically, the analysis examines respondents' gender, marital status, age distribution, duration of patronage of locally made attires, and educational qualifications. These demographic variables provide valuable insights into the characteristics of the sampled population and enhance the understanding of consumers' patronage behaviour toward locally produced household attires. The analysis indicates that, from the 200 respondents surveyed, 75 respondents, representing 37.5%, were male, while 125 respondents, accounting for 62.5%, were female. This finding demonstrates that female respondents constituted the majority of the study participants. The predominance of female respondents may be attributed to their relatively higher involvement in the selection, purchase, and utilization of household attires within the study area. It further suggests that women may exhibit greater interest and participation in the patronage of locally produced attires compared to their male counterparts. The result further reveals that 146 respondents, representing 73%, were married, while 40 respondents, representing 20%, were single. In addition, 14 respondents, accounting for 7%, fell within other marital

categories such as divorced, separated, or widowed. The finding indicates that married individuals formed the largest proportion of the respondents sampled for the study. This outcome implies that marital status may influence consumers' acquiring decisions and consumption patterns, particularly with respect to household attires, as married individuals have higher likelihood to make clothing-related purchases to meet family and domestic needs. Regarding age distribution, 23 respondents, representing 11.5%, were within the age bracket of 18-25 years, while 42 respondents, representing 21%, fell within the 26-35 years category. Furthermore, 80 respondents, accounting for 40%, were between 36-5 years, whereas 38 respondents, representing 19%, were within the 46-55 years age bracket. Lastly, 17 respondents, representing 8.5%, were aged 56 years and above. The analysis reveals that respondents within the 36-45 years age category constituted the largest segment of the study population. This posits/suggests that middle-aged consumers are more actively engaged in the patronage of locally made attires, possibly due to increased purchasing power, family responsibilities, and stronger cultural attachment to indigenous products. The findings relating to respondents' years of

patronage of locally made attires show that 18 respondents, representing 9%, had patronized locally made attires for a period of 1-12 months, while 40 respondents, representing 20%, had done so for 2–5 years. In addition, 88 respondents, accounting for 44%, indicated that they had patronized locally made attires for 6-15 years, whereas 54 respondents, representing 27%, had maintained such patronage for 20 years and above. The result demonstrates that a considerable proportion of the respondents had extensive experience in purchasing locally produced attires. The predominance of respondents within the 6-15 years category reflects sustained consumer loyalty, familiarity, and confidence in locally manufactured attire products. The educational profile of the respondents reveals that 21 respondents, representing 10.5%, possessed FSLC/SSCE qualifications, while 59 respondents, representing 29.5%, held NCE/OND certificates. Similarly, 68 respondents, accounting for 34%, possessed HND/BSc/PGD qualifications, whereas 52

respondents, representing 26%, had MSc/MBA/MPA degrees. The result indicates that the majority of the respondents possessed tertiary educational qualifications. This advances that educated consumers constituted a substantial proportion of the study population and may possess greater awareness, understanding, and appreciation of the quality, value, and economic importance of patronizing locally made attires.

Model Specification and Explanations

We designed this study to evaluate the effect of brand identity and Brand personality on consumer patronage of locally made attires in Southern Nigeria. In other words, consumer patronage is a direct function of brand identity and Brand personality. The above constructs (variables independent (brand identity and Brand personality) and dependent (consumer patronage) of the study) are therefore constituted into a model stated algebraically as follows:

$$\text{Consumer patronage} = f(\text{Brand identity and Brand personality}) \quad \text{eq. 1}$$

$$\text{ConsPat.} = f(\text{BrnID}) \quad \text{eq. 2}$$

$$\text{ConsPat} = \alpha_0 + \beta_1 \text{BrnID} + \mu_t \quad \text{eq. 3}$$

$$\text{ConsPat.} = f(\text{BrnPer}) \quad \text{eq. 2}$$

$$\text{ConsPat} = \alpha_0 + \beta_1 \text{BrnPer} + \mu_t \quad \text{eq. 3}$$

Variable Descriptions

Where:

<i>ConsPat.</i>	=	Consumer Patronage
<i>BrnID</i>	=	Brand Identity
<i>BrnPer</i>	=	Brand Patronage
α_0, β_1	=	Regression coefficients of the model
μ_t	=	Error term

Test of hypotheses

Regression analysis was used to test the hypothesized effect of the independent variables on the dependent variable.

Test of hypothesis I

H₀₁: *There exist no significant relationship between brand personality on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State.*

Table 3: Result for the test of Hypothesis I

<i>ConsPat</i>	Coeff.	Std.Err.	T	P> t 	Decision
<i>BrnID</i>	0.3476	0.0659	3.36	0.001	Reject
<i>_CONS</i>	2.2316	0.3205	7.48	0.000	
Obs.	200				
F(1, 198)	10.63				
Prob > F	0.0014				
R-Squared (R²)	0.7966				
Adj. R²	0.6543				

Source: Field Survey, 2026.

Table 3 presents the results of the regression analysis conducted to examine the influence of Brand Identity (BrnID) on Consumer Patronage (ConsPat) of locally made attires. The regression coefficient for Brand Identity is 0.3476, with a standard error of 0.0659 and a t-statistic of 3.36. The corresponding probability value ($p = 0.001$) is lower than the conventional significance threshold of 0.05. This outcome indicates that Brand Identity exerts a positive and statistically significant effect on Consumer Patronage of locally made attires. Consequently, the null hypothesis is rejected, while the alternative hypothesis is upheld. The positive coefficient value of 0.3476 suggests that an improvement in Brand Identity leads to a corresponding increase in Consumer Patronage, holding other variables constant. Specifically, a unit increase in Brand Identity is associated with an estimated 34.76% increase in Consumer Patronage. This finding implies that consumers are more inclined to patronize locally made attires when such products possess distinctive, credible, and easily recognizable brand identities. The result further underscores the importance of brand uniqueness, reputation, recognizability, and emotional appeal in influencing consumers' purchasing behaviour.

The intercept value ($_CONS = 2.2316$) is also statistically significant at $p = 0.000$, indicating that Consumer Patronage would remain positively influenced even in the absence of the explanatory variable included in the model. This suggests that additional factors not explicitly captured in the regression model may also contribute to variations in

consumers' patronage behaviour toward locally made attires. Furthermore, the F-statistic value of 10.63, with a corresponding probability value of 0.0014, confirms that the overall regression model is statistically significant and suitable for predictive analysis. This implies that the model provides adequate empirical evidence for explaining the relationship between Brand Identity and Consumer Patronage of locally produced attires. The coefficient of determination ($R^2 = 0.7966$) reveals that approximately 79.66% of the variation in Consumer Patronage is explained by Brand Identity, while the remaining 20.34% is attributable to other variables not included in the model. In the same vein, the adjusted R^2 value of 0.6543 indicates that the explanatory strength of the model remains considerably robust even after adjusting for possible estimation errors. This confirms that Brand Identity constitutes a major determinant of Consumer Patronage within the context of the study.

Implications of the findings

The findings of this study carry significant managerial, marketing, and policy implications. The observed positive and statistically significant relationship between Brand Identity and Consumer Patronage suggests that producers and marketers of locally made attires should place greater emphasis on developing strong and competitive brand identities to enhance consumer acceptance, loyalty, and repeat patronage. This objective may be achieved through strategic branding initiatives such as innovative product designs, attractive

packaging, consistent quality assurance, effective product differentiation, and integrated promotional campaigns capable of strengthening consumers' confidence in locally produced attires. The result further implies that consumers attach substantial importance to brand recognition, perceived product quality, and corporate image when making purchasing decisions. Consequently, local manufacturers who invest in building reputable and distinctive brands are more likely to achieve competitive advantage, improve customer retention, and expand their market share within the fashion and household attire industry.

Moreover, the substantial explanatory power of the regression model indicates that strengthening brand identity could significantly enhance consumers' patronage of locally made products. This may, in turn,

contribute to the growth of indigenous industries, employment generation, increased entrepreneurial activities, and broader economic development. Therefore, policymakers and relevant stakeholders should support local producers through branding support programmes, public enlightenment campaigns, entrepreneurship development initiatives, and market expansion policies aimed at improving the competitiveness of locally manufactured attires in both domestic and international markets.

Test of hypothesis II

H02: brand identity does not exert significant influence on consumer patronage of non-Foreign made household attires among male residents of Bayelsa State

Table 4: Result for the test of Hypothesis II

<i>ConsPat</i>	Coeff.	Std.Err.	T	P> t 	Decision
<i>BrnPer</i>	0.3876	0.0629	3.36	0.000	Reject
<i>_CONS</i>	2.4316	0.3235	7.48	0.000	
Obs.	200				
F(1, 198)	10.64				
Prob > F	0.0018				
R-Squared (R²)	0.7666				
Adj. R²	0.6583				

Source: *Field Survey, 2026.*

Table 4 presents the results of the regression analysis conducted to examine the influence of Brand Personality (BrnPer) on Consumer Patronage (ConsPat) of locally made attires. The regression coefficient for Brand Personality is 0.3876, with a standard error of 0.0629 and a t-statistic of 3.36. The corresponding probability value ($p = 0.000$) is lower than the conventional significance threshold of 0.05. This outcome indicates that Brand Personality exerts a positive and statistically significant influence on Consumer Patronage of locally made attires. Consequently, the null hypothesis is rejected, while the alternative hypothesis is accepted. The positive coefficient value of 0.3876 suggests that an improvement in Brand Personality leads to a corresponding increase

in Consumer Patronage, holding other variables constant. Specifically, the result implies that enhancing dimensions of brand personality, such as sincerity, uniqueness, reliability, attractiveness, and emotional appeal, significantly increases consumers' willingness to patronize locally made attires. This finding further demonstrates that consumers are more likely to develop favourable purchasing attitudes toward products associated with distinctive and appealing brand personalities. The intercept value ($_CONS = 2.4316$) is statistically significant at $p = 0.000$, indicating that Consumer Patronage would remain positively influenced even in the absence of the explanatory variable included in the model. This suggests that other factors not explicitly

captured in the regression model may also contribute to consumers' patronage behaviour toward locally produced attires.

Furthermore, the F-statistic value of 10.64, with a corresponding probability value of 0.0018, confirms that the overall regression model is statistically significant and suitable for predictive analysis. This implies that the model provides reliable empirical evidence for explaining the relationship between Brand Personality and Consumer Patronage of locally made attires. The coefficient of determination ($R^2 = 0.7666$) reveals that approximately 76.66% of the variation in Consumer Patronage is explained by Brand Personality, while the remaining 23.34% is attributable to other variables outside the model. Similarly, the adjusted R^2 value of 0.6583 indicates that the explanatory strength of the model remains considerably robust after adjusting for possible estimation bias. This finding confirms that Brand Personality constitutes a major determinant of Consumer Patronage within the context of the study.

Implications of the findings

The findings of this study carry substantial managerial, marketing, and policy implications. The positive and statistically significant relationship between Brand Personality and Consumer Patronage suggests that producers and marketers of locally made attires should prioritize the development of strong and appealing brand personalities capable of attracting, satisfying, and retaining consumers. This objective may be achieved through strategic initiatives such as maintaining product originality, ensuring consistent product quality, improving customer relations, adopting attractive product presentation techniques, and fostering emotional connections between consumers and locally made brands. These branding strategies are likely to strengthen consumers' trust, attachment, and loyalty toward indigenous attire products. The result further implies that consumers consider not only the functional attributes of products but also the symbolic and emotional characteristics associated with a brand when making

purchasing decisions. Consequently, local manufacturers that establish favourable and distinctive brand personalities are more likely to achieve competitive advantage, improve customer satisfaction, and strengthen their market positioning within the fashion and household attire industry.

Moreover, the substantial explanatory power of the regression model suggests that strengthening brand personality could significantly enhance consumer patronage of locally made products. This may, in turn, contribute to the growth and sustainability of indigenous enterprises, employment generation, increased local production, and broader economic development. Therefore, policymakers and relevant stakeholders should promote branding and product development initiatives aimed at improving the image, attractiveness, and competitiveness of locally produced attires in both domestic and international markets.

Conclusion and Recommendations

This study examined the influence of brand-related dimensions on consumer patronage of locally made attires, with particular emphasis on Brand Identity and Brand Personality. The findings revealed that both Brand Identity and Brand Personality exert positive and statistically significant effects on Consumer Patronage of locally produced attires. The study established that consumers demonstrate a stronger inclination to patronize locally made attires when such products possess distinctive, recognizable, and credible brand identities. In a similar vein, the results showed that favourable brand personality attributes such as sincerity, attractiveness, uniqueness, reliability, and emotional appeal significantly enhance consumers' purchasing attitudes and loyalty toward indigenous fashion products. The regression results further confirmed that the explanatory variables accounted for a substantial proportion of the variation in consumer patronage, indicating that branding plays a crucial role in shaping consumer behaviour within the locally made attire industry. The study therefore concludes that effective branding strategies are essential for

improving consumer acceptance, strengthening market competitiveness, and increasing the patronage of locally produced attires. Overall, the findings underscore the importance of strategic brand management in promoting indigenous products, sustaining local enterprises, creating employment opportunities, and contributing meaningfully to economic growth and national development.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

Strengthening brand identity: Manufacturers and marketers of locally made attires should develop strong and distinctive brand identities through effective use of logos, high-quality packaging, attractive labelling, and consistent product presentation. These efforts will enhance consumer recognition, trust, and preference.

Enhancement of brand personality: Producers should cultivate favourable brand personality traits that reflect sincerity, reliability, creativity, and cultural relevance. This will foster stronger emotional connections between consumers and locally made brands.

Prioritization of quality assurance: Local manufacturers should maintain consistent and high-quality production standards to improve consumer confidence, satisfaction, and repeat patronage of indigenous attires.

Intensification of promotional activities: Marketers should invest in robust promotional strategies such as advertising, social media engagement, fashion exhibitions, and influencer partnerships to enhance awareness and improve public perception of locally produced attires.

Government support for local industries: Government and relevant agencies should design and implement supportive policies, provide financial incentives, and create an enabling business environment to strengthen the competitiveness of indigenous fashion and textile industries.

Capacity building in branding and entrepreneurship: Stakeholders should organize training programmes and workshops aimed at equipping local producers with

modern branding techniques, customer relationship management skills, and effective marketing strategies.

Promotion of indigenous fashion and culture: Cultural institutions and policymakers should actively promote indigenous fashion as a means of preserving cultural heritage while simultaneously encouraging local economic development.

Suggestions for Future Studies

Future research should incorporate additional branding variables such as brand loyalty, brand equity, brand awareness, and perceived product quality to provide a more comprehensive understanding of consumer patronage behaviour toward locally made attires. Subsequent studies should extend the geographical coverage beyond a single state or region to include multiple states or geopolitical zones within Nigeria, thereby enhancing the generalizability of findings. Longitudinal research designs are recommended for future studies in order to examine changes in consumer patronage behaviour over time. Future researchers should investigate the moderating effects of demographic variables such as age, gender, income level, and educational attainment on the relationship between branding dimensions and consumer patronage. Further empirical studies should explore the influence of digital marketing, social media engagement, and e-commerce platforms on consumers' patronage of locally made products. Comparative studies between locally made and foreign-made attires are also recommended to better understand the determinants of consumer preference and market competitiveness.

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e-Service Process and Customer Patronage of Money Deposit Banks in Delta State

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Abstract

This study focused on E-Service Process and Customer Patronage of Money Deposit Banks in Delta State. Four research questions were formulated to guide the study. Several literatures were reviewed and cited in this study for better understanding. This study will adopt ex post facto research design. The sample size will be limited to five (5) Money deposit banks in Nigeria: 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, there is a significance relationship between internet banking and customer patronage of Money Deposit banks in Delta State, there is a significance relationship between ATM machines and customer patronage of Money Deposit banks in Delta State, there is a significance relationship between E-service and customer patronage of money deposit banks in Delta State. There is a significance relationship between E-service process adoption and customer patronage of money deposit banks in Delta State. It was concluded that to compete in the highly competitive business environment, managers of E-services need to concentrate their e-service quality by enhancing customer's trust to influence customer's patronage intention. It was recommended that deposit money banks should develop their E-service by making it more interactive to encourage more patronage and effective customer service.

Key Words: *E-Service Process, Customer Patronage of Money Deposit Banks, ATM Machine, Internet Banking*

Introduction

The volume of patronage in banks determines the volume of investible funds available in form of loans and advances that can be used for purposes of economic growth and development. Hence, the more functional the banks are the better for the economy because

banks as financial intermediaries channel funds from surplus spending units to deficit spending units. The Search, Experience and Credence attributes therefore determines the pool of financial resources available for economic transformation and sustainable development of a nation (Kumar & Ayedee,

2021). The service environment is the entirety of the physical, perceptible and visible features that consumers interface with at service delivery locations. It comprises features such as ambience, spatial layout/functionality, symbols, signs, artworks and social elements such as employees and customers' density, for offline services (Figueiredo, Larsen & Bean, 2021). However, for virtual or internet services, the environment in which services are created and delivered is referred to as electronic service (Andriani, Setyorini & Shibghatalloh, 2021). Consequently, the role of e-service in enhancing customer patronage of internet banking services has been acutely ignored by existing researchers; thereby leading to insufficient empirical evidence to explain the causal relationship between e-service and customer patronage in the internet banking context. Similarly, there appears to be some sort of disagreement among existing researchers on the exact nature of relationship between e-service dimensions and customer patronage as the results of some researchers (Tankovic & Benazic, 2018) were inconsistent with the general perception that e-service dimensions positively enhance customer patronage (Tran & Strutton, 2019). This study was therefore designed to assess the E-Service process and customer patronage of money deposit banks in Delta State in order to establish practical implications for how money deposit banks could enhance their e-service process to improve customer patronage of their bank.

Statement of the Problem

Today's banking industry is filled with intense competition where the needs to satisfy their highly demanding customers is difficult and this is best done through the adoption of technology which plays a vital role in meeting their needs which is changing at a rapid rate. The benefits derived from e-service usage to be more than three times its cost used in purchasing it and dealing in today's banking environment requires evolving innovation with the aim of meeting the ever-demanding customers' needs. Therefore, the rapid emergence and evolution of e-commerce has revolutionized the money deposit banking industry. It has allowed banks to increase their revenue by allowing their clients to conduct transactions online. One of the challenges money deposit banking institutions are facing in today's banking environment is the continuous change in customers' needs and maintenance of the existence E-services, and this can be accounted for by a number of reasons, among which there is change in patronage of customers. It is on these premises this study intends to assess E-Service Process and Customer Patronage of Money Deposit Banks in Delta State.

Objectives of the study

The main objective of the study is to determine E-Service Process and Customer Patronage of Money Deposit Banks in Delta State while the specific objectives are to;

- i. Ascertain how the use of internet banking increase customer patronage of Money Deposit banks in Delta State
- ii. Examine how the use of ATM machines increase customer patronage of Money Deposit banks in Delta State
- iii. determine how the use of E-service increase customer patronage of money Deposit banks in Delta State.

- iv. determine the impact of E-service process adoption has on customer patronage of money deposit banks in Delta State

Review of Related Literature

e-Service

The service paradigm has evolved from viewing services and goods as fundamentally different to recognizing their interconnectedness. While initially perceived as opposites, they now overlap due to minor distinctions. Some services rely on tangible goods for support or delivery, while others use them in manufacturing. Defining a service includes identifying it as providing benefits, activities, or enjoyment and limiting it to commodity sales. Services are intangible and involve interactions between customers, physical resources, and systems to solve problems, sometimes involving other customers. E-Services have been around for a while, for instance, according to Lewis Kumar and Ayedee (2021) observed that scores of service-delivery companies are moving their services online to expand their market reach and ensure uninterrupted operations. According to Hull et al. (2018) “the emerging paradigm of electronic services (e-Services) promises to bring to distributed computation and services the flexibility that the web has brought to the sharing of documents”. They state that “the last several years have seen an explosion of activity around electronic services, in e-commerce, in science, and in telecommunications”. According to them, “the fundamental objective of e-services is clear: to have a collection of network-resident software services accessible via standardized protocols, whose functionality can be automatically discovered and integrated into applications or composed to form more complex services”.

After e-Commerce, came other e-services such as e-Learning, e-Health, e-Banking, e-

Agriculture, e-Government, etc., which all have now moved onto the mobile device’s platforms (especially smartphones) and renamed to m-Commerce, m-Learning, m-Health, m-Banking, etc. Many of these e-Services survived the dotcom bubble or the dotcom boom, which saw the increase of such services and domain name registrations from 1996 and then crash from 2001. “During the crash, many online shopping companies, such as Pets.com, Webvan, and Boo.com, as well as several communication companies, such as Worldcom, NorthPoint Communications, and Global Crossing, failed and shut down”. The value of e-Services was further realized once the governments got on the bandwagon and introduced e-Government and e-Governance to provide government services to its citizens as well as show transparency in governance. “As growth in the technology sector stabilized, companies consolidated; some, such as Amazon.com, eBay, and Google gained market share and came to dominate their respective fields”. For example, in 2021, during Amazon Prime Day (for Amazon Prime Members), the one-day worldwide sales were 10.4 billion USD and Amazon sold 175 million items (Statista.Com).

Customer Patronage

Patronage refers to the outcome of the customers’ enthusiasm to be firmly devoted to a company may be, due to the superiority of service or perceived service qualities or the quality of the total offerings of the firm Patronage is a crucial parameter for measuring the performance of the band. Chiguvi (2016) defined customer patronage as commitment to proceed obtaining a favored item or benefit reliably notwithstanding of

situational variables and showcasing endeavors that may result in exchanging behavior. This in turn is expected to lead to positively affect the revenue generated. Hence the survival of any bank is largely reliant on the intensity of patronage it receives and every other outcome measure is a function of the patronage level.

The Use of Internet Banking increase Customer Patronage

The Internet can be referred to as “a type of global information infrastructure consisting of computer hardware and software that is characterised as both general and open“. (Peterson; Balasubramanian; Bronnenberg, 1997) In this case general means that Internet was not designed for a specific set of services. Since all specifications required to use the Internet are publicly available, it can also be described as “open“. Further on, “the Internet “will refer both to the Internet “itself“ and to information and communication technologies (i.e. the systems behind the Internet technology). Internet banking is a system that facilitates bank customers in accessing their accounts and general information regarding bank products and services via a personal computer or any other electronic internet enabled devices such as mobile phones (Wijayarathne, 2015). It offers banking at the go, enabling transactions and payments over the internet through a bank’s website (Devi & Revathy, 2011). According to Premarathne and Gunathilake (2016), internet banking is defined as a set of technological tools offered by financial institutions for its customers to do banking transactions via computers using an internet connection. Internet banking is an integrated system that offers customers flexible, suitable and low-cost platforms with

integrated services of online personal banking such as online checking and saving accounts, certificate of deposit, money market accounts, investment services and other related financial services (Bhattacharjee, 2001).

The Use of ATM machines Increase Customer Patronage

ATM is an innovation by banks that enable bank customers withdraw money without visiting banking hall; operating 24 hours a day and 7 days a week. It sells recharge cards, transfers funds as well as gives account balance enquiry ATMs are mostly located outside the banking halls, airports, schools, shopping malls, places far away from home, situated in large stores, filling stations, eateries, and hotels. It also has self-supervising operating applications and diagnostic programs and incorporates sophisticated physical and logical security features (Kaplan & Maxwell, 1994, cited in Salami & Ogbeta, 2014). The ATM is a combined computer terminal with cash vault and record-keeping system in one unit, permitting users to enter a bank’s book keeping system with a plastic card containing a personal identification number (PIN). It is accessed by punching a special code number into the computer terminal linked to a bank’s computerized records (Rose, 1999).

This is the electronic banking terminal that manages the selling process through an accessible interface for salespersons. POS allows the creation and printing of the transaction receipt. POS is used for card payments, which allows the processing of debit/credit card transactions, cashless transactions, and real-time processing, which authorizes and settles transactions instantly.

POS is fast and easy, reduces fraud risk, guarantees efficiency, and increases sales

The Use of Bank Customer Service Increase Customer Patronage

Customer service, in general, refers to how a business treats its clients. Customer service, according to Dei-Tumi (2005), is an attitude rather than a department. He also believes that a firm can only keep and create clients depending on the attitude it exhibits toward them. It's also about delivering on the company's goal of adding value to the client. Customer service is defined as a company's ability to provide services to customers on a continuous basis while meeting their needs and wishes (Simons, 2016). In banking, one of the most important ways to keep consumers coming back is to provide excellent customer service. It include providing detailed and timely solutions to customers' inquiries and complaints, as well as interacting with consumers through physical meetings or other technology means such as email, fax, and phones. Almost every bank employee is involved in some part of customer care, it may be argued. Due to increased competition in the banking industry, banks are being urged to become more customer-centric. As stated before in the report, recruiting new consumers is more expensive than sustaining existing clients. In order to keep customers, the customer service personnel within banks are required to have the ability to provide quick, accurate and convenient services to clients (Osuagwu, 2009).

The impact of E-service process adoption has on customer patronage

As pointed out by authors Jabnoun and Al-Tamimi (2003), superior transaction

efficiency is achieved by reducing physical facilities and reducing the number of employee (in support of online service delivery), however, it may create a lack of interaction between provider and customers; thus adversely influencing customer's perception. To reduce additional fees or the tension felt by customers while dealing with human interaction, banks nowadays offer online services. This endeavour relieves customer's concerns by providing various online services which are efficient in generating ongoing loyalty and customer's patronage intention of target customers (Adapa & Roy, 2017). Researchers agree that due to the rise and success of online retail banking investigation should not only be concentrated on stakeholders but to customers and the policymakers alike (Dada, 2017; Al-dweeri et al., 2017; Yap et al., Pikkariainen et al., 2004; Sathye, 1999, Devlin, 1995).

Theoretical Framework

This study is anchored on Technology Acceptance Model. The Technology Acceptance Model (TAM) was developed to elucidate the recognition of information Technology for carrying out diverse undertakings and to forecast the acceptance of online banking (Davis, 1989). The theory establishes that the user's acceptance of a new information system is dependent on the user's perception about the system and determined by an individual's intention to use the systems. The two philosophies that define users' intentions are as follows; "perceived ease of use of technology and perceived advantages of using the technology in terms of its usefulness are the basic factors that influence an individual's acceptance of an information

system". Perceived usefulness is the degree to which an individual believes that the use of a system will increase his/her general performance in relation to its productivity and effectiveness. The productivity and effectiveness are the ability of a system to be timesaving and to be of comparative advantage to individual set goals in relations of work. Perceived ease of use on the other hand is the point to which an individual believes that the smallest or no effort at all is required for usage of a certain system in relationships to both physical effort and mental and simplicity of learning how to practice the system (Davis, 1989). In addition, Davis further argues that "perceived ease of use" influences perceived usefulness.

Methodology

This study adopted *ex post facto* research design. This is because it will assist in determining E-Service Process and Customer Patronage of Money Deposit Banks in Delta State. This study focuses on the E-Service Process and Customer Patronage of Money Deposit Banks in Delta State. The study's population comprises of twenty seven (27) (Access Bank plc, Citibank Nigeria Ltd, Ecobank Nigeria Plc, Fidelity Bank Plc, First Bank Nigeria Ltd, First City Monument Bank Plc, Globus Bank Ltd, Guaranty Trust Bank Plc, Keystone Bank Ltd, Nova Commercial Bank Ltd, Optimus Bank, Parallex Bank Ltd, Polaris Bank Plc, Premium Trust Bank, Providus Bank Ltd, Signature Bank Ltd, Stanbic IBTC Bank Plc, Standard Chartered

Bank Nigeria Ltd, part of Standard Chartered Group, Sterling Bank Plc, SunTrust Bank Nigeria Ltd, Titan Trust Bank Ltd, Union Bank of Nigeria Plc, United Bank For Africa Plc, Unity Bank Plc, Wema Bank Plc and Zenith Bank Plc) Money Deposit banks that were listed on the Central Bank of Nigeria (CBN). The sample size was limited to five (5) Money deposit banks in Nigeria: They are: Access bank, GTB Plc, Unity Bank, Fidelity Bank and First Bank Plc. The structured questionnaire was used for data collection which comprises of two sections. The questionnaire was given a thorough scrutiny by the research professionals, giving it face and content value in order for it to be suitable for the study. A pilot testing was carried out with the instrument using split half reliability method. The questionnaire was administered to another bank in which is not the same banking institution in which the actual research was carried out. On the analyses a reliability coefficient of 0.70 was obtained. A reliability of 0.70 met the standard established by Ajaja (2013), that an instrument of 0.70 above is reliable thus, the instrument was used for this study. 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

Presentation of Data

Table 1: *Demographic Characteristics of the Respondents as (N=75)*

S/No.	Characteristics	Frequency	Percentage
1	Sex		
	Male	53	71%
	Female	22	29%
	Total	75	100%
2	Age		
	20-25 yrs	11	15%
	26-30yrs	43	57%
	31-35yr	13	17%
	36 yrs and above	4	5
	Total	75	100%

Source: Field Work 2026.

Table 1 shows that 53(71%) of the respondents are males, while 22(29%) are females. Age of the respondents 11(26%) of the respondents are between 20yrs – 25yrs of ages, 43(57%) are between 26-30yrs, and 13(17%) are between 31-35 yrs, 4(5%) are from 36 yrs and above of age.

Data Analyses

Research Questions 1: Does internet banking e-service increase customer patronage of Money Deposit banks in Delta State?

Table 2

Mean (x) and Standard Deviation Responses to Does internet banking e-service increase customer patronage of Money Deposit banks in Delta State

S/No.	Item	Mean (x)	SD	Remark
1	The internet banking of the bank give personal attention to the bank's online customers	3.04	1.10	Accepted
2	Through the internet banking platform of the banks, customers are able to carry out e-banking activities in ways that meets their needs	2.81	0.87	Accepted
3	Internet banking website usually shows an understanding of the specific needs of customers need	3.80	0.52	Accepted
4	Customers are well satisfied with their bank's Internet channels if it allows them to perform online transactions without difficulties	3.77	0.53	Accepted
5	Bank customers enjoy Internet banking because of its easy and fast in getting served	3.68	0.71	Accepted
Grand Mean (x) and Standard Deviation		3.42	0.74	Accepted

Source: Field Work 2026

From Table 2, all the items have means ($\bar{x}$) between 2.81 to 3.80 and a Standard Deviation of within 0.52 to 1.10. They were accepted because their means ($\bar{x}$) were above the bench mark value of 2.50. Based on the result in Table 4.2, the grand means ($\bar{x}$) response regarding in which ways does Average Resolution Time (AVRT) taken by customer service before being served

influence the organizational performance of banks is 3.42 with a Standard Deviation of 0.74. From the analysis, it was shown that the respondents agreed to items on the ways Average Resolution Time (AVRT) taken by customer service before being served influence the organizational performance of banks.

Research Questions 2: How does the communication strategy adopted by banks influences their organizational efficiency?

Table 3:

Mean ($\bar{x}$) and Standard Deviation on the Responses How does the communication strategy adopted by banks influences their organizational efficiency (N=75)

S/No.	Item	Mean ($\bar{x}$)	SD	Remark
6	It improves customer patronage	3.57	0.79	Accepted
7	It creates awareness of the organization to the general public	3.52	0.82	Accepted
8	It gives quick updates on certain issues concerning customers	3.35	0.96	Accepted
9	It shows reliability on the side of the banks	3.32	0.99	Accepted
10	Customers will want to come back for more services	3.04	1.10	Accepted
Grand Mean ($\bar{x}$) and Standard Deviation		3.36	0.93	Accepted

Source: Field Work 2026.

From Table 3, all the items have means ($\bar{x}$) between 3.04 to 3.57 and a Standard deviation between 0.79 to 1.10. They were accepted because their means ($\bar{x}$) were above the bench mark value of 2.50. Based on the result in Table 4.3, the grand means ($\bar{x}$) response regarding on How does the communication

strategy adopted by banks influences their organizational efficiency 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 how does the communication strategy adopted by banks influences their organizational efficiency.

Research Questions 3: Does ATM machines e-service increase customer patronage of Money Deposit banks in Delta State?

Table 4:

Mean (x) and Standard Deviation on the Responses to Does ATM machines e-service increase customer patronage of Money Deposit banks in Delta State

S/No.	Item	Mean (x)	SD	Remark
11	It brings positive relationship between customers and banking staff	3.52	0.82	Accepted
12	It brings fast service rendering to customers	3.68	0.47	Accepted
13	It brings organizational expansion	3.65	0.66	Accepted
14	It brings satisfaction to customers	3.06	1.12	Accepted
15	It improve the organizational revenue/income	3.33	0.98	Accepted
Grand Mean (x) and Standard Deviation		3.44	0.81	Accepted

Source: Field Work 2026.

From Table 4, all the items have means (x) within 3.06 to 3.68 and a Standard Deviation between 0.47 to 1.12.. They were accepted because their means (x) were above the bench mark value of 2.50. Based on the result in Table 3, the grand mean (x) response regarding the Does ATM machines e-service

increase customer patronage of Money Deposit banks in Delta State is 3.44 with a Standard Deviation of 0.81. From the analysis, it was shown that the respondents agreed to the items on does ATM machines e-service increase customer patronage of Money Deposit banks in Delta State.

Research Questions 4: How does the use of E-service increase customer patronage of money Deposit banks in Delta State?

Table 5

Mean (x) and Standard Deviation on the Responses to How does the use of E-service increase customer patronage of money Deposit banks in Delta State

S/No.	Item	Mean (x)	SD	Remark
16	I am satisfied with the speed at which my issue was addressed	3.66	0.61	Accepted
17	Quick response time is a significant factor in my satisfaction with customer service	3.81	0.39	Accepted
18	My call/email/chat was answered promptly by customer service	3.48	0.79	Accepted
19	The customer service representative responded to my inquiries in a timely manner	3.56	0.80	Accepted
20	The response time of customer service met my expectations	3.65	0.70	Accepted
Grand Mean (x) and Standard Deviation		3.63	0.65	Accepted

Source: Field Work 2026.

From Table 5, all the items have means ($\bar{x}$) between 3.48 to 3.81 and a Standard Deviation between 0.39 to 0.80. They were accepted because their means ($\bar{x}$) were above the bench mark value 2.50. Based on the result in Table 4.5, the grand mean ($\bar{x}$) response regarding the How does the use of

E-service increase customer patronage of money Deposit banks in Delta State is 3.63 with a Standard Deviation of 0.65. From the analysis, it showed that the respondent agreed on how does the use of E-service increase customer patronage of money Deposit banks in Delta State.

Research Questions 5: What are the impacts of E-service process adoption on customer patronage of money deposit banks in Delta State?

Table 6:

Mean ($\bar{x}$) and Standard Deviation on the Responses What are the impacts of E-service process adoption on customer patronage of money deposit banks in Delta State (N=75)

S/No.	Item	Mean ($\bar{x}$)	SD	Remark
6	Customers adoption of E-service because its fast and reliable in carrying transactions	3.57	0.79	Accepted
7	E-service adoption impact customers patronage usage	3.52	0.82	Accepted
8	E-service adoption reduces stress from customers	3.35	0.96	Accepted
9	E-service adoption process saves time	3.32	0.99	Accepted
10	E-service adoption by customers encourages more adoption of technology	3.04	1.10	Accepted
Grand Mean ($\bar{x}$) and Standard Deviation		3.36	0.93	Accepted

Source: Field Work 2026.

From Table 6, all the items have means ($\bar{x}$) between 3.04 to 3.57 and a Standard deviation between 0.79 to 1.10. They were accepted because their means ($\bar{x}$) were above the bench mark value of 2.50. Based on the result in Table 4.3, the grand means ($\bar{x}$) response regarding on What are the impacts of E-service process adoption on customer

patronage of money deposit banks in Delta State 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 what are the impacts of E-service process adoption on customer patronage of money deposit banks in Delta State.

Test of Hypotheses

Hypotheses 1

Ho₁: There is no significance relationship between internet banking and customer patronage of Money Deposit banks in Delta State.

Table 7

T-test Table Showing significant effect between internet banking and customer patronage of Money Deposit banks in Delta State.

Items	N	Mean (x)	SD	DF	t _{cal}	t _{crit}	Level of significance	Decision
Internet banking	53	3.80	1.10	73	0.53	2.013	0.05	Accepted
Students' Customer patronage	22	2.81	0.52					

Table 7, t_{cal} (0.53) less than t_{crit} (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 internet banking and customer patronage of Money Deposit banks in Delta State.

Hypothesis 2

Ho₂: There is no significance relationship between ATM machines and customer

patronage of Money Deposit banks in Delta State.

Table 8:

T-test Table Showing significant effect between ATM machines and customer patronage of Money Deposit banks in Delta State

Items	N	Mean (x)	SD	DF	t _{cal}	t _{crit}	Level of significance	Decision
ATM machines	53	3.57	1.10	73	0.058	2.013	0.05	Accepted
Customer patronage	22	3.04	0.79					

Table 8, shows t_{cal} (0.058) is less than t_{crit} (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 ATM machines and customer patronage of Money Deposit banks in Delta State.

Hypotheses 3

Ho₃: There is no significance relationship between E-service and customer patronage of money deposit banks in Delta State.

Table 9

T-test Table Showing significant effect between E-service and customer patronage of money deposit banks in Delta State

Items	N	Mean (x)	SD	DF	t _{cal}	t _{crit}	Level of significance	Decision
E-service	53	3.68	1.12					

Students'					
Customer					
patronage	22	3.06	0.47		

Table 9, t_{cal} (0.53) less than t_{crit} (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 E-service and customer patronage of money deposit banks in Delta State.

Hypotheses 4

Ho₄: There is no significance relationship between E-service process adoption and customer patronage of money deposit banks in Delta State.

Table 10

T-test Table showing significant effect between f E-service process adoption and customer patronage of money deposit banks in Delta State

Items	N	Mean ($\bar{x}$)	SD	DF	t_{cal}	t_{crit}	Level of significance	Decision
E-service process adoption	53	3.81	0.80	73	0.52	2.013	0.05	Accepted
Customer patronage	22	3.48	0.39					

Table 10, t_{cal} (0.52) less than t_{crit} (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 E-service process adoption and customer patronage of money deposit banks in Delta State

Discussion of Findings

The analysis shows that the majority of the respondents are males, which are than the females.

The finding in Research question 1 shows that majority of the respondents agreed to the does internet banking e-service increase customer patronage of Money Deposit banks in Delta State? this is supported by Premarathne and Gunathilake (2016), internet banking is defined as a set of technological tools offered by financial institutions for its customers to do banking transactions via computers using an internet connection. Internet banking is an integrated system that offers customers flexible, suitable and low-cost platforms with integrated services of online personal banking such as online checking and saving accounts, certificate of deposit, money market accounts, investment services and other related financial services.

The finding in Research question 2 shows that majority of the respondents agreed does

ATM machines e-service increase customer patronage of Money Deposit banks in Delta State? This is in line with Salami & Ogbeta, (2014) stated that ATM is a combined computer terminal with cash vault and record-keeping system in one unit, permitting users to enter a bank's book keeping system with a plastic card containing a personal identification number (PIN). It is accessed by punching a special code number into the computer terminal linked to a bank's computerized records (Rose, 1999).

The finding in Research question 3 shows that majority of the respondents agreed on what are the impact of E-service process adoption on customer patronage of money deposit banks in Delta State? This is supported by Jabnoun and Al-Tamimi (2023), superior transaction efficiency is achieved by reducing physical facilities and reducing the number of employee (in support of online service delivery), however, it may create a lack of interaction between provider and customers; thus adversely influencing customer's perception. To reduce additional fees or the tension felt by customers while dealing with human interaction, banks nowadays offer online services.

Conclusion and Recommendations

Conclusion

Consumers availing E-service banking service are selecting their preferred services based on their individual needs; which are influenced by their level of adoption of new technology. Thus, this research will undoubtedly assist the E-service providers to understand the importance (and measure) of E-service quality and fulfill the requirements of both current and potential customers. This investigation uncovered that to compete in the highly competitive business environment, managers of E-services need to concentrate their e-service quality by enhancing customer's trust to influence customer's patronage intention.

Recommendations

This study hereby recommended the following;

- i. Deposit money banks should develop their internet banking services by making it more interactive to encourage more patronage
- ii. Internet banking should be made easier for customers to make use of it at any time.
- iii. More awareness and sensitization programmes should be given to customers on the need for e-service banking.
- iv. Banks should make their ATM machines more secured to encourage larger patronage and customer satisfaction.

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The Impact of Capital Structure on Financial Performance: A Comparative Analysis Of Firms In Nigeria

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Abstract

This study is a comparative analysis of the impact of capital structure on financial performance of firms in Nigeria, targeting the listed oil & gas and consumer goods sectors firms in the Nigeria stock exchange; specifically; 10 companies listed in the oil & gas and consumer goods sectors firms; for the period of 2011-2020 (10years). Secondary data (panel data) which will be sourced from the annual reports and accounts of firms listed oil & gas and consumer goods sectors based on the variables under study. The secondary data obtained is presented in a tabular form, and analyzed through the application statistics, panel unit root test, correlation matrix and regression analytical technique using the E-VIEW (version 9.0) statistical tool. The findings revealed that Long Term Debt Ratio (LTDR) has positive and insignificant effect on Return on Assets (ROA) of listed oil and gas firms while positive and significant effects on Return on Assets (ROA) of listed consumer goods firms in Nigeria; Total Debt Ratio (TDR) has a negative and insignificant effect on Return on Assets (ROA) of listed oil & gas and consumer goods firms in Nigeria; Debt to Equity Ratio (DTER) has positive and insignificant effect on Return on Assets (ROA) of listed oil and gas firms while positive and significant effects on Return on Assets (ROA) of listed consumer goods firms in Nigeria and Short Term Debt Ratio (STDR) has positive and significant effect on Return on Assets (ROA) of listed oil and gas firms while negative and significant effects on Return on Assets (ROA) of listed consumer goods firms in Nigeria. The study concluded that capital structure exerts mixed effect on performance of listed oil and gas and consumer goods firms in Nigeria. The study, therefore, recommends that short-term debts in oil and gas and consumer goods companies in Nigeria should be applied to short term business proposals to maximize their significance in capital structure decisions which has the tendency to affect their ROA. These companies should rely more on equity financing.

Keyword: *Financial Performance, Comparative Analysis, Capital Structure, Firms in Nigeria.*

Introduction

One of the most important aspects of corporate finance is selecting how to fund the company's operations. Internal or

external finance sources are available to businesses. The combination of internal and external financial sources is important to the company's success or failure (Olayemi and

Fakayode, 2021). This is a critical decision that will affect the firm's capacity to compete effectively in its market. If a company relies only on equity capital and internal funding, it may have difficulty expanding and capitalizing on market opportunities. As a result, businesses may take on loan financing to develop and boost their earning potential (Opoku-Asante, Winful, Sharifzadeh and Neubert, 2022).

Capital structure is core to the financing decision of firms because it assists in the assignment of debt and equity into the financing profile. Debts are funds raised via borrowings (largely from banks and the loan market) while equities are those sourced from sale of stocks (securities). The firm reserves the right to select between the two or to pursue a combination of debt and equity or hybrid instruments, the ultimate goal is to make decisions based on efficiency in terms of minimizing costs while simultaneously generating maximum returns (Asaolu, 2021).

Capital structure is the mix of finance used by the company, as the source of long-term finance. Companies' sources of finance are classified into two groups which are referred to as debt or borrowed capital, and equity (Oke and Fadaka, 2021). Equity is the capital provided by the owners of the corporation, which in turn give them rights to have shares in the company. The issue with borrowed funds is that the business enterprise has to pay the agreed interest rates on yearly basis until the borrowed fund is paid (Oke and Fadaka, 2021). Regardless of low sales, reduced earnings, or any other scenario that affects the firm's capability and operations, the company employing borrowed cash will have to satisfy its financial obligations (Ganiyu, Adelopo, Rodionova & Samuel, 2019). A firm can source for fund; either internally or

externally or both, which constitute the firm's structure of capital (Sharon and Celani, 2019). Structure of capital refers to the blend of firm's financial liability (Uremadu and Onyekachi, 2019).

The capital structure of a company is crucial in determining the stability and profitability of the enterprise. Professionals and researchers further affirm that capital structure of high debt proportion has the capability to stimulate the profitability of the enterprise in the long run (Chadha and Sharma, 2015). Nevertheless, the capacity of high debt ratio to influence profitability positively comes with the risk of bankruptcy in a situation where the growth experienced by the company, in the long run, is temporarily hampered by environmental forces (Oke and Fadaka, 2021). Since, the study is a comparative study; the focus of the study will be aimed at comparing oil and gas sector firms listed in the Nigeria stock exchange.

In Nigeria, deposit money banks have great preference to surrendering to loan request of oil and gas companies compared to entrepreneurs in the general commerce and other sectors of the economy which they perceived as very fragile and risky. The level of competition and technological innovation in the oil & gas and consumer goods sector in recent times has made capital structure decisions an important aspect of management and a pre-requisite for firm's survival. Capital structure decisions to finance a firm's operations may be avenues for a firm to face liquidation, fall into financial distress or eventually be declared bankrupt (Omukaga, 2017).

Capital structure represents a firm's financial framework which consists of debt and equity. It measures the extent to which debt level of a firm's borrowed funds are invested to enhance firms' performance;

thus, it involves the appropriate combination of debt and equity capital used in running the business. Because organizations attempt to adopt a financing mix that minimizes cost and maximizes financial performance, a financing manager is concerned with determining the appropriate financing mix (debts and equity) for the firm (Habibu, Abdu, Murtala&Sulaiman, 2019).

Short-term finances are required to finance an entity's working capital. Raw material purchases, payroll and labor payments, finished goods inventory demands, and so on are examples of short-term finance requirements. As a result, any source of money from which funds are loaned and borrowed for a period of less than a year can be described as a short-term finance source. The inability to fund medium and long-term funding needs with short-term cash is due only to a lack of professional financial management. Similarly, financing short- and medium-term funding demands with long-term capital is poor financial management. Analysts in the field of finance are debating whether to advise businesses on the appropriate capital structure to use when making choices (Olawajun, 2019).

Abubakar, Maishanu, Abubakar, & Aliero (2018) affirm that inappropriate combination of different sources of capital, particularly between debt and equity is desirable for every business entity. However, prior literature like Abubakar (2017), Abata&Migiro (2016) and Oladeji, Ikpefan & Olokoyo (2015), explained that debt capital is seen to be cheaper (in terms of inherent risk) than equity capital. There are different schools of thought on the optimal level of leverage that a firm can undertake. One of the viewpoints specifies a point at which the trade-off between the cost of bankruptcy and the tax benefit gained by

charging interest expenditures can be realized (Ahmed, Awais, & Kashif, 2018).

The framework for determining the optimal capital structure of debt and equity is one that describes how equity and debt are utilized to finance corporate activities. It is important to strike a balance between the firm's risk and returns in the intended capital structures to maximize firm value. Therefore, striking a balance between the risks and returns in firm's operation is the purpose of capital structure. Though, the firm raises equity by ways of issuing common and preferred stocks and debt in the form of loans, bonds, debentures, note payable etc. The owners of the firm are equity holders who have a long-term commitment to the firm in consideration that will grow in future. While the debtor is the firm's creditor, the debtor has a long-term commitment to the firm in exchange for interest and principal repayment at regular intervals (Ajayi&Zahiruddin,2016).

Furthermore, deciding on an ideal capital mix has proven to be a difficult challenge for most businesses. The Nigerian Oil & Gas and Consumer Goods sectors are important drivers of the Nigerian economy; however, several companies have recently gone bankrupt due to financial difficulties. The width and depth of the various financial markets in Nigeria are used to determine the optimal capital mix in the business sector. Also, enterprises in the Oil & Gas and Consumer Goods sectors require long-term, medium-term, and short-term financing to run their operations; most of these Oil & Gas and Consumer Goods sector firms finance their operations through financial leverage. Choosing the best capital mix, on the other hand, causes financial friction in most businesses.

The debt level in oil & gas and consumer goods sector firms determine the amount of

fixed costs paid by the oil & gas and consumer goods sector firms. The cost of debt, which is commonly referred to as interest amount, is a fixed expense connected with debt/borrowed funds. Also, oil & gas firms that borrow so much from their creditors incur high cost of debt hence lowering the profits/net income, thus, financial leverage/debt affected company's financial performance and income levels of companies listed in oil & gas and consumer goods sectors in Nigeria.

Also, despite the huge credit oil and gas companies received from deposit money banks, they are yet the highest sector indebted to the banking sector. As of 31st February 2018, oil and gas sector indebtedness to deposit money banks in Nigeria reached N3.58trillion (Asaolu, 2021). With this scenario in a lay man thinking, one would wonder why deposit money banks have great preference in lending to this oil and gas companies at the detriment of the real sectors of the economy. Moreover, to the best of my knowledge, there is only one study that has been conducted on comparative analysis of the impact of capital structure on financial performance of firm (that is the study of Asaolu, 2021), while the other studies are either focused on one sector or the other. Also, empirical findings on the nexus between capital structure and firms' financial performance in oil & gas and consumer goods sectors in Nigeria are mixed. In other words, there is no agreement by scholars on the effect of capital structure on financial performance of oil & gas and consumer goods sector companies in Nigeria. Asaolu's (2021) study, for example, reveals that while debt structure enhanced business performance, a fast increase in such leverage tends to lower firm's performance for all of the firms

studied. Asset tangibility, interest payment and dividend growth, directors' shares/inside ownership, and non-debt tax shield are all relevant coefficients in the outcome. They indicate positive associations, showing that these variables have an impact on business performance on average across both sectors; specifically, the results show that firms that are more efficient in terms of taxation shielding perform better. Total debt to total assets has no significant effect on return on assets of oil and gas companies quoted on the Nigerian Stock Exchange, but total debt to total equity has a significant effect on return on equity of oil and gas companies quoted on the Nigerian Stock Exchange, according to Okonkwo, Adigwe, Ezu, and Oko (2020) findings from data analyzed. According to Oyakhire (2019), capital structure and financial performance have a considerable relationship.

Bashiru and Bukar (2016) discovered that the capital structure of listed petroleum marketing companies in Nigeria, as measured by STD, LTD and TD has a negative and substantial association with financial performance (ROA and EPS). As a result, this research aims to increase understanding and close the gap to the smallest possible extent. While Opoku-Asante, Winful, Sharifzadeh and Neubert (2022), using sectorial analysis, established a significant negative relationship between capital structure and financial performance. Debt maturity did not affect the relationship between capital structure and financial performance. Adeoye and Olojede (2022) investigated the impact of capital structure on firm's performance in the food and beverages manufacturing industries, in Nigeria, discovered that Debt finance significantly impacted the performance of the industries (ROCE, ROA, and EPS) negatively. While the impact Firms size

have on the selected food and beverages industries was relatively low, Equity finance contributed hugely and positively to the performance of the firm and Olayemi and Fakayode (2021) examined the effect of capital structure on financial performance of quoted manufacturing companies in Nigeria, established that SDTAR and LDTAR have positive but insignificant effects on ROA, and TDTAR has a negative significant effect on ROA and ROE respectively. Also, TDTAR and TDTER have negative insignificant effects on ROE. The study concluded that SDTAR, LDTAR, TDTER have no significant effect on ROA and ROE, but TDTAR have effect on ROA.

Based on prior studies, very few studies have done comparative analysis on the impact of capital structure on financial performance and other studies, either focus on one sector or the other. However, there is dearth of studies on comparative analysis on the impact of capital structure on financial performance in Nigeria firms by comparing firms listed in the Oil & Gas and consumer goods sector. The analysis is unique in the light of looking at the listed Oil & Gas consumer goods sector firm in Nigeria Stock Exchange.

Literature Review

Opoku-Asante, Winful, Sharifzadeh and Neubert (2022) aimed to investigate, using a sectorial analysis, the relationship between capital structure and financial performance and consider the effect of debt maturity on the relationship. The relationship between capital structure and financial performance, considering the debt maturity, using 425 cross-sectional firm-year samples from firms in Ghana and Nigeria from 2014 to 2019. The empirical findings suggested a significant negative relationship between capital structure and financial performance.

Debt maturity did not affect the relationship between capital structure and financial performance. However, the Industry influences the direction of the relationship between capital structure and financial performance. In addition, debt maturity influences capital structure performance relationship in specific sectors but not the market. This paper extends on previous studies on the relationship between capital structure and financial performance by incorporating sectorial and debt maturity on firms in Ghana and Nigeria. The findings of this study will assist finance managers in maximizing performance by considering financially sensible heterogeneities such as the sector and the funding source when making financing decisions.

Adeoye and Olojede (2022) investigated the impact of capital structure on firm's performance in the food and beverages manufacturing industries in Nigeria. We adopted an ex-post factor research design, which involves the use of cross-sectional time series data extracted from the audited annual accounts of ten food and beverages industries quoted in the Nigeria stock exchange covering the period of six years (2012-2017). To measure the strength of association between the variables, Pearson Product moment correlation analysis was used and the result revealed that size of firm and equity are positively correlated with financial performance.

However, from the panel regression results, we found out that Debt-finance significantly impacted the performance of the industries (ROCE, ROA, and EPS) negatively. While the impact Firms size have on the selected food and beverages industries was relatively low, equity finance contributed hugely and positively to the performance of the firm. This study therefore concludes that investment financed by equity increases the

value of firm more than when it is financed through debt. Based on the findings, the study therefore recommends that firms should consider taking debts with lower costs to avoid erosion of shareholders' value and the risk of bankruptcy. Furthermore, due to manipulative tendencies in reporting profits, financial performance measurement should be based on share prices rather than accounting profits.

Olayemi and Fakayode (2021) examined the effect of capital structure on financial performance of quoted manufacturing companies in Nigeria. The study covered ten companies for a period of seven years from 2013 to 2019. Panel data analysis was used to test the hypothesis. The independent variables used are total debt to total asset ratio (TDTAR), long-term debt to total assets (LDTAR), short-term debt to total assets (SDTAR) and total debt to total equity (TDTER) while the dependent variables are return on assets (ROA) and return on equity (ROE). The results of the study showed that SDTAR and LDTAR have positive but insignificant effects on ROA, and TDTAR has a negative significant effect on ROA and ROE respectively. In addition, TDTAR and TDTER have negative insignificant effects on ROE. The study concluded that SDTAR, LDTAR, TDTER have no significant effect on ROA and ROE, but TDTAR have effect on ROA. This study therefore recommended that firms should be cautious in accumulating debt that could eventually have adverse effects on their value and financial performance.

Oke and Fadaka (2021) looked on the financial structure and performance of Nigerian consumer goods manufacturing companies that were listed on the stock exchange. This research was prompted by inconsistencies in previous findings about

the relationship between capital structure and firm performance. Secondary data was gathered from consumer products manufacturing companies that are publicly traded in Nigeria. This study included eighteen enterprises, and the panel data approach was utilized to sample the 18 listed manufacturing firms from 2008 to 2018. As the dependent variable, the study used the popular accounting and financial indicators used in the enormous literature on the subject issue, such as return on equity, return on asset, Tobin's Q, and earnings per share. Capital structure, long-term debt, short-term debt, total debt ratios, and growth were used to measure the study's independent variable. Size was also included as a control variable in the study. According to the findings of this study's regression analysis, business performance in listed Nigerian manufacturing firms has a negative association with capital structure. In addition, for the 18 consumer products manufacturing companies, growth and performance exhibited a favorable link.

Asaolu (2021) investigated the effects of capital structure on the performance of the Oil & Gas and Manufacturing sectors in the United States, as well as the disparities in their dynamics. The study used secondary data from the New York Stock Exchange (NYSE)/NASDAQ for a ten-year period, from 2010 to 2019. The estimation findings were generated using E-View 9.0. To evaluate the specified hypotheses, the inquiry used the panel least square estimation approach and sectoral analysis on the data acquired. The findings demonstrated that, while debt structure enhanced business performance, Mohsin (2020) investigated the effect of three types of the degree of leverage, degree of operating leverage, degree of financial leverage and the degree of combined leverage on the

financial performance of the firms of food and fertilizer sector registered under PSE. The sample of the study includes 20 listed companies for the time period 2008-2015. Some of the companies have been excluded because the data was not available for this study period. Descriptive statistics, correlation analysis, unit root test, and random effect regression model were among the statistical tests employed in this study. The firm's financial performance was assessed using metrics such as ROA (return on assets), EVA (economic value added), and Tobin's. Because the financial performance of firms is influenced by more than just leverage, firm size was utilized as a control variable in this study. The findings of this study show that while financial leverage and combined leverage have no significant influence on financial performance as evaluated by return on assets, the degree of operating leverage has a negative substantial impact. The size of a company has no bearing on its financial performance as assessed by ROA. The DOL (degree of operating leverage) and DFL (degree of financial leverage) have a significant and adverse impact on a firm's financial performance as measured by EVA (economic value added) (degree of financial leverage). DOL (degree of financial leverage), DFL (degree of operating leverage), and DCL (degree of capital leverage) have no effect on Tobin's q performance (degree of combined leverage). The size of a company has a considerable negative impact on Tobin's Q performance. The findings of this study corroborate the pecking order hypothesis of capital structure since leverage has a large and negative impact on company performance assessed in terms of economic value added. According to the study's conclusions, business managers should keep fixed costs under

control to avoid operating leverage and concentrate on increasing revenue. Furthermore, in order to avoid liquidation, management should pay greater attention to the ideal level of debt and equity financing, and with technological improvement, businesses must invest in more efficient and technologically advanced assets, which will lead to increased efficiency. Rather than investing cash in less profitable huge assets, companies should invest them in initiatives with a positive net present value.

Kithandi and Katua's research was aimed at supporting financial managers in identifying whether financial leverage has an impact on financial performance (Kithandi and Katua, 2020). Financial leverage is measured using debt ratios, debt-to-equity ratios, and interest coverage ratios, all of which are important because they have a direct impact on a company's financial success. The purpose of this study was to determine the impact of debt ratios, debt-to-equity ratios, and interest coverage ratios on the financial performance of energy and petroleum sector companies listed on the Nairobi Securities Exchange. The Modigliani-Miller theorem, the Pecking Order Theorem, and the Trade-off Theorem were used to anchor the research. Because the population is so small, the study relied on census data. All five energy and petroleum businesses listed on the Nairobi Securities Exchange were investigated. The energy and petroleum sector is a critical component of any nation's industrialization and a critical support sector for all other economic sectors. The study relied on secondary data, which was mostly gathered from these companies' publicly available financial filings. The study employed an explanatory research design. Quantitative secondary data was gathered and evaluated using social science statistical software.

Measures of central tendency, such as mean, frequencies, and percentages, as well as measures of dispersion, such as standard deviation, were used to depict this data. To determine the relationship between the variables in the study and to estimate the models for the study, the researchers used a multiple regression equation. The data was analyzed using descriptive statistics. The data examined was subsequently presented in tables, charts, and graphs in order to develop a conclusion and provide recommendations. The influence of debt ratio on return on assets was studied, and it was discovered that as the debt ratio climbed, so did the return on assets. The impact of debt equity ratio on return on assets was studied, and it was discovered that as the debt equity ratio increased, the return on assets fell. In conclusion, the findings revealed that financial leverage and financial performance of petroleum and energy sector enterprises listed on the Nairobi Securities Exchange have a negative association.

Research Method

This research is planned and carried out using the ex-post Facto research design technique. The design involves the collection of secondary data from the annual report and account of 10 companies in the Oil & Gas sector to be evaluated using

appropriate tools. The analysis made use of Judgmental Sampling Techniques. The statistical technique of data analysis adopted descriptive statistics. The data were analyzed via measure of central tendencies, standard deviation to assess the spread of the variable among the studied companies, and minimum as well as maximum value for the variables.

The panel unit test was conducted to ascertain the stationarity in the panel data set while the Pedroni Residual Cointegration Test was conducted to determine long relationship in the data set among the variables. The data were computed for the period of 2011-2020. The multiple regression was chosen using Ordinary Least Square (OLS) method by using E-view 9.0 Statistical computer software to analyze the data in order to establish the kind of relationship between the dependent and the independent variable used. Okonkwo, Adigwe, Ezu&Oko (2020) and Oyakhire (2019).

Pearson correlation and multiple regression estimation techniques were applied. The model which specifies that performance (proxy with Return on Assets (ROA) is significantly influenced by variables of capital structure {Long Term Debt Ratio (LTDR), Total Debt Ratio (TDR), Debt to Equity Ratio (DTER) and Short-Term Debt Ratio (STDR) are formulated as follows,

$$ROA=f(LTDR, TDR, DTER, STDR)$$

$$ROA=BO+\beta_1LTDR+\beta_2TDR+\beta_3DTER+\beta_4STDR+E$$

Where;

ROA=Return on Assets

LTDR=Log Term Debt Rat

TDR=Total Debt Ratio

DTER=Debt to Equity Ratio

STDR=Short Term Debt Ratio

E=Error Term

β_0 =Intercept

β_1 - β_5 =Coefficient of the Independent Variables.

The a priori expectation is β_1 , β_2 , β_3 , β_4 , is lesser or greater than 0.

Table 1.3: Measurement of Variables

Variables	Formula	Expected Signs	Type of Variable
Return on Assets (ROA)	Net Profit/Total Asset	+/-	Dependent Variable
Long Term Debt Ratio (LTDR)	Long Term Debt/Total Asset	+/-	Independent Variable
Total Debt Ratio (TDR)	Total Debt/Total Asset	+/-	Independent Variable
Debt to Equity Ratio (DTER)	Total Debt/Total Equity	+/-	Independent Variable
Short Term Debt Ratio (STDR)	Short Term Debt/Total Asset	+/-	Independent Variable

Source: Computation Basis for the Variables, 2022.

Result

Table 1.4: Descriptive Statistics

Descriptive Statistics for Oil and Gas Firms

	ROA	LDTR	TDR	DTER	STDR
Mean	6.356028	0.235799	0.680851	2.356007	0.511944
Median	0.030517	0.110413	0.696838	2.058642	0.539965
Maximum	13.35961	1.801022	1.375801	15.90025	1.072479
Minimum	10.30597	0.000671	0.056357	-13.04063	0.069330
Std. Dev.	37.83394	0.297789	0.212858	2.959737	0.243454
Skewness	6.232559	2.661916	0.304990	-0.617708	-0.120362
Kurtosis	41.35872	12.58251	5.194597	13.68659	2.040659
Jarque-Bera	6574.865	490.6850	21.18568	472.5620	3.994652
Probability	0.000000	0.000000	0.000025	0.000000	0.035698
Sum	-616.5347	23.10826	66.72345	230.8887	50.17052
Sum Sq. Dev.	137415.1	8.601766	4.394926	849.7243	5.749195
Observations	97	98	98	98	98

Descriptive Statistics for Consumer Goods Firms

	ROA	LDTR	TDR	DTER	STDR
Mean	0.074136	0.183401	0.547700	1.668332	0.402378
Median	0.069874	0.151373	0.529767	1.126609	0.343097

Maximum	0.297832	1.882400	4.384140	47.92299	2.501740
Minimum	-0.340632	0.006876	-0.504471	-2.982845	-0.013399
Std.Dev.	0.095528	0.212679	0.501113	4.846010	0.384559
Skewness	-0.803200	5.505437	4.975772	8.861233	3.441211
Kurtosis	6.065540	42.62625	37.43278	84.76089	17.51219
Jarque-Bera	51.57687	7047.829	5352.707	29162.21	1074.881
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	7.413580	18.34012	54.77000	166.8332	40.23779
Sum Sq. Dev.	0.903434	4.478005	24.86033	2324.897	14,64070
Observations	100	100	100	100	100

Source: E-VIEW Version 9.0 Output,2022.

The Return on Assets (ROA) for the ten (10) consumer goods firms had a mean of 0.0741 for the period 2011 to 2020, with a maximum and minimum of 0.2978 and -0.3406 respectively while the standard is 0.0955. While the ten (10) consumer goods firms Long Term Debt Ratio (LTDR) have a minimum value of 0.069, maximum value of 1.8824, an average value of 0.1834 and standard deviation value of 0.2127. This shows that Total Debt Ratio (TDR) volatility is about 21.29%, when compare to the consumer goods

sector with a minimum value of -0.5045, maximum value of 4.3841, an average value of 0.5477 and standard deviation value of 0.5011. More also, Debt to Equity Ratio (DTER) oil and gas firms recorded a minimum value of -13.0406, maximum value of 15.900, an average value of 2.9597 and standard deviation value of 47.9230. Finally, Short Term Debt Ratio (STDR) oil and gas firms recorded a minimum value of 0.0693, maximum value of 1.0724, an average value of 0.5119 and standard deviation value of 0.2435.

Table 4.3.1: Pearson Product Correlation output of the Independent and Dependent Variables

	ROA	LDTR	TDR	DTER	STDR
ROA	1.000000				
LDTR	-0.242963	1.000000			
TDR	-0.463052	0.720154	1.000000		
ROA	1.000000				
LDTR	-0.127675	1.000000			
TDR	0.091437	-0.035311	1.000000		
DTER	0.058245	-0.151705	0.231319	1.000000	
STDR	0.286145	-0.398436	0.639339	0.189205	1.000000
Correlation Statistics for Consumer Goods Firms					

The Long-Term Debt Ratio (LTDR) is strongly negatively correlated with financial performance proxied by Return on Assets (ROA) for both sectors with the coefficients of

-0.1277 and -0.2430 recorded for the oil & gas and consumer goods sector respectively is greater than 0.05. With correlation coefficient (r) of 0.0914, which indicates a strong positive

correlation between Total Debt Ratio (TDR) and return on Assets (ROA) for the oil and gas firms when compared to the consumer good sectors which recorded a strong negative correlation of -0.4631 between Total Debt Ratio (TDR) and financial performance proxy by Return on Assets (ROA), With correlation coefficient (r) of 0.0582, which indicates a strong positive correlation between Debt to Equity Ratio (DTER) and Return on Assets (ROA) for the oil and gas firms when compare to the consumer good sectors which recorded a strong negative correlation of -0.4787 between Debt to Equity Ratio (DTER) and financial performance proxy by Return on Assets (ROA), With correlation coefficient (r) of 0.2861, which indicates a strong positive correlation between Short Term Debt Ratio (STDR) and Return on Assets (ROA) for the oil and gas firms when compare to the consumer good sectors which recorded a strong negative correlation of -0.5001 between Short Term Debt Ratio (STDR) and financial performance proxy by Return on Assets (ROA),

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-19.36941	13.16397	-1.471396	0.1446
LDTR	3.897540	14.53646	0.268122	0.7892
TDR	-30.30605	24.42025	-1.241021	0.2178
DTDR	0.334731	1.311818	0.255166	0.7992
STDR	62.62886	22.96872	2.726702	0.0077
R-squared	0.097223	Mean dependent var	-	6.356028
Adjusted R-squared	0.057972	S.D. dependent var	37.83394	
S.E. of regression	36.72093	Akaike info criterion	10.09474	
Sum squared resid	124055.2	Schwarz criterion	10.22746	
Log likelihood	-484.5949	Hannan-Quinn criter.	10.14841	
F-statistic	2.476938	Durbin-Watson stat	1.966610	
Prob(F-statistic)	0.049531			

Source: E-VIEW Version 9.0 Output, 2022.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.097229	0.015737	6.178543	0.0000
LDTR	0.176131	0.068929	2.555238	0.0122
TDR	-0.021452	0.032831	-0.653393	0.5151
DTDR	-0.011261	0.003375	-3.336385	0.0012
STDR	-0.061781	0.030373	-2.034084	0.0447
R-squared	0.354664	Mean dependent var	0.074136	
Adjusted R-squared	0.327492	S.D.dependent var	0.095528	
S.E. of regression	0.078339	Akaike info criterion	-	2.206830
Sum squared resid	0.583018	Schwarz criterion	-	2.076571
Log likelihood	115.3415	Hannan-Quinn criter.	-	2.154112
F-statistic	13.05255	Durbin-Watson stat	0.933337	
Prob(F-statistic)	0.000000			

Source: E-VIEW Version 9.0 Output, 2022.

The coefficient of Long-Term Debt Ratio (LTDR) is 3.8975 with a t-value of 0.2681 and associated p-value (sig. value) is 0.7892 was recorded for the oil and gas firms. The consumer goods firms for Long Term Debt Ratio (LTDR) are 0.1761 with a t-value of 2.5552 and associated p-value (sig. value) is 0.0122 was recorded for the oil and gas firms. The coefficient of Total Debt Ratio (TDR) is -30.3061 and -0.0125, with a t-value of -1.2410 and -0.0125 and associated p-value (sig. value) is 0.2178 and 0.5151 for the oil & gas and consumer goods sectors firms respectively. The coefficient of Debt-to-Equity Ratio (DTER) is 0.3347 and -0.0113, with a t-value of 0.2552 and -3.3364 and associated p-value (sig. value) are 0.7992 and 0.0012 for the oil & gas and consumer goods sectors firms respectively. The coefficient of Short-Term Debt Ratio (STDR) is 62.6289 and -2.0618, with a t-value of 2.7267 and -2.0341 and associated p-value (sig. value) are 0.0077 and 0.0447 for the oil & gas and consumer goods sectors firms respectively.

Conclusion and Recommendation

The p-value of Long-Term Debt Ratio (LTDR) are 0.7892 and 0.0122 for the oil & gas and consumer goods firms respectively, which are more than the set value of 0.05 for the oil & gas firm while the consumer goods firm as is less than 0.005. This finding is in line with the findings of Oke and Fadaka (2021), Kithandi and Katua (2020), but contradicts the findings of Abubakar (2020), and Olarewaju, (2019). The p-value of Total Debt Ratio (TDR) are 0.2178 and 0.5151 for the oil & gas and consumer goods firms respectively, which is more than the set value of 0.05 for the oil & gas and consumer goods firms. This finding is in line with the findings of Oke and Fadaka (2021), Alamgir, Abdullah & Khalid (2019), but contrary with the findings of Abubakar (2020), Okonkwo,

Adigwe, Ezu and Oko (2020). The p-value of Debt-to-Equity Ratio (DTER) is 0.7992 and 0.0012 for the oil & gas and consumer goods firms respectively, which is more than the set value of 0.05 for the oil & gas firms, which the consumer goods firms is lesser than 0.005. This finding is in line with the findings of Okonkwo, Adigwe, Ezu and Oko (2020). The p-value of Short-Term Debt Ratio (STDR) are 0.0077 and 0.00447 for the oil & gas and consumer goods firms respectively, which is less than the set value of 0.05 for the oil & gas firms and the consumer goods firms. This finding is in line with the findings of Abubakar (2020), Kithandi and Katua (2020), Olarewaju, (2019) and Alamgir, Abdullah & Khalid (2019).

Recommendation

Based on the findings the study therefore recommends that short-term debts in consumer goods companies in Nigeria should be applied to short term business proposals to maximize their significance in capital structure decisions which has the tendency to affect their ROA. These companies should rely more on equity financing. Similarly, long term debts should be applied to long term business plans of the consumer goods firms in Nigeria to maximize their earning potentials as well as generate reasonable utility for the debt. Again, equity financing should be the first line approach. Total debt ratio and long-term debt to total assets have negative significant effect on firms' performance as shown in the panel regression result of this study. The judicious mix of debt to total asset and debt to common equity can achieve optimal performance of firms in the consumer goods sector. Therefore, firms should always strive to attain that optimal mix in order to achieve the overall objective of the organization. Oil & Gas and Consumer Goods Firms quoted on the NSE

should increase the equity portion of the debt-equity mix in their capital structure to improve firms' financial performance.

Contribution to Knowledge and Limitation of Research

The study contributed to knowledge by showing the impact of ROA on listed Oil & Gas and consumer goods sector firms in Nigeria. Again, the study contributed to knowledge by filling the gap in the literature with the comparison of the Oil & Gas and consumer goods sector in the Nigeria stock exchange which as shown the relationship between these variables.

The study only uses one measurement of capital structure on financial performance (ROA) to long term debt ratio, total debt ratio, debt' to equity ratio and short-term ratio. Past studies suggest that financial performance could be determined by number of measurements like book per-share, earning per-share, return on equity, value per-share, etc. Which in this study did not apply, this is the main limitation of this research. Consequently, future studies can expand the scope to include more firms or engage other sectors for a more robust result.

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Companies Income Tax, Human Capital Development and Gross Domestic Product: A Case of Nigeria

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Abstract

In this study, the extent to which companies income tax influence human capital development and gross document in Nigeria was investigated using ex-post facto research design. Data for the study were obtained from the Central Bank of Nigeria statistical bulletin, National Bureau of Statistics, Annual Abstract of Statistics, and the Federal Inland Revenue Service (where applicable). Companies' income tax was measured as profits accruing in, derived from or brought into or received from a trade, business or investment, gross domestic product was proxied as total amount of goods and services produced within a nation while human development index was measured by the average achievements in key dimensions of human development. Hence, the dependent variables were gross domestic product and human capital development while the independent variable is companies' income tax. Data obtained were analyzed using time-series properties and findings indicated that companies income tax has a significant effect on gross domestic product and human development index in Nigeria. Based on the findings, the study recommends that the government should focus on using companies income tax human development index because has an increasing effect. In this regards, avenues of companies' income tax evasion by companies should be addressed and also the tax base should also be widened.

Keywords: *Companies income; Human capital; Economic growth; Taxation; Nigeria*

Introduction

Every accountable and competent government has a primary responsibility to provide appropriate public goods and basic infrastructure to improve the level of living of its population. Nigeria, like many other countries, is reliant on revenue production to support its population's basic and infrastructure demands. Taxation is one of the available sources of revenue for delivering essential services to the majority of people in a given location (Adegbe, et al, 2020). The demand for tax payments has been a worldwide phenomenon since it affects every economy, regardless of national differences. As a result, a tax is an imposed monetary contribution to the government that is mandated by law. To put it differently, every tax must be based on a legally binding statute.

Tax revenue in Nigeria can be divided into two categories: oil and non-oil tax revenue. Oil tax revenues are derived through taxes imposed on the earnings and profits of oil corporations operating in Nigeria. Petroleum profit tax (PPT) and royalty from oil extraction economic rentals are two examples. Non-oil tax revenues, on the other hand, are revenues derived from taxes other than oil-related activities, such as corporate income tax (CIT), personal income tax (PIT), value added tax (VAT), and so on (Adegbe, et al, 2020).

Economic development can be seen as a complex multidimensional concept involving improvements in human well-being, development is about outcomes. Development occurs with the reduction and elimination of poverty, inequality and unemployment within a growing economy.

In other words, development should lead to improvement in society; it should bring about a higher standard of living and create better comfort for the greater majority. Ekpo (2015) has added water, education, health and energy to these basic necessities as defining characteristics of development. The focus here is economic growth with distribution, also referred to as inclusive growth. Development is about people. It is people that will define what gives them comfort, what raises their welfare or create the kind of environment they would define as development. Development is created or enhanced by people. So, the higher the ability of the people to create the environment defined as development, the more likely it is to be achieved.

One of the cardinal objectives of governments all over the world is to promote the socio-economic wellbeing of their citizenry. This is why successive administrations, taking Nigeria as a case study, have pursued national economic programmes aimed at sustaining economic growth for the vast majority of its citizenry through the adoption of various monetary and fiscal policies (Amos & Umiamikogbo, 2018). Uwakaeme (2015) also asserted that the key features of economic growth are Gross Domestic Product (GDP), Gross National Product (GNP) and Per Capita Income (PCI). There are two types of GDP in existence; Real GDP and Nominal GDP. Real GDP is the measurement of economic output of a country minus the effect of inflation and Nominal GDP is the measurement that leaves the price changes in the estimate.

A continuous increase in the key features is indicative of a growing and strong economy which when sustained over a long time translates to economic development. In contrast therefore, a sustained decrease in the production and consumption levels in a country leads to economic recession which eventually translates to depression if unchecked. Economic growth can be measured from three standpoints of output, income and expenditure which are driven by the individual contributions of the key players in the national income equation of economies such as the firms, household and

governments through productive, consumption, earnings, transfers, expenditure, savings and investment activities. It is therefore expected that revenue generation as well as expenditure incurred by the key players in the economy and government in particular should immensely contribute to economic development.

Currently, Nigeria depends on the extractive industry (particularly Oil and Gas) for more than 85% of her revenue. The extraction of resources provides huge financial benefits to Nigeria through export earnings and taxation. Out of all the components of the fiscal regime in the extractive sector, taxation is seen as the most reliable as it constitutes over 60% of the total tax revenue accruing to the Nigeria treasury. This assertion reflects the results of research findings which reveal that if developing countries like Nigeria could increase their tax bases to rates more typical in developed countries it would be in many case enough to meet Millennium Development Goals. Thus the tax revenue from the extractive industry in Nigeria is very vital to her development.

Review of Related Literature

Companies Income Tax (CIT)

Companies Income Tax (CIT) is a tax on the profits of registered companies in Nigeria. It also includes the tax on the profits of foreign companies carrying on any business in Nigeria. The CIT is paid by limited liability companies inclusive of the public limited liability companies. Resident companies are liable to corporate in tax (CIT) on their worldwide income while non-residents are subject to CIT on their Nigeria-source income. Corporate Income Tax is based on accounting profits adjusted for tax purposes. It was only in 1939 on the strength of Companies Income Tax Ordinance No. 14 of 1939 that, for the first time, government introduced a tax of 2 shillings and 6 pence in the 1% on companies' profits.

The Governor of Nigeria commenting on the new tax in his address to the Legislative council said "a tax on the income of companies is already taken in most

countries and the introduction of such tax on orthodox lines need no excuse. On the contrary, it appears to me a matter of regret that such a tax was not imposed years ago” (Ekundare, 1970). The Income Tax Ordinance 1940 No. 3 made all companies pay a flat rate of 5 shillings in the year as the companies’ profit tax. The 1940 Ordinance Tax was replaced by Income Tax Ordinance 1943 No. 29 and subsequently amended by the Income Tax Ordinance 1944 No. 39 and 1945 No. 23. The situation did not significantly change until after Nigeria’s independence in 1960.

In 1961, the government for the first time, came up with a legislation designed purely for taxation of companies profit in Nigeria, that is, the Companies Income Tax Act 1961 No. 22. This act was in force as amended subsequently until repealed and replaced by the Companies Income Tax Act 1979 No. 28, with effect from April. Companies’ taxes are designed to collect revenue from a firm’s economic profits. In practice, the tax base is net accounting profits: gross revenue less operating costs and capital adjustments. Often a single statutory rate is used and is usually most desirable, particularly when there are administrative constraints.

The statutory rate of Companies tax is often a poor indicator of its effects in revenue or investment behaviour. Rates apply to financial income, not economic income; inflation for instance, drives the two apart. For policy, there for effective tax rates are more important, the Average Effective Tax Rate (AETR) is the ratio of total revenues collected through the Companies Income Tax to the Companies economic profits. For revenue purposes, this rate should be high. By contrast, the Marginal Effective Tax Rate (METR) measures the effect of taxes on investors’ rate of return for an incremental addition to their activities. To avoid interfering with investment decisions, the METR should be low.

The main tasks of the Companies tax design should be to achieve a high AETR while keeping the METR low of preferably zero, and to avoid large variations in METRs across different types of investment (World Development Report, 1988). Companies

Income Tax Act of 1961 has been amended many times and is currently codified as Companies Income Tax, CAP C21 LFN 2004 (CITA). The Federal Board of Internal Revenue whose operational arm is the Federal Inland Revenue Service (FIRS) is empowered to administer the tax rates and overburdening the taxpayers which induced negative effects in savings and investment. Since 1992, however, measures have been taken to address these structural problems. For instance,

Excess Profit Tax was eliminated in 1991, and the Capital Transfer Tax scrapped in 1986. Tax rates on Companies profit payable on trade profits and investment incomes fell from 45% during 1970 to 1986 (when SAP was introduced to 40% between 1987 and 1991, further to 35% for period 1992 – 1995). Company Income Tax Rate is charged at the rate of 30% from 1996 to date. For companies having Hundred Million Naira (₦100,000,000.00) turnover. For small companies in the manufacturing industry and wholly export-oriented companies with turnover not exceeding one million naira (₦1,000,000.00), the rate is reduced to 20% in the first five calendar years of operation.

The tax is assessed on a proceeding year basis (i.e. tax is charged on profits for the accounting year ending in the year preceding assessment). The companies having less than Twenty-Five Million Naira (₦25,000,000.00) naira turnover are not liable to pay Company Income Tax in line with the Finance Act 2019. In respect of business profits, a non-resident company that has a fixed base or a permanent establishment (PE) in Nigeria is taxable on the profits attributable to that fixed base. As such, it is required to register for CIT and file its tax return.

Human Capital Development

Human development index was developed by Pakistani economist Mahbub Ul Haq and was further used to measure a country’s development by the United Nations Development programme (UNDP) Human Development Report Office. Human Development index (HDI) is a statistic composite index of life expectancy,

education (mean years of schooling upon entering the education system), and per capital income indicators, which are used to rank countries into four tiers of human development. A country scores a higher HDI when the life span is higher, the education level is higher and the gross national income GNI per capital is higher.

The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capital can end up with different human development outcomes. The human Development Index (HDI) is a summary measure of average achievement in key dimensions of Human Development: a long and healthy life, being knowledgeable and have a decent standard of living.

The HDI is a geometric mean of normalized indices for each of the three dimensions: expectancy at birth, the education dimension is measured by mean years and more and expected years of schooling for adults aged 25 years and more and expected years of schooling of children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of importance of income with increasing GNI. The scores for the three HDI dimensions indices are often aggregated into a composite index using geometric mean.

Human Development Reprint Office (HDRO) offers the other composite indices as broader proxy on some of the key issues of human development, inequality, gender disrupt and poverty. It also covers the creation of conclusive condition for the people to actively participate in the political and community life, environmental sustainability, protection of human equality (Ovunda, 2020). Human Development index considers fundamental factors not considered in life expectancy and poverty rates (Adegbe, Appolos & Olalekan, 2020). Human Development index is the process of enlarging people's freedoms and opportunities and improving their wellbeing.

It is about the real freedom ordinary people have to decide who to be and how to live (Social Research Council, 2016). Non income HDI value is calculated from the life expectancy and the education indicators, income HDI values is computed from an approximate standard of living measured by the value of goods and services produced in a country divided by the population (gross domestic product per capital).

Alternatively, according to (Ovunda, 2020) 'the income HDI value could be computed from the gross National Income (GNI) per capital, which is the aggregate income paid for the rest of the world. It is converted to dollar using purchasing power population. Long and healthy life is measured by life expectancy at birth, knowledge and education is measured by school enrolment. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita.

The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean. The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc. the HDRO offers the other composite indices proxy on some of the key issues of human development, inequality, gender disparity and poverty.

Gross Domestic Product

GDP encompassed all private and public consumption, government outlays, and investments, private inventories, paid-in construction and the foreign balance of trade (exports are added, imports are subtracted). Put simply, GDP is a broad measurement of a nation's overall economic activity. The final users of goods and services are divided into three main groups; households, businesses and the government. One way gross domestic product (GDP) is

calculated -known as the expenditure approach- is the adding of the expenditure made by those groups of users. Accordingly, GDP is defined by Consumption + Investment + Government Spending + Net Exports.

Also as stated Onuoha et al (2015), gross domestic product (GDP) is one of the primary indicators used to measure the healthiness of a country's economy. It is also used to determine the standard of living of individuals in an economy. Gross domestic product could be defined as the market value of all officially recognized final goods and services produced within a country in a given period of time. This implies that gross domestic product takes into account the market value of each goods and service rather than adding up the quantities of the goods and services directly. Gross domestic product is important in an economy because it is used to determine if an economy is growing more quickly or more slowly.

Furthermore, GDP is used to compare the size of economies throughout the world. Again, the gross domestic product is used in the comparison of relative growth rate of economies throughout the world. For instance, the Federal Reserve in the United States uses it as one of the indicators of whether the economy needs to be stimulated. The components of gross domestic product using the expenditure method include; consumption, investment, government expenditure, gross export and gross import. There are also two other methods of calculating the gross domestic product which are the value added (or production) approach and the income approach. In calculating GDP using either of the three approaches, it does not include intermediate goods, but only "new" products (final goods) and services, this is to avoid double counting which may lead to the presentation of inaccurate value of GDP.

There are two types of GDP in existence which includes; Real GDP and Nominal GDP. Where Real GDP is the measurement of economic output of a country minus the effect of inflation and Nominal GDP is the measurement that leaves the price changes in the estimate.

In Nigeria, GDP is calculated and reported on quarterly and annual basis by the National Bureau of Statistics (NBS), a Federal government agency under the supervision of Federal Ministry of Budget and National Planning.(Onuoha et al., 2015).

Theoretical Framework

This study was hinged on the ability-to-pay theory of taxation.

Ability-to-pay theory of taxation was propounded by Adam Smith considered as the father of economics in 1776. The ability- to-pay philosophy of taxation maintains that taxes should be levied according to a tax payer's ability to pay. The idea of a progressive tax income, that is people, businesses, and corporations with higher income can and should pay more in taxes. According to Kagan (2020), the ability to pay principle holds that those who have a greater ability to pay taxes measured by income and wealth should pay more. (b) Those that have enjoyed success should be willing to give back a little more to the society that helped them make that success possible.

Proponents of ability to pay" argue that a single dollar ultimately means less to a rich person than a wage earner, so the rich should pay more to equalize their sacrifice. The idea underlying ability-to-pay- theory of taxation is that everyone should make an equal sacrifice in paying taxes, and because people with more money effectively have less use for a given Dollar/Naira, paying more of them in taxes do not impose a greater burden. Let's look at it this way a person who earns a ₦1 Million a year, ₦10, 000 will not make much difference in his life, while it will make much difference to a person who earns only ₦60, 000 a year.

The argument for progressive taxation ability to pay holds that the society that government tax revenue has helped build infrastructure such as highways and fiber optic networks, a strong military, public schools, a free market system-provide the environment in which their success is possible and in which they can continue to enjoy that success. However, critics of progressive taxation argue that it is fundamentally unfair, they say it penalizes

hard work and success and reduces the incentive to make more money. Many argue that everyone should pay the same Income-tax-rate a “Flat rate” to make the system more equitable.

There is consensus on how ability should be measured using proxies such as income, wealth and endowment for consumption have prominently featured in the literature. Ability to pay theory relies heavily on the principle of progressive taxation (Ironkwe & Nnaji 2017), hence, it can be applied to both direct tax (e.g. personal income tax and company income tax) and indirect or consumption tax (e.g. value added tax and custom and excise duties, making it in appropriate framework for this study, since we are considering both classes of taxation. According to Mushgrave (1996), ability to pay theory has two dimensions; namely horizontal and vertical equity dimensions. While the horizontal equity focuses on people with the same ability and requires that they contribute the same amount to public expenditure, the vertical equity dimension advocates that people with greater ability should contribute more than the poorer people (Grassi, 2015). Both equity dimensions incorporate differences in tax payers’ ability in the tax burden distribution. It follows therefore, that if variability in income, wealth or endowment for spending is accounted for in the tax burden distribution, then taxation would be fair and optimal and would lead to

$$GDP = f(CIT)$$

$$HDI = f(CIT)$$

In functional form:

$$GDP = f(CIT)$$

$$HDI = f(CIT)$$

In econometric form:

$$GDP_t = \beta_0 + \beta_1 CIT_t + \mu_t$$

$$HDI_t = \beta_0 + \beta_1 CIT_t + \mu_t$$

$$GDP_t = \beta_0 + \beta_1 CIT_t + \beta_2 GP * CIT_t + \mu_t$$

$$HDI_t = \beta_0 + \beta_1 CIT_t + \beta_2 GP * CIT_t + \mu_t$$

economic growth. Thus, there is a positive relationship between equity distribution and economic growth.

Methodology

This study used an ex-post facto design, which focuses on events that have already occurred and does not allow the researcher to control or influence pertinent factors because they cannot be changed. The Nigerian economy's gross domestic product (GDP), human capital development, and non-oil tax revenue (business income tax) comprise the study population. A sample is taken into consideration for thirty (30) years, from 1993 to 2022.

The Central Bank of Nigeria (CBN) statistical bulletin, the National Bureau of Statistics (NBS), the Annual Abstract of Statistics (AAS), and, where relevant, the Federal Inland Revenue Service (FIRS) provided the data for the study. The GDP is the total amount of goods and services produced in a country, typically in a single year; the human development index (HDI) is a measure of the average accomplishments in important aspects of human development; and businesses' income tax is calculated as profits accruing in, derived from, brought into, or received from a trade, business, or investment. Since GDP and HDI are the study's dependent variables and corporate income tax is its independent variable, the following empirical model was estimated:

Where: f = Function of the model; β = Beta coefficient; β_0 = Interception of the model; β_1, β_2 = Co-efficient of the model; GDP = Gross Domestic Product; HDI = Human Development Index; CIT = Company Income Tax; t = time frame; μ = Error term of the model. Data obtained were analyzed using descriptive and inferential statistical analysis. In addition, unit root, co-integration tests, error correction model, and granger causality tests were carried out

Empirical Results**Table 1 Descriptive Statistics**

	CIT	GDP	HDI
Mean	515734.7	51419544.9	0.090
Std. Deviation	0.677	1.0430	-1.2100
Skewness	0.4270	0.4270	0.4270
Kurtosis	-1.1840	-0.4120	0.5120
Std. Error of Kurtosis	0.8330	0.8330	0.8330
Minimum	10451.0	1099201.5	0.2400
Maximum	1452709.0	145090261.02	0.5630
Sum	14493848.2	1310904611.2	13.663

Source: Researcher's Computation, 2025

CIT revenue has a mean of 515734.7, with maximum and minimum values of 1452709.0 and 10451, respectively, according to the descriptive statistics for the variables. The series is positively biased, albeit very little at 0.4270. GDP is favourably skewed, but very slightly at

0.4270, with a mean of 51419544.9 and maximum and minimum values of 145090261 and 1099201.5, respectively. For the periods under study with positive skewed series, the HDI has a mean value of 0.090, a maximum of 0.563, and a minimum of 0.2400.

Table 2: Pearson Correlation Matrix

		LCIT	LGDP	LHDI
LCIT	Pearson Correlation	1	.987**	.765**
	Sig. (2-tailed)		.000	.000
LGDP	Pearson Correlation	.987**	1	.768**
	Sig. (2-tailed)	.000		.000
LHDI	Pearson Correlation	.765**	.768**	1
	Sig. (2-tailed)	.000	.000	

Source: Researcher's Computation, 2025

The Pearson correlation matrix is displayed in Table 2, and the results suggest that there is a positive link between the study's variables due to strong correlation

coefficient values. Additionally, the correlation coefficients with values (0.000) below the 5% significance level demonstrated a meaningful association.

Table 3: Estimated Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLCIT	0.906991	0.904718	3..633760	0.014
C	41.31745	5.747878	7.188297	0.0001
R-squared	0.835642	Mean dependent var		42.95000
Adjusted R-squared	0.821903	S.D. dependent var		14.88087
S.E. of regression	15.49972	Akaike info criterion		8.496377
Sum squared resid	1921.930	Schwarz criterion		8.556894
Log likelihood	-40.48188	Hannan-Quinn criter.		8.429990
F-statistic	0.295675	Durbin-Watson stat		2.214994
Prob(F-statistic)	0.000027			

Source: Researcher's Computation, 2025

Given the positive signals of their respective coefficients, the static regression result in Table 3 shows a positive relationship between GDP and CIT. According to the findings, the gross domestic product will rise by around 0.90699 if the value of company income tax as non-oil tax collection increases. The positive correlations between gross domestic products imply that an increase in corporate income tax will raise gross domestic products by about 0.90699 units. Since the t-statistical value is greater than the crucial

value at the 0.05% threshold of significance, the t-statistic further demonstrated that CIT has a statistically significant impact on GDP. The model's capacity for explanation is also demonstrated by the coefficient of determination. The adjusted $R^2 = 0.8356$ value shows that changes in the explanatory variables account for about 83% of the change in gross domestic products, while the stochastic term accounts for the remaining 17%. The lack of serial association is indicated by the Durbin Watson statistic.

Table 4: Estimated Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NLCIT	1.749912	8.837207	4.387019	0.0060
C	57.18712	8.648361	6.957050	0.0001
R-squared	0.836274	Mean dependent var		42.95000
Adjusted R-squared	0.619865	S.D. dependent var		14.88087
S.E. of regression	10.83913	Akaike info criterion		8.048211
Sum squared resid	1179.236	Schwarz criterion		8.108728
Log likelihood	-21.46511	Hannan-Quinn criter.		7.981824
F-statistic	4.261379	Durbin-Watson stat		1.959962
Prob(F-statistic)	0.000121			

Source: Researcher's Computation, 2025

Given the positive signals of their corresponding coefficients, the static regression result in Table 4 shows a positive relationship between the human development index (HDI) and corporation income tax (CIT). The findings suggest that raising the value of CIT as a non-oil tax revenue will raise the human development index by around 1.749912. The positive correlations between the human development index and CIT imply that a rise in CIT will raise the human development index by roughly 1.749912 units. Since the t-statistical values are greater than the crucial value at the 0.05% level of

significance, the t-statistic further demonstrated that CIT has a statistically significant impact on the human development index.

The model's capacity for explanation is also demonstrated by the coefficient of determination. The adjusted $R^2 = 0.8362$ value shows that changes in the explanatory variables jointly account for about 83% of the change in the human development index, with the stochastic term accounting for the remaining 17%. The lack of serial association is indicated by the Durbin Watson statistic.

Table 5: Augmented -Dickey Fuller (ADF) Unit Root Test Results

	ADF-Test Statistic	95% Critical ADF Value	Remark
GDP	1.7881	2.96	Non-stationary
HDI	1.7881	„	Non-stationary
CIT	2.9573	„	Stationary
Unit root test at 1st difference: Intercept and Trend			
	ADF-Test Statistic	95% Critical ADF Value	Remark
GDP	3.1688	2.96	Stationary
HDI	3.829		
CIT	6.4613	„	„

Source: Researcher's Computation, 2025

The unit roots were analysed using the Augmented-Dickey Fuller (ADF) test. Levels and first difference are used to display the results. This allows us to find the unit root between the time series in a comparative manner and to get more reliable findings. The outcome shows that every variable has an ADF value below the 2.96 95% critical ADF threshold. This implies that the levels of the time series for these variables are stationary. Next, we

apply the unit root test to each of the resulting time series using the initial differences of the corresponding variables. The unit root test results for these variables in first differencing indicate that the absolute ADF values are higher than the 95% critical ADF values. All variables are determined to be stationary based on these findings. As a result, we agree that the variables have unit roots.

Table 6: Co-integration Test (Trace Statistics)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.989414	301.9807	125.6154	0.0000
At most 1 *	0.964616	197.3720	95.75366	0.0000
At most 2 *	0.877951	120.5175	69.81889	0.0000

* rejection of hypothesis at @ 0.05 level **MacKinnon-Haug-Michelis (1999) p-value

Source: Researcher's Computation, 2025

For each given number of non-stationary variables of the same order, the Johansen method calculates the number of co-integrated vectors. The Johansen co-

integration methodology is used in the study to examine the co-integrating qualities of the data.

Table 7: Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.989414	104.6087	46.23142	0.0000
At most 1 *	0.964616	76.85450	40.07757	0.0000
At most 2	0.877951	48.37659	33.87687	0.0005

*rejection of hypothesis @ 0.05 level **MacKinnon-Haug-Michelis (1999) p-values

Source: Researcher's Computation, 2025

The test's results, which use the trace and maximum Eigen-value statistics, reject the null hypothesis that the variables are co-

integrated because there isn't a co-integrated vector. We go on to define the long-term equation based on this outcome.

Table 8: Granger Causality Test Result

Null Hypothesis:	F-Statistic	Prob.
HDI does not Granger Cause CIT	13.5117	0.0003*
CIT does not Granger Cause HDI	5.134	0.0172*
GDP does not Granger Cause CIT	4.24554	0.0309*
CIT does not Granger Cause GDP	0.20658	0.8153

Source: Researcher's Computation, 2025

At the five percent significance levels, we discover that there is a directional Granger causal relationship between CIT revenue and HDI and vice versa. Additionally, we

discover that, at the five percent significance levels, there is directional Granger causation from CIT revenue to HDI and vice versa.

Table 9: Error Correction Model (ECM) Results (HDI)

	A-priori Sign	Coefficient () standard Error [] t-values	Coefficient () standard Error [] t-values
C		1.4665* (186.146) [125.615]	0.07512 (0.08153) [0.92138]
CIT	+	1.7499* (0.3988) [4.3875]	0.7751* (0.1422) [5.4529]
Short run Estimates			
	Coefficient	Standard error	t-statistic
D(Log(HDI ₋₂))		0.31067* (0.2430) [1.2785]	0.30482* (0.21583) [1.4123]
D(Log(CIT ₋₂))		0.48657 (0.46097) [1.0555]	0.61939* (0.43213) [1.4337]
Ecm(-1)		-0.2178 (0.0959) [-2.2708]	-0.4619* (0.54343) [-6.3899]
R ²		0.3499	0.5122
Breusch-Godfrey LM Test		0.4158	
Breusch-Pagan-Godfrey Normality		0.3175	0.0805

Source: Researcher's Computation, 2025

The results of the error correction model (ECM) show how the independent variables' structural coefficients relate to the human development index. The findings show that, at the 5% level, CIT has a statistically significant ($t=4.3875$) and positive (1.7499) impact on Nigeria's human development

index. This suggests that an increase in corporate income tax collections leads to an increase in government spending. In particular, the outcome suggests that the human development index rises by roughly 17.49% for every 10% increase in CIT revenue.

The Breush-Goffery LM test for serial correlation has a probability value of 0.4731, which demonstrates that the null hypothesis of no serial correlation in the residuals is accepted at the 5% level, according to the model summary and regression diagnostics indicators, which reveal an R² of 35%. Lastly, the normality test verifies that there are no outliers in the model. The Breusch-Pagan-Godfrey test for heteroskedasticity also reveals that the p-value (0.3175) demonstrates that the null hypothesis of homoscedastic errors is accepted at the 5% level.

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Table 10: Error Correction Model (ECM) Results (GDP)

	Aprori sign	Coefficient() standard Error [] t-values	Coefficient () standard Error [] t-values
C		1.4665* (186.146) [125.615]	1.4665* (186.146) [125.615]
Log(CIT)	+	-0.90699* (0.2496) [-3.6333]	-0.76237* (0.20481) [-3.7223]
Short run Estimates			
	Coefficient	Standard error	t-statistic
D(Log(GDP ₋₂))		0.10313 (0.2509) [0.4111]	0.1999 (0.1945) [1.0278]
D(Log(CIT ₋₂))		0.18935 (0.6663) [0.2842]	0.25259 (0.50493) [0.5002]
Ecm(-1)		-0.7187 (0.2661) [-2.7011]	-0.6450* (0.1868) [-3.45212]
R ²		0.3902	0.6616
Adjusted R ²			0.4923
Breusch-Godfrey LM Test [Serial Correlation]		0.4158	
Breusch-Pagan- Godfrey [Heteroskedasticity]		0.3175	
Normality			0.0805

Source: Researcher's Computation, 2025

The structural coefficients of the non-oil tax revenue variables and their correlation with GDP are shown by the error correction model (ECM) results. The findings show that, at the 5% level, CIT has a positive

(0.90699) and statistically significant (t=3.633) impact on Nigeria's GDP. This suggests that a rise in corporate income tax receipts leads to a rise in the GDP. In particular, the outcome suggests that a 10%

rise in CIT revenue causes the GDP to rise by roughly 9.0%.

The Breush-Goffery LM test for serial correlation and the Breusch-Pagan-Godfrey test for heteroskedasticity confirm that the null hypothesis of no serial correlation and homoscedastic errors is accepted at the 5% level. Lastly, the normality test also confirms that there are no outliers in the model. The model summary and regression diagnostics indicators show that R² of 39%. The Breush-Goffery LM test for serial correlation and the Breusch-Pagan-Godfrey test for heteroskedasticity confirm that the null hypothesis of no serial correlation and homoscedastic errors is accepted at the 5% level, and the normality test also confirms that there are no outliers in the model, according to the model summary and regression diagnostics indicators, which show an R² of 66%.

Discussion

The empirical analysis indicates a robust correlation between Company Income Tax (CIT) and macroeconomic indicators in Nigeria. Descriptive statistics for CIT revenue reveal a mean of 483,128, with a range spanning from 10,451 to 1,452,709. Regression analysis further demonstrates that CIT exerts a positive and statistically significant influence on Gross Domestic Product (GDP) (coefficient = 0.90699; $t = 3.633$; $p < 0.05$). Specifically, the data suggests that a 10% appreciation in CIT revenue corresponds to an approximate 9% growth in GDP. These findings necessitate the rejection of the null hypothesis regarding CIT's insignificance and align with the conclusions of Amos et al. (2017) concerning the impact of tax revenue on Nigerian economic development.

Beyond GDP, the study explored the relationship between CIT and the Human Development Index (HDI). Statistical tests confirmed the normality of the series, supported by a Jarque-Bera value of 3.135 ($p = 0.208$) and a moderate positive skewness of 0.58. The results indicate that CIT has a positive (1.7499) and significant ($t = 4.387$) effect on HDI at a 5% level of significance. This suggests that a 10% increase in CIT collections could potentially

drive a 17.49% improvement in human development outcomes. As HDI reflects essential dimensions such as health, education, and living standards, the administration of CIT remains pivotal; higher tax yields directly expand the fiscal space required for transformative public projects.

However, challenges to tax yield persist. Drawing on Ironkwe and Nnaji (2017), the study notes that tax provisions failing to account for capital recoupment can stifle profitability and subsequent revenue. To optimize the contribution of CIT to national progress, this research advocates for intensified tax education for both the workforce and the citizenry. Consistent with Davies and Kalagbor (2020), such initiatives should integrate electronic filing systems to improve enlightenment and bolster tax compliance, ensuring that tax proceeds effectively translate into enhanced public welfare and sustained economic growth.

Conclusion and Recommendations

Taxation represents a fundamental and enduring mechanism for generating the capital required to provide essential public services within a specific jurisdiction. Historically, governments worldwide have been tasked with the core responsibility of establishing vital infrastructure and fulfilling critical obligations to their citizens, including economic stabilization, wealth redistribution, and the provision of public goods. Tax revenues are the primary fiscal resource used to execute these traditional roles, supporting projects such as road construction, the maintenance of domestic security, national defense, and the regulation of commerce to ensure social and economic stability.

The central objective of taxation is to fund government expenditures and facilitate the redistribution of wealth, which directly underpins national development efforts. This study specifically analyzed the correlation between non-oil tax revenues and Nigerian economic development. The findings indicate that Company Income Tax (CIT) exerts a significant and positive influence on both the Gross Domestic

Product (GDP) and the Human Development Index (HDI) in Nigeria. Consequently, the study suggests that the government should prioritize the allocation of CIT proceeds toward initiatives that enhance the human development index, given its proven upward impact. To optimize this revenue stream, it is recommended that authorities proactively mitigate CIT evasion among corporations while simultaneously broadening the existing tax base.

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Research **Demographic Physiognomy as Determinant of Choice of Upward Influence Strategy among Public Sector Employees**

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Abstract

The study examined demographic physiognomy as determinant of the choice of upward influence strategy among public sector employee in Delta State. Three questions were raised for the study which led to the formulation of three hypotheses. The study employed quantitative and descriptive survey design. The population for the study is 10,934 in the 25 local government authorizes in Delta state. The sample size was determined using the Lesley Kish's formula where it obtained 168 sample size. The instrument for the study was the use of structured questionnaires validated and tested for reliability test at 0.72 which was adjudged reliable for the study. The instrument was then administered to the sampled employee of the public sector employee. Out of the 168 administered questionnaires only 163 were useful for the analyses. Data collected from the questionnaire were then subjected to statistical analysis. The result revealed that there is no significant difference in the choice of upward influence strategies between younger and older public sector employees; There is significant difference in the choice of upward influence strategies between public sector employees from different religious backgrounds and there is no significant difference in the choice of upward influence strategies between public sector employees from different cultural backgrounds in Delta State, Nigeria. Based on the finding the following recommendation among other were made that Promoting diversity and inclusion initiatives is crucial, given the significant impact of religious background on influence strategies, to create a more respectful and inclusive work environment.

Keywords: *Demographic physiognomy; Upward influence strategy; Religious background; Public sector*

Introduction

In the contemporary workplace, understanding the dynamics of upward influence strategies among public sector employees is paramount for organizational effectiveness and employee advancement. Upward influence, defined as the ability of employees to influence their superiors, plays a crucial role in decision-making processes, career progression, and organizational performance (Nguyen & Le, 2022; Ng, Sears & Bakkaloglu, 2021). However, the factors that influence the choice of upward

influence strategies remain underexplored, particularly within the context of demographic physiognomy. Demographic physiognomy, which includes age, gender, and culture, has been identified as a potential determinant of influence strategies in organizational settings (Smith, Thompson & Yeo, 2018).

In Nigeria, specifically in Delta State, the public sector is a significant employer, and understanding how demographic factors influence the choice of upward influence strategies is crucial for effective

management and policy-making. Despite the importance of this topic, there is a notable gap in the literature regarding the relationship between demographic physiognomy and the choice of upward influence strategies among public sector employees. The Nigerian public sector, particularly in Delta State, plays a critical role in the country's socio-economic development. As a significant employer, the public sector in Delta State comprises a diverse workforce representing various demographic groups (Ojo & Akande, 2023). Understanding the factors that influence the behaviour and decision-making of public sector employees is essential for enhancing organizational performance and achieving development goals.

One such factor that has received limited attention in the Nigerian context is demographic physiognomy, which includes age, gender and other demographic attribute. Demography has been found to influence various aspects of organizational behaviour, including leadership styles, communication patterns, and conflict management strategies (Smith et al., 2018). In the context of upward influence, employees may use different strategies to influence their superiors based on their demographic characteristics. For example, younger employees may prefer more assertive strategies, while older employees may rely on experience and seniority.

Similarly, male and female employees may adopt different influence tactics due to societal expectations and gender norms. Despite the potential impact of demographic factors on upward influence strategies, there is a paucity of research examining this relationship, particularly in the Nigerian public sector (Jones, Smith & Williams, 2020). Understanding how demographic physiognomy influences the choice of influence tactics among public sector employees in Delta State is crucial for effective management and policy-making. By exploring this relationship, this study seeks to contribute to the existing body of knowledge on organizational behaviour and provide practical insights for enhancing leadership effectiveness and employee engagement in the public sector.

The choice of upward influence strategies among public sector employees in Delta State, Nigeria, is influenced by various factors. Age, religion, and culture play a crucial role in shaping these strategies. Younger employees may prefer technology-driven communication, while older employees may prefer traditional methods. Understanding these factors can help organizations foster intergenerational collaboration and maximize employee contributions. Religion, with Christianity and Islam being dominant religions, can influence how individuals perceive authority and communicate. The intersection of age, religion, and culture can create complex dynamics, highlighting the need for a nuanced understanding of these factors. Cultural factors, such as collectivism and respect for authority, can also shape these strategies, enhancing organizational effectiveness and employee satisfaction.

Conversely, the study seeks to address demographic physiognomy influences the choice of upward influence strategies among public sector employees in, Nigeria. By identifying the demography that shape employees' choice of influence tactics, this research aims to provide valuable insights for organizational leaders, human resource practitioners, and policymakers. Understanding these dynamics can contribute to the development of more effective strategies for managing and leading public sector organizations in Delta State and beyond.

Objective of the study

The focus of the study is demographic physiognomy as determinant of the choice of upward influence strategy among public sector employee. The specific objectives were to:

- i) examine the influence of age on the choice of upward influence strategies among public sector employees in Delta State,
- ii) investigate the impact of religion on the selection of upward influence strategies among public sector employees in Delta State.
- iii) explore the role of culture in shaping the choice of upward influence

strategies among public sector employees in Delta State.

REVIEW OF RELATED LITERATURE

Upward Influence Strategy

The choice of upward influence strategy among public sector employees in Delta State, Nigeria, is influenced by various factors, including organizational culture, power dynamics, and individual characteristics. Research suggests that employees in the public sector may use different influence tactics depending on their perceived power distance and the organizational hierarchy (Adeniji et al., 2020). For example, employees may use tactics such as ingratiation, coalition building, and consultation to influence their superiors, based on their assessment of the power dynamics within the organization. Conversely, the organizational culture can play a significant role in shaping the choice of influence strategies among public sector employees.

A study by Ojo et al. (2019) found that employees in Nigerian public sector organizations often rely on informal networks and personal relationships to gain influence, reflecting the collectivist nature of Nigerian culture. Understanding these cultural dynamics is crucial for organizational leaders seeking to create a supportive and inclusive work environment that fosters effective communication and collaboration. In addition to organizational culture, individual characteristics such as personality traits and communication styles can also influence the choice of upward influence strategies. For example, employees who are extraverted and assertive may be more inclined to use direct influence tactics, such as persuasion and assertiveness, while introverted employees may prefer more indirect tactics, such as rational persuasion and ingratiation (Bolade & Ogunlusi, 2021).

By considering these individual differences, organizations can tailor their leadership development programs and communication strategies to enhance employee engagement and performance. In the whole, the choice of upward influence strategy among public

sector employees in Delta State, Nigeria, is a complex and multifaceted process that is influenced by various factors. By understanding these factors and their impact on influence tactics, organizations can develop more effective leadership strategies and communication practices that promote employee engagement, collaboration, and organizational success.

Age as a Factor

Age is a fundamental aspect of social identity that can influence the choice of influence strategies among public sector employees. Social identity theory suggests that younger employees may identify more strongly with their age group and may be more inclined to use influence tactics that are common among their peers, such as social media engagement and networking. In contrast, older employees may identify more with their generational cohort and may use influence tactics that are consistent with their life experiences and values, such as traditional communication methods and seniority-based influence.

Age is a significant factor influencing the choice of upward influence strategies among public sector employees in Delta State, Nigeria. Younger employees may be more inclined to use assertive tactics, such as persuasion and coalition building, to influence their superiors, as they may be more familiar with and adept at using modern communication channels and technology-driven approaches (Ojeleye & Aregbesola, 2021). In contrast, older employees may rely more on traditional methods and face-to-face interactions, leveraging their experience and seniority to gain influence within the organization (Obalola & Olaniyi, 2020). Understanding these age-related differences in influence tactics is crucial for organizational leaders seeking to foster intergenerational collaboration and maximize employee contributions across different age groups.

Recent research has also highlighted the role of age in shaping the choice of upward influence strategies in organizational settings. A study by Adelabu et al. (2020) found that age significantly influenced the use of influence tactics among employees in

Nigerian public sector organizations. The study revealed that younger employees were more likely to use assertive tactics, such as rational persuasion and inspirational appeals, while older employees were more inclined to use softer tactics, such as ingratiation and consultation. These findings underscore the importance of considering age as a key factor in understanding the dynamics of upward influence in the workplace.

Religion as a Factor

Religion is another important dimension of social identity that can shape the choice of upward influence strategies. Religious beliefs and practices can influence individuals' values, norms, and behaviours in the workplace. For example, employees who adhere to certain religious beliefs may prioritize humility, respect, and ethical behaviour in their interactions with superiors, influencing tactics they use to gain influence. Understanding how religious identity intersects with other aspects of social identity, such as age and culture, can provide a more comprehensive understanding of the factors that influence upward influence strategies.

Religion can significantly influence the choice of upward influence strategies among public sector employees in Delta State, Nigeria. Religious beliefs and practices can shape individuals' values, norms, and behaviours, influencing how they approach influence tactics in the workplace (Adewoyin & Ajagbe, 2021). For example, employees who adhere to certain religious beliefs may prioritize humility, respect, and ethical behaviour in their interactions with superiors, leading them to use influence tactics that align with these values. Understanding how religious identity intersects with other aspects of social identity, such as age and culture, can provide a more comprehensive understanding of the factors that influence upward influence strategies.

Recent research has highlighted the role of religion in shaping the choice of upward influence strategies in organizational settings. A study by Afolabi et al. (2020) found that religious beliefs significantly influenced the use of influence tactics

among employees in Nigerian public sector organizations. The study revealed that employees who identified strongly with their religious beliefs were more likely to use influence tactics that reflected their religious values. These findings underscore the importance of considering religion as a key factor in understanding the dynamics of upward influence in the workplace.

Culture as a Factor

Culture, as defined by Hofstede (2001), refers to the collective programming of the mind that distinguishes one group or category of people from another. Cultural dimensions theory suggests that culture influences individuals' values, beliefs, and behaviors, including their approach to communication and influence. In the Nigerian context, which is characterized by cultural diversity, employees from different cultural backgrounds may use different influence tactics based on their cultural values and norms. By exploring how culture interacts with age and religion to shape upward influence strategies, this study aims to provide a more nuanced understanding of the complexities of influence in the public sector.

Culture plays a significant role in shaping the choice of upward influence strategies among public sector employees in Delta State, Nigeria. Nigerian culture is characterized by values such as respect for authority, collectivism, and emphasis on interpersonal relationships (Ogunnaike & Adeyeye, 2021). These cultural values can influence how employees approach influence tactics in the workplace. For example, employees may use tactics such as ingratiation and coalition building to gain influence, drawing on their interpersonal relationships and respect for authority figures.

Recent research has highlighted the importance of considering culture in understanding the dynamics of upward influence strategies in organizational settings. A study by Akintayo et al. (2020) found that cultural dimensions significantly influenced the choice of influence tactics among employees in Nigerian public sector organizations. The study revealed that

employees who identified strongly with collectivist values were more likely to use influence tactics that emphasized group harmony and consensus-building, such as consultation and collaboration. These findings underscore the importance of considering culture as a key factor in understanding the complexities of upward influence in the workplace.

Overall, this conceptual framework integrates social identity theory and cultural dimensions theory to examine how age, religion, and culture influence the choice of upward influence strategies among public sector employees in Delta State, Nigeria. By exploring these dynamics, the study seeks to contribute to the existing body of knowledge on organizational behaviour and provide practical insights for enhancing leadership effectiveness and employee engagement in multicultural environments.

Theoretical Underpinning

The study is hinged on the following theory: French and Raven's Five Bases of Power (French & Raven, 1959). One theory that can be applied to the study of upward influence strategy among public sector employees in Delta State, Nigeria, is French and Raven's Five Bases of Power. This theory identifies five primary sources of power that individuals can use to influence others: coercive power, reward power, legitimate power, referent power, and expert power (French & Raven, 1959). In the context of upward influence, public sector employees may utilize these sources of power to influence their superiors. For example, an employee may use coercive power by threatening negative consequences if their request is not met, or reward power by offering incentives for compliance.

Legitimate power stems from the formal authority granted to an individual, while referent power is based on the admiration and respect others have for the individual. Finally, expert power is derived from one's knowledge and expertise in a particular area. Applying French and Raven's Five Bases of Power to the study, researchers can examine how public sector employees in Delta State utilize these different sources of power in

their upward influence attempts. This can provide insights into the effectiveness of different influence tactics and the underlying mechanisms that drive upward influence behaviour in the public sector context.

Empirical Studies

The field of upward impact strategy study is still in its infancy, there aren't many empirical studies to guide us (Smith, Watkins, Burke, Christian, Smith, Hall, and Simms, 2013). Few works on upward influence were discovered by Lee, Han, Cheong, Kim, and Yun (2017) during their meta-analytic assessment of publications on influence strategy published between 2003 and 2017. Studies in Africa, particularly in Nigeria, have been comparatively few, despite the fact that the majority come from North America and Asian nations. This suggests that upward influence technique should be studied extensively. In order to ascertain if demographic factors influence the adoption of such methods, this study looked at the least and most often used tactics used by employees to influence their superiors.

Van Tran, Nguyen and Nguyen (2023), studied the prevalence of social commerce platforms that share images has sparked a fresh interest in the subject of online impulsive purchase. These platforms have special qualities that encourage social comparison and impulsive purchasing. Nevertheless, in the context of image-oriented social commerce, not much study has been done on the connection between upward social comparison and impulsive purchase. 318 Vietnamese university students provided the data, which was then evaluated using structural equation modeling. The findings show that benign envy acts as a mediator between teenagers' impulsive purchasing behaviour and upward social comparison. It's interesting to note that benign jealousy and upward social comparison have opposite impacts on impulsive purchase when self-esteem is high. Kennedy et al (2004), carried out a research aimed to explore the relationships between cultural values, social beliefs, and influence strategies across 12 countries¹. The

theoretical framework employed is the theory of planned behaviour, which posits that individuals consider the implications of their actions before deciding to engage or not engage in a particular behaviour. The study focuses on three main constructs: influence strategies (including persuasive, assertive, and relationship-based approaches), social beliefs (such as cynicism, reward for application, religiosity, fate control, and social complexity), and cultural values (specifically uncertainty avoidance, in-group collectivism, and future orientation).

Smith, Brown and Johnson (2021) carried out a study on the Influence of Demographic Factors on Upward Influence Strategies: A Meta-Analytic Review, applying meta-analytic review, examines the influence of demographic factors, including age, gender, and cultural background, on the choice of upward influence strategies. The study finds that while age and cultural background have a moderate effect on influence strategies, gender has a minimal effect. These findings highlight the importance of considering demographic factors when designing organizational interventions to enhance upward influence strategies.

In a study of Wang, Zhang, and Liu (2020) Exploring the Role of Age in Upward Influence Strategies: A Cross-Cultural Study, they apply cross-cultural study investigates the role of age in the choice of upward influence strategies among employees in China and the United States. The findings reveal that age significantly influences the choice of influence strategies, with younger employees more likely to use assertive communication and older employees more likely to use relationship-building strategies.

In another research on Gender Differences in Upward Influence Strategies: An Experimental Study, Chen and Lee (2017), in an ex experimental study investigates gender differences in the choice of upward influence strategies among employees in Taiwan. The findings reveal that gender has a significant impact on influence strategies, with male and female employees using different approaches to influence their superiors.

Zhang, Wang and Liu (2020) carried out a research on Demographic Differences in Upward Influence Strategies: A Cross-Sectional Study where in a cross-sectional study they examines the demographic differences, including age, gender, and cultural background, in the choice of upward influence strategies among employees in China. The findings suggest that age and cultural background significantly influence the choice of influence strategies, with younger employees and those from collectivist cultures more likely to use collaborative approaches.

Patel and Shah (2019) carried out study on the Role of Age and Religious Background in Upward Influence Strategies: A Qualitative Study in a qualitative study explores the role of age and religious background in the choice of upward influence strategies among public sector employees in India. The findings reveal that age and religious background play a significant role in shaping influence strategies, with older employees and those from different religious backgrounds using distinct approaches to influence their superiors.

Wong and Chan(2018) study a work on a title Cultural Values and Upward Influence Strategies: A Cross-Cultural Comparison with a cross-cultural comparison study investigates the relationship between cultural values and the choice of upward influence strategies among employees in Hong Kong and Singapore. The findings suggest that employees' cultural values significantly influence their choice of influence strategies, with employees from different cultural backgrounds using distinct approaches to influence their superiors.

Methodology

The study employed descriptive survey design. The study was carried out in the three Senatorial Districts that make up Delta State, whereas Delta State is one of the states amongst the six states in the south-south Nigeria. For public sector ease of governmental administration, Delta is divided into three political zones also known as senatorial districts: Northern,

Central and Southern political zones. The population for the study is centered on local government workers. Delta State has just 25 local government areas. The population size is 10,934. Since the entire population of local government workers is above 10,000, Lesley Kish's formula (1965) was used to determine the sample size of the study, resulting to 168 being the sample size.

To further determine which area to administer the research instrument, the researcher made use of multistage cluster sampling being appropriate, progressively smaller groups were being used at each stage to take a sample from the population. This approach is frequently used, where there is wider surveys cannot be reached within a given possible time to gather data from a sizable, geopolitical dispersed zones (Obilor, 2023). Thus, the researcher made use of 3 clusters or block representing, three (3) political zones. Each zones is made up of 56 employees bringing the total sample size into 168 participants.

In order to obtain data regarding the choice of upward influences strategy among local government employees, who make up the majority of the public sector, a structured questionnaire was used in this study. The

respondents were asked to rate and rank the question statement on a scale of 1 to 5, where 1 represents a low ranking rate and 5 represents a high ranking rate. Reliability instrument was put to the test using the test-retest approach. In wine stores in Edo State, Nigeria, the 25-item reliability test questionnaire was used. Next, it was tested with Cronbach's alpha (α). The results of the Cronbach Alpha reliability test indicated an overall score of 0.72, which was considered dependable.

The primary instrument for collecting data was a questionnaire that was distributed to a sample of local government workers. To aid with the supervised and guided administration of the questionnaire in the study region, the researcher hired a research assistant. The research assistant obtained the required instruction and background information. The staff members who participated in the survey were given a brief explanation of the study's objectives and findings and they were requested to provide adequate information based on the questionnaire. Data obtained were analyzed using analysis of variance (ANOVA) and Post Hoc Test).

Results

Table 1: T-test Analysis for the for the Demographic Physiognomy Mean differences

Variables	t	df	p-value	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
AGE	37.889	162	.000	*3.53988	3.3554	3.7244
CULTURE	28.966	162	.000	*1.82822	1.7036	1.9529
RELIGION	25.650	162	.000	*1.68098	1.5516	1.8104
GROUP (<i>Collaborative Approach, Adaptability, Expertise Emphasis, Relationship Building</i>)	37.309	162	.000	*3.87117	3.6663	4.0761

Source: Compiled by the Researcher (2026); *significance @ $p < 0.05$, * mean deference*

The t-test analysis table above shows the independent samples t-tests comparing the mean scores of different groups on various variables (Age, Culture, Religion) and the

choice of upward influence strategy (Group) where to a hypothetical test value held constant = 0. The following were the outcome: On account of Age, the t-test for

age indicates the comparison is against a mean difference of 0., the p-value is less than $p < 0.001$ at 0.05 level of significance, suggesting that the mean difference in age between the groups is statistically significant. The mean difference in age between the groups is 3.54 years, with a 95% confidence interval ranging from 3.36 to 3.72 years. This means that, on average, there is a 3.54-year difference in age between the groups, and we are 95% confident that the true difference falls between 3.36 and 3.72 years.

For Culture, the t-test shows that where other things held constant at test value of 0., the p-value is less than .001, indicating that the mean difference in culture between the groups is statistically significant. The mean difference in culture between the groups as shown in the above table is 1.83, with a 95% confidence interval ranging from 1.70 to 1.95. This means that, on average, there is a 1.83 difference in culture between the groups, and we are 95% confident that the true difference falls between 1.70 and 1.95. Relating to Religion, similar to the previous variables, the t-test for religion compares the

mean difference against where other thing held at 0 and has a p-value of less than .001, indicating statistical significance. the mean difference in religion between the groups is 1.68, with a 95% confidence interval ranging from 1.55 to 1.81. This means that, on average, there is a 1.68 difference in religion between the groups, and we are 95% confident that the true difference falls between 1.55 and 1.81.

On accounting of the upward group (choice of upward influence strategy), the t-test also compares the mean difference against 0 and has a p-value of less than .001, indicating statistical significance. The mean difference between the groups is 3.87, with a 95% confidence interval ranging from 3.67 to 4.08. This means that, on average, there is a 3.87 difference between the groups, and we are 95% confident that the true difference falls between 3.67 and 4.08. In a nutshell, these results suggest that there are statistically significant differences in age, culture, religion, and group (upward influence strategy) being compared.

Table 2: Summary of ANOVA Statistics

ANOVA						
Group		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	6.423	4	1.606	1.132	.343
	Within Groups	224.068	158	1.418		
	Total	230.491	162			
Culture	Between Groups	.695	4	.174	.263	.901
	Within Groups	104.495	158	.661		
	Total	105.190	162			
Religion	Between Groups	7.886	4	1.972	2.952	.022
	Within Groups	105.525	158	.668		
	Total	113.411	162			

Source: Compiled by the Researcher (2026)

The table of ANOVA results above, provide insights into the differences in the choice of upward influence strategies based on age, religion, and culture among public sector employees. First, the F-test for age groups shows an F-value of 1.132 with a p-value of .343, which is not significant ($p > .05$).

Therefore, there is no significant difference in the choice of upward influence strategies between younger and older public sector employees.

Second, the F-test for religious backgrounds shows an F-value of 2.952 with a p-value of .022, which is significant ($p < .05$).

Therefore, there is a significant difference in the choice of upward influence strategies between public sector employees from different religious backgrounds. Third, the F-test for cultural backgrounds shows an F-value of 0.263 with a p-value of .901, which is not significant ($p > 0.05$). Therefore, there is no significant difference in the choice of upward influence strategies between public sector employees from different cultural backgrounds.

Conversely, the ANOVA results indicate that while there is no significant difference in the choice of upward influence strategies between younger and older public sector employees or between different cultural backgrounds, there is a significant difference based on religious background. Focusing on each of the hypotheses regarding the choice of upward influence strategies among public sector employees in Delta State, Nigeria the following discussion were made:

Discussion

Age and upward influence strategy: The study examined the influence of age on the choice of upward influence strategies among public sector employees. Contrary to expectations, the results indicated no significant difference in influence strategies between younger and older age employees. This finding aligns with recent research suggesting that age may not be a significant factor in determining influence strategies in organizational settings (Ng et al., 2021). Organizations should recognize that employees of different age groups may utilize similar strategies to influence superiors. This emphasizes the importance of individualized approaches to leadership development and mentoring, rather than relying on age-based assumptions.

Religion and upward influence strategy: In terms of religious background, the study found a significant difference in the choice of influence strategies among public sector employees from different religious backgrounds. This finding is consistent with literature highlighting the impact of religious beliefs on behavior in organizational contexts (Felps & Mitchell, 2020). Organizations should acknowledge

the influence of religion on employee behavior and consider implementing diversity and inclusion programs that accommodate varying religious beliefs. Understanding these differences can enhance communication and collaboration among employees from diverse religious backgrounds.

Culture and upward influence strategy: Regarding cultural background, the study did not find a significant difference in influence strategies based on cultural backgrounds. This result suggests that while cultural differences exist, they may not always translate into differences in behaviour or strategies among public sector employees. However, it is essential for organizations operating in multicultural environments to recognize and respect these differences. Emphasizing common goals and values can foster a unified approach to influence and decision-making, contributing to organizational cohesion (Javidan & House, 2020).

Summarily, while age and cultural background may not significantly influence the choice of upward influence strategies among public sector employees, religious background appears to play a role. Organizations should consider these findings in their diversity and inclusion efforts, ensuring that policies and practices account for the diverse backgrounds and beliefs of their employees. Further research could explore the specific influence strategies employed by employees from different religious backgrounds and their effectiveness in organizational contexts.

Conclusion and Recommendations

The study investigated the impact of age, religion, and cultural background on the choice of upward influence strategies among public sector employees in Delta State, Nigeria. The results indicated that age and cultural background did not significantly influence the choice of influence strategies. However, there was a significant difference based on religious background, suggesting that employees from different religious backgrounds may employ distinct strategies in influencing their superiors. These findings highlight the complex interplay

between demographic factors and influence strategies in organizational settings, emphasizing the importance of considering individual differences in leadership development and diversity initiatives.

In conclusion, this research excavates the understanding of how demographic factors influence the choice of upward influence strategies among public sector employees in Delta State, Nigeria. The findings suggest that while age and cultural background may not significantly impact the choice of influence strategies, religious background plays a role in shaping these strategies. Organizations should take into account the diversity of their workforce, particularly in terms of religious beliefs, when developing leadership development programs and diversity initiatives. By acknowledging and accommodating these differences, organizations can create more inclusive and effective environments for their employees.

Furthermore, the study highlights the importance of considering individual differences and cultural nuances in organizational settings. While age and cultural background may not directly impact influence strategies, they are part of a broader context that influences employee behaviour. Future research could delve deeper into the specific influence strategies employed by employees from different religious backgrounds and how these strategies contribute to organizational outcomes. Overall, understanding the interplay between demographic factors and influence strategies can lead to more effective leadership practices and organizational policies that benefit both employees and organizations. From the finding the following recommendations is being made:

- i) Organizations should tailor leadership development programs to individual needs, avoiding generational or cultural stereotypes, to support employees in effectively influencing others.
- ii) Promoting diversity and inclusion initiatives is crucial, given the significant impact of religious background on influence strategies, to

create a more respectful and inclusive work environment.

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Impact of Public Service Motivation on Employee Performance in Government Institution: A Study of Delta State Civil Service Commission

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Abstract

This study was motivated by the growing concern over the declining performance and morale of civil servants in sub-national government institutions in Nigeria, particularly within the Delta State Civil Service Commission, despite the introduction of numerous reforms and motivational interventions between 2019 and 2024. Titled "Impact of Public Service Motivation on Employee Performance in Government Institution: A Study of Delta State Civil Service Commission," the research sought to critically examine the role of public service motivation (PSM) in influencing employee performance in a politically and administratively volatile public sector environment. Data were collected using a structured questionnaire administered to a proportionally stratified sample of three hundred and forty-two (342) civil servants across five departments. The instrument was validated through a pilot test, yielding Cronbach's alpha values ranging from 0.78 to 0.91, indicating strong internal reliability. Data were analysed using descriptive statistics and one-way analysis of variance (ANOVA) to assess the effect of key motivational variables. The findings revealed significant differences in employee performance across all motivational dimensions examined. The p-values for each hypothesis tested were below the 0.05 threshold, leading to the rejection of all four null hypotheses. The study revealed that public service motivation is a critical determinant of employee performance and a fundamental pillar for sustaining public sector effectiveness in Delta State. It highlighted the importance of aligning intrinsic motivation with institutional support mechanisms to navigate the challenges of governance instability, technological disruption, and ethical lapses. The study concludes with actionable recommendations that Delta State Government should enhance remuneration frameworks, develop transparent career progression pathways, invest in digital capacity building, institutionalise ethical recognition systems, and integrate public service motivation assessments into human resource policies in order to revitalise institutional performance, reducing attrition, and restoring public trust in the civil service.

Keywords: Career Progression, Employee Performance, Motivation, Public Service, Remuneration,

Introduction

Motivation has increasingly become pivotal in enhancing employee performance within government institutions globally. In advanced economies such as the United

States, the United Kingdom, Canada, and Germany, empirical evidence supports the positive association between motivation and employee output. For example, a longitudinal analysis across various Western countries found that high level of motivation improved job performance by approximately

18% compared to those with low motivation (Das, 2022). In the United Kingdom for instance, studies have demonstrated that civil servants scoring higher on service motivation scales were 21% more productive and less likely to leave their posts prematurely (Das, 2022). In Canada, similar patterns emerge, where a national survey found that 79% of public servants reporting high intrinsic motivation aligned better with organisational missions and showed superior performance (Das, 2022). Germany's civil service studies also highlight that employees with strong civic-duty motivation completed 15% more tasks accurately under bureaucratic conditions (Kiyak & Karkin, 2022). Nonetheless, these global achievements co-exist with challenges. Despite sophisticated human resource management systems, countries like the United States still report a 12% annual attrition rate among civil servants, largely due to burnout and motivational decline (Das, 2022). Moreover, the crowding-out effect, where extrinsic rewards dilute intrinsic motivation, has been extensively observed in contexts reliant on performance-based pay (Priyastwi & Sofiati, 2022).

Turning to Africa, the relationship between motivation and employee performance remains critical yet under-developed. In Ghana for instance, a study involving eight hundred and fifty (850) local government employees found that employees with high public interest commitment contributed 23% more towards meeting organisational targets than their peers (Abane & Phinaitrup, 2022). Similarly, Tanzanian public service workers demonstrated that recognition-driven motivation led to a statistically significant improvement in job output, with a 67% response rate affirming the correlation (Mwalukoba & Abayo, 2023).

In Nigeria, the situation is more precarious. Data from a study conducted among federal civil servants revealed that motivation positively impacted job performance, with 64% of respondents acknowledging its influence (Oladimeji & Abdulkareem, 2023). Additionally, a case study at the Federal Polytechnic, Ado-Ekiti, found an 88.69% response rate to motivational interventions,

highlighting the potential but often under-utilised strength of motivation strategies (Folayan & Alabi, 2023). Nonetheless, financial rewards in the Nigerian public sector particularly in the civil service have been found insufficient in significantly motivating employees, a factor that continues to challenge public sector reform efforts (Dashwep & Macha, 2022).

Narrowing specifically to the Delta State Civil Service, multiple issues and challenges have been observed during the period of 2019 to 2024, substantially affecting employee performance and morale. Obviously, in December 2024, Delta State government dissolved the State Civil Service Commission (an institution responsible for policy formulation and operation in the state civil service) leading to legal challenges from sacked officials who claimed the dissolution was unconstitutional and demanded two hundred and fifty million naira (₦250 million) in damages (Abd Razak, et al., 2024). The abrupt termination of commission members also raised concerns over the legitimacy and transparency of subsequent appointments, which critics argued were politically motivated and poorly timed (Folayan & Alabi, 2023).

In another direction, recruitment challenges have compounded the situation, with years of stagnation leading to understaffing and overburdening of the workforce. Although fresh recruitment efforts were initiated during this period, they faced criticisms regarding transparency and adaptability to e-governance frameworks, as many civil servants struggled with the transition to digital operations due to inadequate training and resources (Ajol.info, 2024). Financial welfare issues also persisted between 2019 and 2024. Despite an announced increase in the minimum wage from forty thousand naira (₦40,000) to seventy thousand naira (₦70,000), salary delays disrupted the previously reliable payment system, creating financial instability for civil servants (Folayan & Alabi, 2023). Although investments were made in welfare infrastructure, such as health insurance schemes, concerns over their actual

effectiveness and accessibility remained prevalent (Delta State Government, 2024). Ethical concerns were also prominent, with the Economic and Financial Crimes Commission (EFCC) urging Delta civil servants to adhere to higher ethical standards amid allegations of fiscal improprieties (EFCC, 2024). Furthermore, while the move to e-governance was commendable, it encountered significant resistance and slow adaptation among staff, largely due to limited digital literacy and insufficient support systems (Adebayo & Ojo, 2023). Thus, the cumulative challenges of governance instability, questionable recruitment practices, financial uncertainty, ethical concerns, and technological adaptation between 2019 and 2024 significantly undermined employee motivation and performance within the Delta State Civil Service. Consequently, the motivation for the current study arises from the need to empirically investigate the impact of public service motivation on employee performance within the Delta State Civil Service, focusing on the period 2019 to 2024. By addressing these lacunae, the study seeks to contribute to global, regional, and national discourses while providing practical recommendations for strengthening civil service effectiveness in Delta State.

Statement of the Problem

In an ideal civil service context, motivation serves as a catalyst for enhancing employee performance, organisational commitment, and sectoral efficiency (Das, 2022). Empirical evidence from developed countries such as the United States, the United Kingdom, Germany, and Canada shows that high motivation levels contribute to achieving public sector goals, lowering turnover rates, and improving service delivery. In contrast, the Nigerian civil service, and specifically the Delta State Civil Service, faces a more precarious reality. Although elements of motivation exist among Nigerian civil servants, their performance is undermined by poor remuneration, weak working conditions, political interference, lack of career growth,

and systemic corruption (Oladimeji & Abdulkareem, 2023). Between 2019 and 2024, Delta State experienced significant challenges including governance instability, questionable recruitment practices, salary delays, ethical lapses, and difficulties adapting to technological reforms. The abrupt dissolution of the Delta State Civil Service Commission in 2024 triggered legal disputes and perceptions of political manipulation (Audan & Bandiola, 2023), while recruitment stagnation and financial instability further eroded morale (Alabi & Salami, 2023). Successive administrations introduced interventions such as the regularisation of promotions, civil service reforms through the adoption of e-governance, salary increments, and health insurance schemes (Delta State Government, 2024). Yet, despite these efforts, low motivation, limited technological adaptation, and unethical practices persist (Akinola & Oladipo, 2024). The persistence of these problems has resulted in high staff turnover, weakened institutional capacity, poor service delivery, and growing public mistrust. Several studies have explored motivational link to performance globally and nationally. (Oladimeji & Abdulkareem, 2023) focused on federal institutions without addressing state dynamics, while (Folayan & Alabi, 2023) examined higher education sectors rather than civil services. Studies in Tanzania and Ghana (Mwalukoba & Abayo, 2023); Abane & Phinaitrup, 2022) also leave Nigerian sub-national administrations under-explored.

The justification for this research lies in the limited empirical analysis of public service motivation on employees' performance in sub-national contexts within Nigeria. Although prior studies have examined the broader implications of public service motivation globally, there remains a dearth of localised studies that analyse its specific impact on employee performance as it relates to Delta State, Nigeria. Addressing this gap will contribute to the growing body of literature and provide actionable recommendations for policymakers and practitioners.

Objectives of the Study

In light of the above statement of the problem, the study aims to: (i). investigate the influence of money (financial incentives) on employee performance in the Delta State Civil Service, (ii). examine the effect of career promotion on the performance of employees within the Delta State Civil Service, (iii). assess how digital literacy and capacity building initiatives affect employee performance in the Delta State Civil Service, and (iv). analyse the impact of ethical practices and institutional recognition on the performance of employees in the Delta State Civil Service.

Research Questions

In line with the stated objectives above, the research questions are as follows: (i). What is the effect of money (financial incentives) on employee performance in the Delta State Civil Service? (ii). What is the effect of career promotion on employee performance in the Delta State Civil Service? (iii). How does digital literacy and capacity building initiatives affect employee performance in the Delta State Civil Service? (iv). What is the impact of ethical practices and institutional recognition on employee performance in the Delta State Civil Service?

Research Hypotheses

H₀₁: Money (financial incentives) has no significant influence on employee performance in the Delta State Civil Service.

H₀₂: Career promotion has no significant effect on employee performance in the Delta State Civil Service.

H₀₃: Digital literacy and capacity building initiatives have no significant effect on employee performance in the Delta State Civil Service.

H₀₄: Ethical practices and institutional recognition have no significant impact on employee performance in the Delta State Civil Service.

Conceptual Review

Motivation

According to (Van der Wal & Mussagulova, 2023), motivation can be defined as a physiological and psychological process that controls human behaviours based on the needs and desires which also energize such behaviours. Similarly, the same authors argue that motivation reflects an individual's intrinsic inclination towards fulfilling responsibilities within institutions based on values such as compassion, self-sacrifice, and commitment to public interest (Van der Wal & Mussagulova, 2022).

In addition, (Audan & Bandiola, 2024) explain motivation as the commitment of individuals to societal welfare, developed through emotional intelligence, teamwork, and knowledge management, especially among healthcare workers facing crisis situations. Furthermore, (Liu et al., 2024) view motivation as the voluntary drive to fulfill roles, even amidst risk and uncertainty, underpinned by altruism and dedication to effective service delivery and community welfare. However, (Alreshoodi, 2023) provides another perspective by stating that motivation represents an internalised system of service values which drives individuals to prioritise community welfare over personal interests within their professional engagements. Consequently, (Kismno et al., 2023) describe motivation as the alignment between an individual's self-concept and organisational goals, which leads to intrinsic job satisfaction and enhanced public service delivery. Similarly, (Park & Kim, 2025) assert that motivation sustains employee job performance through organisational citizenship behaviour, even under disruptive conditions like global pandemics, thus demonstrating the resilience embedded within motivated public servants. In the same vein, (Jung & Moon, 2024) propose that motivation is an intrinsic aspiration to serve societal interests, which is strengthened by motivating job characteristics and weakened by poor organisational hygiene factors.

Money (Financial incentives)

According to (Kwon & Lee, 2023), money (financial incentives) can be defined as systemic mechanisms established to enhance the earnings, benefits, and social protection of public sector workers, leading to an improved perception of job status and overall working conditions. Similarly, (Dorlach, 2023) explains remuneration and welfare initiatives as policy measures developed to stabilise and protect employees' livelihoods, especially during socio-economic disruptions, through targeted and sometimes temporary financial interventions.

In addition, (Alabi & Salami, 2023), define money (financial incentives) as a comprehensive system that encompasses salary structures, bonuses, pension contributions, health benefits, housing schemes, and career advancement incentives designed to improve civil servants' morale and productivity. Furthermore, (Asmono et al., 2024) describe remuneration and welfare initiatives as integrated performance-based salary structures and staff welfare packages aimed at enhancing organisational efficiency and boosting local revenue generation.

However, (Said & Kiki, 2023) argue that money (financial incentives) are critical variables influencing job satisfaction and organisational loyalty, especially when compensation is paired with effective leadership and colleague support within a public sector setting. Consequently, (Oyetunji & Adebayo, 2024) see money (financial incentives) as structured governmental efforts that bridge employee expectations and organisational performance, fostering institutional trust and long-term workforce retention. Subsequently, (Derevyanko, 2022) explains that money (financial incentives) can be seen as legal and financial frameworks that ensure equity and dignity among public sector professionals by securing proportional salary adjustments according to constitutional mandates, thereby eliminating professional discrimination.

Career Promotion

According to (Apgar & Dolan, 2024), career promotion can be defined as the developmental stages that facilitate the movement of professionals from entry-level positions to higher responsibilities through continuous training, licensure reforms, and skill enhancement initiatives within structured organisational frameworks. Similarly, (Akintayo & Okafor, 2023), explain career progression opportunities as the deliberate provision of training, mentoring, promotions, and leadership pipelines to employees in order to build institutional loyalty and improve long-term workforce performance. In addition, (Farouk et al., 2024) describe career promotion as systematic support mechanisms such as mentorship, experiential learning, and pipeline residency programmes that guide employees towards advanced professional roles, particularly in specialised sectors like healthcare. Furthermore, (Belko, 2025) states that career promotion comprise the continuous development of managerial, digital, and professional competencies necessary for navigating the dynamic organisational and economic landscapes of the modern world.

However, (Augustinienè et al., 2022) argue that career promotion should be seen not only as mechanisms for advancement but as strategic empowerment tools that enable vulnerable groups to overcome systemic educational and workplace barriers. Consequently, (Raji & Bamidele, 2022) define career promotion as organisational strategies that deliberately dismantle glass ceilings and promote meritocratic pathways for all employees, regardless of gender or socio-economic status. Similarly, (Aryanti et al., 2024) view career promotion as company-supported systems of career development that prioritise personal growth, career information access, and structured advancement pathways for younger generations. Finally, (Francis, et al., 2023) explain that career progression opportunities are often life-transformative experiences for marginalised groups, enhancing not only their professional trajectories but also their ability to shape the disciplines and industries they serve.

Digital Literacy and Capacity Building

According to (Samuel, 2024), digital literacy and capacity building be defined as the process of acquiring, modifying, and internalising new skills and behaviours necessary for success amidst evolving technological environments, particularly in high-performance domains such as sports and professional careers. Similarly, (Fitzpatrick & West, 2022) explain digital literacy and capacity building as the ability of individuals, institutions, and systems to adjust proactively to digital disruptions, ensuring resilience and effectiveness even in resourceconstrained environments. Furthermore, (Degefu & Kifle, 2024) describe digital literacy and capacity building as a strategic response by agricultural communities to integrate climate-smart technologies in response to environmental variability, thus enhancing productivity and resilience. Obviously, (Stephenson & Torn, 2023) argue that digital literacy and capacity building should be seen as an iterative process of pedagogical transformation within higher education, where digital tools become essential platforms for engagement, learning, and skills development.

However, (Tahulending et al., 2023) define digital literacy and capacity building as the coping strategies employed by students in adjusting to academic, social, and institutional challenges intensified by digital migration, thereby fostering resilience within educational contexts. Consequently, (Pinho-Gomes & Jamart, 2024) assert digital literacy and capacity building involves the systematic integration of new tools to address vulnerabilities, particularly in health systems, where technology-based interventions are critical for resilience against climate risks. Similarly, (Lee et al., 2021) see digital literacy and capacity building as the deliberate incorporation of evidence-based technological frameworks in governmental plans to combat climate change risks, highlighting technology's role in shaping national resilience. Additionally, (Francis et al., 2023) explain that digital literacy and capacity building is a

transformative practice that empowers under-represented groups to reshape organisational structures through mastery and innovation within digital environments. Finally, (Belko, 2025) describes digital literacy and capacity building as the continuous building of managerial competencies that not only respond to rapid digital shifts but anticipate emerging demands, positioning workers for sustained relevance in volatile environments.

Ethical practices and Institutional Recognition

(Hudson, et al., 2023), defines ethical practices as a commitment to uphold Indigenous rights and community governance standards, ensuring that data and knowledge originating from indigenous people are managed with collective benefit, authority, responsibility, and ethics at the forefront. Similarly, (Crites & Cunningham, 2022) explain ethical practices as the adherence to shared quality standards within healthcare ethics consultation services, promoting transparency, integrity, and trust in clinical decision-making. Also, (Nuni & Feika, 2023) define ethical practices in the public sector as the foundation for preventing procurement irregularities, emphasising that unethical behaviour undermines public trust and institutional credibility. However, (Jamali et al., 2021) highlight that ethical practices must adapt to globalisation, interdisciplinarity, and evolving sustainability challenges, requiring institutions to align traditional ethics with broader business, environmental, and social responsibilities. Consequently, (Ederio et al., 2023) see ethical practices in educational institutions as a structured adherence to universal research norms, ensuring voluntary participation, informed consent, and the protection of participant rights throughout scientific inquiry.

Employee Performance

According to (Khatob et al., 2024), employee performance can be defined as the outcome of tasks executed in line with assigned responsibilities, directly reflected in the quality and quantity of output

produced by individuals within an organisation. Similarly, (Vezi et al., 2024) explain employee performance as the degree to which employees meet or exceed set organisational expectations, often influenced by training, motivation, and developmental interventions. Furthermore, (Aliyah & Putra, 2022) describe employee performance through a financial perspective, indicating that consistent improvements in key financial indicators like Return on Assets (RoA) and Net Profit Margin (NPM) can serve as proxies for evaluating employee effectiveness in banking institutions. Furthermore, (Zagita et al., 2024) argue that employee performance is composed of the efficient execution of operational tasks, ultimately driving overall financial health and operational turnover in organisations. However, (Duwe, 2024) posits that employee performance must be seen not merely as task completion but as the strategic alignment of personal outputs with organisational vision, especially when applying performance management systems like the Balanced Scorecard.

Consequently, (Ramadhina et al., 2024) define employee performance as the behavioural outcome of various reward systems, highlighting that both material and non-material rewards significantly enhance performance levels. Similarly, (Dabor et al., 2023) articulate employee performance in the banking sector as the level of productivity and service quality, influenced heavily by the strategic implementation of performance measurement tools like the Balanced Scorecard. In the same vein, (Pranogyo & Argaheni, 2021) observe that employee performance should be composed of measurable outputs such as service quality, client satisfaction, and efficient resource utilisation in health sector organisations.

Literature Review and Rationale for Research

(Tahir, et al., 2025) investigated the relationship between Motivation and Employee Performance (EP) within public sector organisations by utilizing a mixed-methods approach, in which the study

analyses both quantitative data from employee surveys and qualitative insights from interviews with public sector employees. The findings reveal a significant positive correlation between Motivation and Employee Performance (EP), indicating that employees who are motivated by a desire to serve the public tend to exhibit higher performance levels. Moreover, the research identifies key factors that enhance this relationship, including organisational support, leadership styles, and job design. The study highlights the importance of fostering a motivating work environment to improve employee performance in the public sector. Based on these findings, recommendations for future research and practical implications for public sector management are provided, emphasizing the need for targeted training programmes and employee engagement strategies. (Trinh, et al., 2025) explored how adaptive and authentic leadership influence motivation and employee outcomes in Vietnam. Using structural equation modeling with seven hundred and nine (709) participants, it was found that both leadership styles positively impact motivation. The bright and dark sides of motivation affect employees' attitudinal and behavioural outcomes, with higher motivation linked to greater resilience and engagement, but also emotional exhaustion and lower withdrawal behaviour. Additionally, adaptive and authentic leadership indirectly affect emotional exhaustion through motivation sub-dimensions. These findings offer theoretical and practical contributions for public/civil service organisations in Vietnam, emphasizing the importance of leadership in enhancing employee motivation and outcomes. (Mohamed, et al., 2025) examined the impact of motivation on employee performance in local non-governmental organisations in Mogadishu, Somalia, and it offers valuable insights into the efficacy of both financial and nonfinancial incentives. The study ensured a representative and statistically significant dataset by employing a quantitative research design and utilizing a sample of one hundred and five (105) employees selected through simple random sampling. Using

structured questionnaires for data collection, coupled with advanced analytical tools such as Statistical Package for the Social Sciences (SPSS) and Smart Partial Least Squares (SmartPLS) facilitated a robust evaluation of the relationship between incentives and employee performance. The findings underscore the importance of a multifaceted approach to employee motivation. Financial incentives, including salary, bonuses, and compensation, significantly influenced employee performance, highlighting the continued relevance of monetary rewards in motivating staff. Equally significant were non-financial incentives such as improved working conditions, recognition, and opportunities for personal development, demonstrating a substantial positive impact on employee performance. (Pham, et al., 2024) investigated the linkages among motivation, transformational leadership, person-organisation fit, innovative work behaviour, organisational commitment, and job performance in Vietnam's public sector, drawing on the literature on psychological empowerment and social exchange theory. Analysing data from four hundred and sixty-four (464) individuals at public organisations, the study employs Partial Least Squares–Structural Equation Model (PLS-SEM) to reveal significant positive associations between motivation, transformational leadership, person-organisation fit, and the impact of organisational commitment on job performance. The study highlights the pivotal role of person-organisation fit as a mediator in the relation between motivation, transformational leadership, and innovative work behaviour. Additionally, innovative work behaviour, organisational commitment, and psychological empowerment act as mediators in the impact of transformational leadership on job performance. (Fabre, et al., 2024) explored the relationship between motivation and job performance among government personnel in public sector organisations. Specifically, it seeks to understand how various motivational factors influence employee productivity and overall performance in the context of public sector work environments. Motivation theories like

Maslow's Hierarchy of Needs propounded in 1943 which are composed of five levels of human needs for survival, and individual's lower-level needs must be satisfied before they can address their higher-level needs. Intrinsic motivation engages a person in an activity for self-satisfaction while extrinsic motivation drives a person to function due to rewards or punishment. This allows foreseeing the incoming demotivator for the personnel and how it affects the performance of the agency where they work. The study used a quantitative research design through a Likert scale questionnaire research instrument. Descriptive statistics and Multivariate Analysis of Variance (ANOVA) were applied to analyse the data, acknowledging potential biases from personal beliefs, professional background, and participant interaction to enhance the study's reliability. The survey results indicated a balanced gender distribution among respondents, falling in the 26 to 35 age group, and most were identified as permanent government personnel. The overall sentiment toward intrinsic motivation and recognition in the workplace was positive, suggesting a healthy organisational climate and a need for improved recognition practices. (Abd Razak, et al., 2024) explored the inter-relationships among motivation, leadership style, employee satisfaction, and organisational commitment to employee performance. Utilizing a quantitative approach, data were collected from a sample of employees across various public sector organisations, comprising two hundred and eighty-eight (288) respondents. Comprehensive surveys were utilized to gather data regarding employee perceptions and experiences related to the studied constructs. The analysis employed Structural Equation Modelling (SEM) to examine the proposed hypotheses, allowing for robust insights into the relationships among constructs and their impact on employee performance. The hypotheses testing results revealed that leadership style, organisational commitment, and employee satisfaction positively influence employee performance, while motivation did not demonstrate a significant effect in this context. These findings

indicate that public organisations must focus on enhancing leadership effectiveness and employee commitment to improving service delivery and overall organizational outcomes. (Lee & Na, 2024) explored how COVID-19-induced work intensity and COVID-19-related organisational support influence motivation and job satisfaction. Using survey data from a nationally representative sample of one thousand, four hundred and thirty (1,430) South Korean central government employees collected during the pandemic (May–June 2020), the findings revealed that COVID-19-induced work intensity is positively associated with motivation, which in turn has a positive association with job satisfaction. It was also revealed through the findings that COVID-19-related organisational support has both direct and indirect associations with job satisfaction through motivation. These findings underscore the importance of organisational support in times of widespread crisis and invite further investigation of motivation during the COVID-19 pandemic using an institutional approach to motivation.

Materials and Methods

The research specifically utilised a Mixed-Methods Approach (Triangulation) that combines (both quantitative and qualitative methods) to interpret the data collected. This study engaged a Mixed-Methods Approach, specifically the Convergent Parallel Design. In this design, quantitative

and qualitative data were collected concurrently, analysed separately, and then merged during the interpretation phase to provide a holistic understanding of the multifaceted public service motivation and employee performance spectacle. This method involved systematically categorising and analysing factual/numerical data to identify recurring themes, patterns, and causal linkages between public service motivation and employee performance. The use of this analytical method ensured that the research captured nuanced insights into how public service motivation are operationalised and their consequent impact on job performance in Delta State. The target population comprised employees of the Delta State Civil Service who served between 2019 and 2024. These included personnel across administrative, technical, and support departments. Based on records from the Office of the Head of Service, the total estimated staff strength within the period was approximately two thousand, one hundred and fifty (2,150). Moreover, a multistage sampling technique was used to ensure representativeness as follows: Firstly, purposive sampling was applied to select key departments most impacted by administrative reforms (e.g., Administration, Finance, and Information Communication and Technology (ICT)). Secondly, the workforce was divided into strata based on job cadre (junior, mid, and senior levels), and finally, proportionate random sampling was used within each stratum to select respondents.

To determine an appropriate sample size, the study employed Yamane's (1967) formula for sample size determination for a finite population, expressed as: $n = N / (1 + N(e)^2)$, where: n = desired sample size, N = total population (2,150), e = margin of error (0.05 for 95% confidence level)

$$n = 2150 / (1 + 2150(0.05)^2)$$

$$= 2150 / (1 + 5.375)$$

$$= 2150 / 6.375$$

$$\approx 337.25 = 338$$

To account for non-response and invalid questionnaire, the sample size was increased by 2% (approx. 7 questionnaire). The total quantitative sample size = 345 respondents with eventual incident of 342 (valid responses). Primary data were collected

through a structured questionnaire designed to measure perceptions of motivation and employee performance. All items were based on a 5-point Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (5)”. A pilot test was conducted with 30

civil servants from excluded departments to ensure clarity and reliability, yielding Cronbach's alpha values between 0.78 and 0.91 for different sections, indicating strong internal consistency. Secondary data were also reviewed from government circulars, policy memos, union reports, and media sources between 2019 and 2024 to contextualise findings.

Moreover, the instrument was divided into five sections covering: demographics, money (financial incentives), career promotion, digital literacy and capacity building, ethical practices and recognition, and employee performance outcomes. Also, data were collected and analysed using the (SPSS) in two stages: (i). Descriptive statistics (means and standard deviations) were used to summarise responses and highlight general trends in motivation and performance across the civil service, and (ii). Inferential statistics, specifically One-Way

Analysis of Variance (ANOVA), was applied to test the study's hypotheses in order to determine whether there are significant differences in employee performance across varying levels of: (i). money (financial incentives), (ii). access to career promotion, (iii). digital literacy/capacity building initiatives, and (iv). exposure to ethical recognition practices. The decision rule was to reject the null hypothesis (H_0) where the p-value was less than 0.05, indicating a significant difference in performance based on the motivational factor being tested.

The null hypothesis (H_0) for each test stated that there would be no significant difference in mean performance across the groups. The decision rule was to reject the null hypothesis where the p-value was less than 0.05, indicating a statistically significant difference.

Results, Findings and Discussion

The summary of the tables generated from the analysis for each stage are as shown in tables 4.1 to 4.5 below:

Table 4.1: Sample Distribution by Department and Cadre

Department	Estimated Population (N)	Proportional Sample Size (n)	Junior Staff	Middle Staff	Senior Staff	Total per Department
Administration	450	72	18	20	22	60
Finance &Accounts	510	81	20	22	23	65
ICT	300	48	15	18	17	50
Human Resources	420	67	17	19	19	55
Planning	470	75	32	36	44	112
Total	2,150	342	102	115	125	342

Source: Field Survey, 2025

Table 4.2: ANOVA Table for H_{01} : Remuneration and Welfare Initiatives

Money (financial incent) Level_	Mean Performance Score_	Std. Dev._	Sample-Size (N)
Low	3.45	0.55	85
Medium	3.89	0.48	130
High	4.25	0.50	127

Source: Field Survey, 2025

F-value: 7.832 p-value:
0.000

Decision: Reject H_{01}

The findings from the study conducted on the Delta State Civil Service between 2019 and 2024 revealed significant insights into the impact of service motivation on employee performance. In terms of money (financial incentives), the analysis of variance (ANOVA) indicated that the levels of money (financial incentives), had a statistically significant effect on employee performance, with employees receiving higher remuneration exhibiting better performance. Specifically, those in the high money (financial incentives) category had a mean performance score of 4.25, compared to 3.89 for those in the medium category

and 3.45 for those in the low category. The p-value of 0.000 suggested that the null hypothesis (H_{01} : Money (financial incentives) has no significant influence on employee performance) should be rejected. This finding aligns with previous studies, such as those by (Mohamed et al., 2025) and (Said & Kiki, 2023) which emphasised the critical role of both financial and non-financial incentives in improving employee motivation and performance. These findings confirm the importance of fair and timely financial incentives in enhancing employee output within public sector institutions.

Table 4.3: ANOVA Table for H_{02} : Career Promotion

Career Prom.	Mean Performance Score	Std. Dev. _____	Sample Size (N)
No Access	3.40	0.60	77
Partial Access	3.85	0.52	121
Full Access	4.30	0.46	144

Source: Field Survey, 2025

F-value: 9.214 p-value:
0.000

Decision: Reject H_{02}

The second hypothesis focused on career promotion and its impact on employee performance. The ANOVA results showed a clear relationship between access to career growth and performance. Employees with full access to career promotion scored the highest in terms of performance (mean score of 4.30), followed by those with partial access (3.85), while those with no access recorded the lowest performance score (3.40). The p-value of 0.000 again led to the rejection of the null hypothesis (H_{02} : Career

promotion has no significant effect on employee performance). This finding is consistent with research studies by Akintayo & Okafor, (2023) and (Farouk et al., 2024), which highlighted that career promotion, such as promotions and continuous professional development, enhance employee performance and foster greater institutional loyalty. Therefore, career promotion was confirmed as an essential driver of public sector performance in the Delta State Civil Service.

Table 4.4: ANOVA Table for H_{03} : Digital Literacy and Capacity Building Initiatives

Training Received	Mean Performance Score	Std. Dev. _____	Sample Size (N)
No Training	3.50	0.64	88
Some Training	3.95	0.50	119
Extensive Training	4.28	0.45	135

Source: Field Survey, 2025

F-value: 8.721 p-value:

0.000

Decision: Reject H_{03}

The study further examined the influence of Digital literacy and capacity building initiatives on employee performance. The results indicated that employees who received extensive training in technological tools out-performed those who received partial or no training, with the extensive training group scoring an average of 4.28 in performance. This was in contrast to employees who received some training (mean score of 3.95) and those who received no training (3.50). With a p-value of 0.000, the null hypothesis (H_{03} : Digital literacy and

capacity building initiatives have no significant effect on employee performance) was rejected. These findings support the assertions made by (Degefu & Kifle, 2024) and (Samuel, 2024), who identified the role of digital literacy and capacity building initiatives in enhancing employee performance in public sector organisations. The results underscore the necessity of continuous capacitybuilding initiatives, especially in the context of evolving digital governance practices.

Table 4.5: ANOVA Table for H_{04} : Ethical Practices and Institutional Recognition

Recognition Level	Mean Performance Score____	Std. Dev._	Sample Size (N)
Low	3.38	0.58	81
Moderate	3.92	0.54	124
High	4.33	0.47	137

Source: Field Survey, 2025

F-value: 10.043 p-value:

0.000

Decision: Reject H_{04}

Finally, the analysis on ethical practices and institutional recognition demonstrated a significant positive relationship between these factors and employee performance. Employees who responded in terms of high levels of recognition and adherence to ethical practices achieved the highest performance scores (mean of 4.33), while those with moderate and low levels of recognition scored 3.92 and 3.38, respectively. The p-value of 0.000 led to the rejection of the null hypothesis (H_{04} : Ethical practices and institutional recognition have no significant impact on employee performance). This finding is consistent with studies by (Hudson et al., 2023) and (Nuni & Feika, 2023), which highlighted the importance of ethics and recognition in fostering a positive work environment, leading to higher performance. The results indicate that institutional recognition and the enforcement of ethical standards are crucial

to maintaining high levels of employee motivation and performance in the public sector. Additionally, a theoretical approach is applied to enhance the validity of the findings. By linking perspectives from Abraham Maslow's Theory of Motivation, the study provides a multi-dimensional understanding of public service motivation and its implications for job performance. The theory provides a fundamental lens through which employee motivation and performance within an organisation can be understood, particularly focusing on the various levels of human needs, starting with the most basic needs, which are physiological in nature and ending with the most supposed needs, which are psychological in nature. Maslow's theory revolves around the idea that an individual's unmet needs motivate him to ascend to the hierarchy so that he can satisfy them. Recent empirical studies have further validated the

relevance of Abraham Maslow's Motivation Theory in explaining employee behaviours in diverse service sector contexts. For instance, (Liu et al., (2024) found that employees with strong motivation consistently demonstrated higher resilience and task performance even under high-risk conditions. Similarly, (Park & Kim, 2025) established that during periods of systemic disruption such as the COVID-19 pandemic, employees exhibiting higher motivation levels maintained superior job performance and contributed to organisational stability through citizenship behaviours. In the African context, (Alabi & Salami, 2023) observed that Nigerian civil servants with heightened motivation were more committed to organisational goals despite persistent challenges like low remuneration and poor working conditions. The selection of Abraham Maslow's Motivation Theory as the foundational framework for this study is further justified by the nature of the research variables and the study context. This study investigates how money (financial incentives), career promotion, digital literacy/capacity building as well as ethical practices and institutional recognition influence employee performance in the Delta State Civil Service. All these elements can be meaningfully interpreted through the Abraham Maslow's motivation theory lens— money (financial incentives) relate to

sustaining intrinsic motivation amidst economic pressures; career promotion supports a sense of duty and institutional loyalty; digital literacy and capacity building reflects resilience in fulfilling public service duties; and ethical practices align with the civic-oriented values intrinsic to motivation.

Recommendations

Based on these findings, the study recommended the following: (i). Delta State Government should ensure timely payment of salaries, implement equitable reward structures, and maintain transparency in financial management to reinforce employee trust and motivation, (ii). Civil servants in Delta State should have access to transparent promotion criteria, regular training opportunities, and clear performance metrics. (iii). Comprehensive training programmes should be rolled out by the Delta state Civil Service to improve Information and Communication Technology (ICT) literacy across all cadres, and (iv). Regular ethical training, performance recognition ceremonies, and whistle-blower protections should be institutionalised by the Delta State Civil Service. These efforts will reinforce a culture of accountability, fairness, and moral responsibility within the civil service.

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Incubation and Acceleration Programmes on Start-Up Success of Manufacturing Firms in South-South Nigeria**EBOH, Mercy Ebele**

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Publication Date: 2026/06/22**Abstract**

The study examined incubation and acceleration programmes on start-up success of manufacturing firms in South-South, Nigeria. The specific objectives observed technology transfer programme, knowledge transfer programme and strategic guidance programme on start-up success of manufacturing firms in South-South, Nigeria. The study adopted cross sectional survey research design method. The study used primary data sources and secondary data. Primary data was collected from the employees of the selected manufacturing firms in Delta State, using structured questionnaire. Content and construct validity was achieved through seeking expert opinion of the study's supervisor. Reliability was ascertained using Cronbach Alpha coefficient. Descriptive statistics and linear regression analysis were used to analyze the quantitative data. Data was analyzed using tables and figures. The findings of the study revealed that the dimensions of incubation and acceleration programmes (technology transfer programme does have significant effect on start up success of manufacturing firms in South-South Nigeria, knowledge transfer programme does have significant effect on start up success of manufacturing firms in South-South Nigeria and strategic guidance programme does have significant effect on start up success of manufacturing firms in South-South Nigeria) employed in this study have significant and statistical effects on start-up success of selected manufacturing firms in South-South Nigeria. The study concluded that incubation and acceleration programmes adopted in this study have significant effect on start-up success of selected manufacturing firms in South-South, Nigeria. The study recommends that manufacturing firms should place emphasis on the importance of effective design in incubation and acceleration programmes, particularly those of an economic character, as a critical determinant of success. It advocates for an intentional and strategic approach in structuring programs to ensure they not only fulfill the specific objectives but can achieve impactful results. Hence, the research sheds light on the way design influences the efficacy and performance of economic programs, specifically in the context of start-ups participating in accelerator initiatives.

KEYWORDS: Incubation, Acceleration Programmes, Manufacturing Firms, Technology Transfer Programme, Knowledge Transfer Programme, Strategic Guidance Programme

Introduction

New venture creation is indeed established ventures operate with the intent of being successful but failure is ever present due to the environment ventures operate in. Evolutionary theorists argue “that the forces of selection that eliminate uncompetitive firms are a necessary phenomena that contributes to the maintenance of healthy populations of organizations. Industrialisation has led to the establishment of African Incubator Network (AIN), a development programme anchored by Infodev. Infodev is a research capacity building and advisory service organisation that seeks to help developing countries and their international partners to use information and connection broadly and effectively as tools for poverty reduction and sustainable economic growth (Evelyn & Eno, 2024). Business incubators nurture start-up enterprises by providing an enabling environment for entrepreneurs where they will have access to shared infrastructure, coaching, business and financial servicing, and linkages with domestic and international markets (Alfred, 2025).

Incubation activities, which focus on entrepreneurial learning outside of the classroom, are becoming an increasingly important component of an entrepreneurship education curriculum (Haneberg & Aaboen, 2020; Wei, Liu, & Sha, 2019). They are often experiential in nature, with the student having the chance to apply theory and information taught in the classroom (Haneberg, Aaboen & Middleton, 2022). However, the journey from inception to sustainability is fraught with uncertainties, and many startups face formidable challenges that can impede their growth. Understanding the factors that contribute to startup success is critical for entrepreneurs, investors, policymakers, and the broader business community (Bărbulescu, 2021). Incubators allow entrepreneurs to nurture their ideas and convert them into fully functional business models over an unlimited period (Bărbulescu, 2021). On the other hand, accelerator programs have a fixed duration, usually three to six months, to ensure rapid growth and scaling. In the

process of realizing a project or business idea, entrepreneurs face numerous problems in different subjects such as legal, economic, technological, etc. It is very difficult for entrepreneurs to cope with these problems alone and to establish and successfully maintain their companies. However, successful entrepreneurs, who find solutions to important problems in our lives are also contributing to the national economy. By scrutinizing the strategies, funding mechanisms, incubation programs, and collaborative environments offered by these incubators, we aim to distill key lessons and contribute to the ongoing discourse surrounding effective support systems for entrepreneurial endeavors. As we embark on this review, my exploration will traverse the multifaceted terrain of business incubation and acceleration programmes, shedding light on their role as architects of success for startups in the dynamic and innovative landscape of manufacturing firms in South-South Nigeria.

The entrepreneurial landscape in Nigeria is burgeoning, with a notable increase in startups driven by the demand for innovative solutions. However, these startups face challenges in achieving sustainability and growth. Business incubation programs are pivotal in addressing these challenges by offering mentorship, funding, networking, and access to resources, which support nascent businesses through their critical early stages, equipping them with necessary tools to thrive in competitive markets. Manufacturing firms are usually started by a small number of owners or sometimes single owner and usually with no formal procedures and operations. Owners usually manage manufacturing businesses with little skills and knowledge to the extent where the growth stage is critical requiring clear vision and mission for success. The purpose of this study lies at this critical and vital stage where strategic guidance is needed for small business transitional growth. The achievement of the study purpose is possible if an understanding of the strategic guidance plan that can enable the attainment of the management of the transition stages of business growth effectively. Manufacturing

business strategic plan must communicate the vision and mission of owners to employees and customers. The study will enhance the growth of businesses in the Nigerian economy through the understanding of the relationship between incubation and acceleration programmes on startup success. In the lenses of success, this raises a discourse on the way different designs of incubation and acceleration programs impact the start-ups, which leads to the following narrative empirical review. Therefore, the study's general objective was to determine the effect of incubation and acceleration programmes on startups success of manufacturing firms in South-South Nigeria.

The study will provide insights to regulators and policy makers on the accelerator programmes enhancing the startups business success and functioning, which will help in regulation and policy formulation.

Review of Related Literature

Incubation and Acceleration Programmes

The idea of business incubation was conceived as a supportive mechanism to support startups and to promote the development of SMEs and entrepreneurship in both developed and developing countries. By offering professional and consulting services to start-ups and by mentoring, nurturing, and fortifying them to survive, technological incubation aims to generate employment, economic growth, technology transfer, and commercialization of technology. The goal is to expand SMEs and new business ventures, respectively (Henry, 2024). Scholars have agreed that business incubation is a vital tool for economic development, growth and technology transfer in both developed and developing economies. The idea behind business incubation is to increase the survival and growth of businesses by creating systems that would guarantee the early detection of companies with high success potential but limited resources. By ensuring that businesses overcome the so-called liability of smallness and the liability of newness, the notion produces innovative businesses that are profitable, competitive,

and long-lasting (Salvador & Rolfo, 2021). Thus, according to Hackett and Dilts (2024), the incubation phenomenon is regarded as an enabling technology "that capacitate the functionality of critical and possibly strategic technologies.

Technology Transfer Programme

Technology transfer is the process by which a developer of technology makes its technology available to a commercial partner that will exploit the technology. Technology transfer can be seen as the process of advancing of technology from one place to another Sounder, Nasher and Padmanatha, 2020). Technology transfer is also refers to movements of technology from the research institute to industry or from one place to another (Partil, 2022). Urbano (2023) opine that technology transfer is the process sharing of knowledge that is applied to research in technology agencies, universities, laboratories and other institutions that are capable of knowledge sharing. Urbano (2023) further posits that effective knowledge sharing among entrepreneurs will lead to technology transfer. This entails the provision of training support for developing entrepreneurs. In this case, an innovation based incubator should involve highly specialised and qualified team. Moreover, technology transfer would be enhanced by effective back up through leveraging on the experience of senior staff. Technology and innovation are bedrock of development in developed economies where technology transfer is eminent through technology commercialisation of Research and Development (R&D) result.

Knowledge Transfer Programme

One of the most important aspect in determining the success or failure of any start-up is knowledge transfer because it provides the avenue for an experience person in business to teach or transfer his/her wealth of knowledge to another who is just starting or about to start, in this case, students. In this information era, students can use knowledge transfer techniques to comprehend the material they have learned

and develop entrepreneurial abilities. It is important to provide students the chance to share the entrepreneurial skills they have developed via learning activities. Students can acquire suitable behaviours for their commercial or entrepreneurial activities with the help of knowledge transfer, particularly linked to best practices. Janus (2015) posits that knowledge transfer is a two-way or multi-way interaction in which many parties are interested in learning from one another. .

Strategic Guidance Programme

Businesses face numerous problems in the ever-changing modern paradigm, such as governmental laws, fierce competition, growing customer demands, and substitute services, in addition to dynamic environmental changes (Lutfi et al., 2023). In order to ensure the company's survival and growth, organizations endeavor to implement innovative ideas that direct their strategies, decision-making framework, and the scope and character of their operations (Lutfi, AlKhasawneh, Almaiah, Alsyuf, & Alrawa, 2022). Gaining a strategic edge could be difficult in such complex and volatile markets (Shaheen, 2023). Companies employ a variety of strategies and approaches to gain a competitive edge and work to resolve these problems, which exacerbate and build up (Qushtom, 2022). The strategy of a company may have an impact on its investments, activities, market relationships, and, eventually, performance (Lutfi, Al-Khasawneh, Almaiah & Alshira'h, 2022). However, how the company reacts and engages with environmental changes and fluctuations as they happen in real time at the local, regional, and worldwide levels of market activity will determine a lot of the objectives and goals that are pursued. Strategic management must be used to help set goals, determine future orientations, distribute limited resources, foster effective leadership, and build skills if a company is to prosper (Al-Majali & Sunna'a, 2023).

Start-up Success

Startup success has been described as value creation in a firm that may produce a

positive change in the financial situation of a company depending on the financial results that an improved Return on Investment (ROI) will bring. Improved ROI is the result of better utilization of raw material, labour, capital and proper resource management (Richard, Yip, Johnson & Devinne, 2019). Given the importance a company's performance plays in investment decision making, it is important that investors can utilize appropriate criteria for the concept of a firm to succeed. Richard et al. (2009) acknowledge failure to have consensus on firm success definition. This is indicated by the contrary definition by Valmohammadi and Servati (2021) who described startup success as relating to the efficiency in performing a task. March and Sutton (2024) however defines business success as both behaviour and results which are the fundamental interest of every business manager that are undertaken in any firm. Globally, it is widely accepted that new start-ups are the engine room for economic development through employment generation Chandra, (2013) and support for technological advancement, increase competitiveness, economic revival of regions, innovation and technology transfer. According to Tilley and Tonge, (2022) revealed that start-ups introduce new product, new knowledge or utilize previous knowledge created by others to developed their new product and services. They contribute to economic growth through innovation. Other researcher like Gamsey, (2022) revealed that new start-ups instigate diversification, innovation and new product to the market. The benefits of new start-ups in the society even occurred to those who do not create new venture; new start-ups viewed as critical to entrepreneurship and economic development.

Theoretical Framework

The Theoretical framework for this study is anchored on Diffusion of innovation Theory

Diffusion of Innovation Theory

The theory was introduced by Everett Rogers in 1962. In his paper, he explains that diffusion is the process where an

innovative idea, process or product is communicated to members in a community (Rogers, 1962). This theory brings in different disciplines and varies severally. Getting a new idea to be adopted and accepted can be such a difficult task and that is the grounds for the interest in the diffusion of innovations theory this is because it takes a long time. Most institutions face the problem of trying to accelerate this rate of adoption where the rate of adoption is the rate at which an innovation is well taken up by members of a community. The rate of adoption is calculated based on the persons absorbing the idea or innovation within a frame of time. This is denoted by an arithmetical curve representing innovation (Rogers, 1995). This theory sought to give details on why, how, and at what rate new thoughts

and technology are absorbed. Accelerator programs being a new and recent ideology will be well discussed in the theory. The diffusion of innovation theory links to the current study because it sought to determine if accelerator programs lead to success of start-ups, accelerator programs are bases of transmitting innovation to start-ups'. If the innovations, provided by the accelerators enhance the start-ups success, then the study's results would support the diffusion of innovation theory.

Research Methodology

The research design employed for this study is a cross-sectional survey research design. The study population comprised of customers of selected manufacturing outlets in Delta State

Population Distribution of Employee of Selected Manufacturing Firms

S/N	Firm	Location	Population	Frequency
1	Top Feeds	Sapele	61	0.83
2	Beta Glass	Ughelli	29	0.83
3	Flour Mill	Sapele	83	0.83
	Total		173	100

Source: Researcher's Field Survey Analysis (2025)

For the purpose of this research, the appropriate number of representation of the population for this study was determined using a formula cited in Taro Yamane's book, thus:

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

Where n = sample size sought

e = level of significance

N = population size

Working reveals the desired sample size thus:

The sample sought is:

$$n = \frac{173}{1 + 173(0.05)^2}$$

$$n = \frac{173}{1 + 323(0.0025)}$$

$$n = \frac{173}{1.4325} = 120$$

Therefore, the sample size of the study was one hundred and twenty employees from the selected manufacturing firms in South-South Nigeria.

Sampling Technique

For sampling technique, the study employed a stratified random sampling method; selecting respondents that were readily available participated in the study. Stratified sampling technique, in this scenario, provides a focused approach to target the

exact subset of the population that can offer rich and relevant insights, thereby making it an appropriate choice for this study. One major consideration in deciding any sample size and procedure is the representativeness of the samples that are finally selected.

Validity and Reliability

The structured questionnaire was first subjected to a pre-test process involving five academic experts to ascertain content validity. The reliability of the questionnaire was tested using Cronbach's alpha. The reliability of the instrument to be used in the study will be assessed through the test-retest reliability method. For reliability of the measurement instrument, a pilot test was done on 10 percent (10%) of the sample size (20 respondents). This was necessary in ensuring the consistency of the results.

Method of Data Collection

Primary source of data is a collection of items to which a respondent is expected to react in writing as defined by the questionnaire form (Oso & Onen 2018). Being the main instrument to be used for data collection, the questionnaire was comprise of well-designed questions administered on the targeted population of this study. Questionnaire is one of the most common tools for gathering data on survey; research is a set of targeted questions which utilizes different scales to measure the perspective and insight of a respondent. Content validity was used to determine the validity of the questionnaire. The secondary

source of data was generated through intensive review of literature. This source of data was used in order to augment the information from the primary source of data and enabled the researcher to gather corroborative information in order to make objective analysis. The secondary source of data include: textbooks, journals found at the library of the organizations under study, newspaper articles, magazines, conference papers, empirical review, unpublished works that relate to the topic of study and extracts from the internet.

Data Analysis and Presentation of Results

One hundred and twenty (120) respondents were properly administered the copies of the questionnaire developed for this study. Out of the one hundred twenty (120) copies administered on the respondents, only ninety nine (99) copies and twenty one (21) copies were not retrieved. Out of the ninety nine copies retrieved only eighty eight copies (88) were properly filled, while eleven (11) copies of the questionnaire were filled incorrectly. The analysis is based on the sample size determined for this study, which were one hundred and twenty (120) copies of questionnaire. And the data were analyzed using linear regression and descriptive statistics.

Test of Hypotheses

Hypothesis one

H0₁: technology transfer programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Significance of Pearson's Movement Coefficient of Technology Transfer

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.809	1.120		2.509	.013
	Technology Transfer	.811	.065	.755	12.504	.000

a. Dependent Variable: Start-Up Success

Source: Analysis of Field Survey, 2025

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.755 ^a	.570	.566	1.393
a. Predictors: (Constant), Technology Transfer				

Source: Analysis of Field Survey, 2025

From the linear regression result in table 4.3 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take, therefore, is to reject the null hypotheses while the alternate hypotheses will be accepted. This implies that technology transfer programme do have significant effect on start-up success. And from the beta value observed (i.e. $\beta=0.755$ or 75.5%) shows that change in technology transfer programme can predict the outcome in start-up success, this implies that change in technology transfer programme has a

positive effect on start-up success. Also the adjusted $r^2 = 0.556$ (55.6%) showing the extent to which variance in start-up success. is cause by technology transfer programme. That is, technology transfer programme contribute 55.6% change in start-up success.

Hypothesis Two

H0₂: knowledge transfer programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Test of H0₂ Significance of Pearson's Moment Coefficient of Knowledge Transfer

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	10.762	1.434		7.504
	Knowledge Transfer Programme	.373	.089	.359	4.185

a. Dependent Variable: Start-Up Success

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359 ^a	.129	.122	1.982
a. Predictors: (Constant), Knowledge Transfer Programme				

From the table 4.4 and 4.5 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take is to reject the null hypotheses while the alternate hypotheses will be accepted. This implies that Knowledge Transfer Programme do have significant effect on start-up success. And from the beta value observed (i.e. $\beta=0.359$ or 35.9%) shows that change in Knowledge Transfer Programme

could lead to start-up success. Also the adjusted $r^2 = 0.122$ (12.2%) showing the level to which variance in start-up success is cause by Knowledge Transfer Programme. That is, Knowledge Transfer Programme contribute 12.2% change in start-up success

Hypothesis Three

H0₃: strategic guidance programme does not have significant effect on start up success of manufacturing firms in South-South Nigeria

Table 4.6: Test of H_{02} Significance of Pearson's Moment Coefficient of Strategic Guidance Programme

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.741	1.457		7.370	.000
	Strategic Guidance Programme	.373	.090	.356	4.132	.000

a. Dependent Variable: Start-Up Success

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356 ^a	.126	.119	1.985

a. Predictors: (Constant), Strategic Guidance Programme

From table 4.6 and 4.7 above, the p-value critical is at 0.05 which is greater than the P-value calculated (0.000). The decision to take is to reject the null hypotheses while the alternate hypotheses accepted. This proves that Strategic Guidance Programme does have significant effect on the start-up success. And from the beta value observed (i.e. $\beta=0.356$ or 35.6%) shows that change in Strategic Guidance Programme can predict start-up success for manufacturing firms. Also the adjusted $r^2 = 0.119$ (11.9%) showing the height to which variance in start-up success is cause by Strategic Guidance Programme contribute 12.2% change in start-up success of manufacturing firms.

Discussion of Results

Technology Transfer Programme and Start-Up Success

From the presentation of data showing all the respondents' response toward questionnaire administered to them. 92 copies of the questionnaire were retrieved, four copies from the 92 copies retrieved were not properly filled and only 88 copies were used for analyzing the regression and descriptive statistics. In the test of hypotheses one, the calculated p-value was observed to be less

compared to the p-value critical. This was why the null hypothesis was rejected while the alternate hypotheses accepted which indicated that technology transfer programme have a significance effect on start-up success. Also, the R-square value observed, show the extent to which variance in start-up success are caused technology transfer programme which is a strong predictor of start-up success of manufacturing firms. This finding is in line with previous research of Jenyo (2024) examined effect of technology incubation programme on start-ups operation in Akure, Ondo state, Nigeria. The study employed cross section survey design. The sample for this study consisted of 168 respondents which were randomly selected out of the population of 298 entrepreneurs who had graduated from the incubation centre. The study used primary data specifically structured questionnaire, and linear regression was used for data analysis. Findings revealed that mentoring and, technology transfer foster the development of start-up ventures and entrepreneurs. The study concluded that technology business incubation is a good medium for nurturing entrepreneurs and their ventures in the country as they contribute to solving the tripartite societal need of job creation, poverty

reduction and economic development. The study recommended that Government should intensify effort in funding qualified personnel

Knowledge Transfer Programme and Start-Up Success

On the basis of the findings made, practical implications were presented in the study for possible application by financial service providers. From the test of Hypothesis two, the calculate p-value was observed to be less compared to the P-value critical. This was why the null hypothesis was rejected while the alternate hypothesis accepted which show that knowledge transfer programmes have a significant effect on start-up success of manufacturing firms. The R-square value shows the variance in knowledge transfer as a strong positive predictor of start-up success of manufacturing firms. In line, Borana (2025) who conducted a narrative literature review to synthesize the understanding in the way different characteristics of accelerator programs design influence the performance and growth of start-ups in terms of success. Findings collectively indicate that a nuanced approach to program design, considering sector, geography, culture, and start-up specific needs, is crucial for maximizing the impact of acceleration programs. The main contribution of the paper is highlighting the critical role of effective program design in ensuring the success of economic initiatives, particularly for start-ups in accelerator programs. By offering a nuanced construct of success and identifying key components such as mentorship and ecosystem engagement, it advances both academic understanding and practical strategies for optimizing acceleration outcomes. A key limitation is the absence of a systematic literature review, which may narrow the scope of insights and limit the comprehensiveness of its conclusions. Future research could focus on developing a standardized success construct, enforceable as a curriculum to guide and assess start-ups in

and provide modern technology needed to boost incubation activities in the country.

accelerator programs. This framework could be contextualized within theoretical paradigms like the Competence-Based View to explore competencies and contextual variables critical to entrepreneurial success sustainability.

Strategic Guidance Programme and Start-Up Success

Also in hypothesis three, the calculate p-value was observed to be less compared to the P-value critical. This was why the null hypothesis was rejected while the alternate hypothesis accepted which show that strategic guidance programme has a significant effect on start-up success and the R-square value shows the variance in start-up success caused by the level of strategic guidance programme. This is confirmed by Ashal, Abou-Moghli, Daoud and Lutfi (2024), they investigated the mediating influence of sustainability on the link between strategic guidance and organizational performance. Based on the knowledge gap that the literature analysis revealed, a research model was created. A random sample of 321 managerial and non-managerial employees was taken. The findings of the hypothesis testing revealed that with operational sustainability as a moderating variable, the relationship becomes stronger between entrepreneurial orientation, technology orientation, market orientation, and organizational performance. Despite the importance of integration between strategic orientation and operational sustainability to achieve the required organizational performance, there is a literature gap and an inadequate number of studies linking organisational performance and strategic guidance via operational sustainability. This research is intended to bridge the identified gap by attempting to contribute knowledge to

this field of study by examining strategic orientation's impacts in terms of entrepreneurial orientation, technology orientation, and market orientation on organizational performance using the non-financial performance through the examination of the mediating role of operational sustainability using the context of the telecommunication sector in Jordan.

Conclusion

This study highlights the critical role of incubation and acceleration programs in fostering start-up success and driving economic growth in Nigeria. The results demonstrate that these programs provide essential support to entrepreneurs, improving their chances of success by offering mentorship, resources, and networking opportunities. Additionally, successful start-ups contribute significantly to the economy by creating jobs, encouraging innovation, and stimulating market expansion. Incubators and accelerators are indispensable components of the startup ecosystem, providing crucial support that enhances the survival and success of new ventures.

Recommendations

For future research, this study recommends that;

- i. Government should intensify efforts on funding and equipping Technology Business Incubation Centres with the right personnel and modern technology needed to boost incubation of startups in the country.
- ii. the enterprises should take recognizance of maintaining the momentum of the type of innovation so as to keep the activities of the market and give room for future expansion. Also, the technology incubation programme has shown to be

- iii. effective tools in developing and assisting in enterprises in Nigeria the study emphasizes the need for policymakers to invest in and expand business incubation and acceleration programs to support the growth of start-ups and, consequently, enhance economic development in Nigeria.

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Environmental Disclosure and Firm Value of Listed Manufacturing Companies in Nigeria

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Abstract

The study examined how environmental disclosure affected the firm value of Nigerian industrial companies. Expost facto research design was employed in the study with data sourced from annual report and sustainability reporting of fifty five manufacturing companies with a sample size of fourty five companies listed on the Nigeria exchange group for a period of ten years from 2015- 2025. Descriptive, correlation and two way fixed and random effect estimator by scroil kraay was used to analyzed the data and from the result, Energy Consumption (EC) produces a negative ($\beta = -0.7555$,) and statistically significant effect on firm value, $p < 0.05$). Similarly, the Random Effects (RE) model yields a negative coefficient -0.9047 for Energy Consumption EC while Environmental Compliance Cost (ECC), on the other hand, shows a positive statistically significant relationship with firm value in both models (FE: $\beta = 0.2542$; RE: $\beta = 0.1813$). The study recommends that firm managers should refocus efficiency improvements of energy consumption and energy optimization strategies.

Keywords; Energy Consumption; Environmental Cost Compliance; Firm Value.

Introduction

Environmental problems like pollution, resource depletion, biodiversity loss, and climate change have become major concerns for governments, investors, and other stakeholders worldwide in recent decades (Omoboye & Ayiti, 2024). Due to these difficulties, firms are under pressure to operate sustainably and disclose their environmental policies openly. As a result,

environmental disclosure has become an essential feature of company reporting, especially when considering sustainability and Environmental, Social, and Governance (ESG) reporting (Wu, et., al., 2025)

The provision of both qualitative and quantitative information by companies on their environmental performance, policies, practices, and impacts is known as environmental disclosure. This covers

information on energy use, waste management, carbon emissions, the cost of environmental compliance, and sustainability projects (Nnedu, Okpanachi & Achema 2025). These disclosures function as a communication tool between businesses and their stakeholders and are usually included in annual reports, sustainability reports, or integrated reports. Environmental disclosure is frequently optional, particularly in developing nations like Nigeria where laws are still being developed (Babatunde & Aderemi 2019)

Because of problems including oil spills, gas flaring, industrial pollution, and inappropriate waste disposal, environmental concerns are especially important in Nigeria. The necessity for corporate accountability and transparency among quoted firms listed on the Nigerian Exchange Group (NGX) has increased due to these environmental challenges. Businesses in ecologically sensitive industries, like manufacturing, industrial products, and oil and gas, are under growing pressure to reveal their environmental practices in order to show accountability and adherence to national and international regulations (Samuel & Akinyosoye 2025)

The idea of company value is intimately related to the increasing focus on environmental transparency. Firm value, which is frequently calculated using metrics like Tobin's Q, market capitalization, or share price, reflects the market's assessment of a company's value (Maryam, Ghulam & Yasi 2021). To evaluate a company's risk profile, prospects for the future, and overall sustainability, investors and other stakeholders rely on public information. By lowering information asymmetry, boosting a company's reputation, drawing in socially conscious investors, and increasing stakeholder trust, environmental disclosure can have an impact on firm value (Yahaya, 2025)

Statement of the Problem

Companies are required to reveal information about their environmental policies due to the growing need for environmental accountability, especially in areas like energy use and environmental cost compliance. Although it is anticipated that these disclosures will boost corporate valuation and increase openness, the actual data is still conflicting and unclear, particularly in the Nigerian setting. The question of whether environmental disclosure policies genuinely add to a company's value or only reflect adherence to social and legal requirements is raised by this.

Specifically, there is limited clarity on the individual effects of environmental cost compliance disclosure and energy consumption disclosure on firm value, as most prior studies have focused on aggregated measures of environmental reporting. This aggregation obscures the distinct influence of each component, thereby creating uncertainty regarding their relative importance in shaping investors' perception and market valuation of firms.

Furthermore, there is a gap of sector-specific empirical data analyzing how these disclosure components affect business value over time, despite the manufacturing sector's economic significance and environmental sensitivity in Nigeria. The voluntary nature of environmental reporting in Nigeria contributes to this disparity by leading to inconsistent disclosure practices and undermining the validity of the information that is accessible for decision-making.

Consequently, a thorough and context-specific study that fills in these gaps by applying better methodology and concentrating on a pertinent setting is required. This study aims to close this gap by offering empirical data that will improve knowledge and guide practice and policy.

Objective of the Study

The objective of the study is to investigate;

- i. the effect of Environmental cost compliance disclosure on the firm value of quoted companies in Nigeria; and
- ii. The effect of energy consumption disclosure on the firm value of quoted companies in Nigeria.

Research Hypotheses

HO₁: environmental cost compliance information disclosure has no significant effect on the value of listed manufacturing firm in Nigeria

HO₂: Disclosure of energy use data has no significant effect on the value of Nigerian listed manufacturing companies.

Review of Related Literature

Energy consumption

Energy use encompasses various dimensions, including energy justice, household consumption, and productive use of electricity, energy services, and analytical frameworks. Each aspect contributes to a comprehensive understanding of energy dynamics and their implications for sustainability and policy. In context of manufacturing companies or any other corporate entity, energy use refer to the type consumed to operate, facilities, machinery and processes that is involve in the production of goods and services (Sören, Wilhelm, Heinz, Armin & Armin 2020). Energy use is directly related to carbon emissions and environmental deterioration from an environmental standpoint. Fossil fuel combustion greatly increases greenhouse gas emissions, which contributes to global environmental issues like climate change. Because of this relationship, stakeholders and regulators are paying more attention, which encourages businesses to use renewable energy sources and energy-efficient technologies (Li, et., al., 2023). From a disclosure and reporting perspective, energy

consumption is an important component of environmental and sustainability reporting systems, such as the Global Reporting Initiative. Information regarding energy usage, energy intensity, and energy conservation activities must be provided by companies. These disclosures improve communication and enable stakeholders to evaluate a firm's commitment to environmental responsibility (Onyebuenyi & Ofoegbu 2022).

Energy consumption is commonly operationalized in empirical studies using indices or quantitative measurements such as total energy utilized, energy intensity (energy consumption per unit of output), or a disclosure index based on stated energy-related information in yearly reports (Tho Pesch, et., al., 2023; Janita & Anna 2025). Energy use can have a beneficial or negative impact on business value studies. Efficient energy use can lower costs and improve profitability, so boosting business value, whereas excessive or poorly managed energy consumption can increase expenses and environmental dangers, potentially diminishing firm value.

Environmental Cost Compliance

Costs associated with environmental compliance can be roughly divided into a number of components. First, there are costs associated with prevention, such as investments in pollution control machinery, greener industrial methods, and eco-friendly procedures meant to lower emissions and waste creation. Second, environmental audits, inspections, and reporting tasks necessary to guarantee compliance are included in detection and monitoring costs. Third, the costs associated with clearing up environmental harm, such as trash contamination or oil spills, are referred to as remediation costs. Lastly, when businesses violate environmental standards and face fines or legal action, they incur penalty and litigation costs (Ukpeh, 2025)

The methodical identification and reporting of costs related to environmental consequences that are normally left out of traditional financial statements is known as environmental hidden cost disclosure. This idea is becoming more and more popular as stakeholders push higher levels of transparency about a company's sustainability performance and associated expenses. According to empirical research, financial performance may benefit from the disclosure of environmental expenses. For example, studies carried out in Iraqi industrial companies have shown that environmental disclosure serves as a mediating variable and that hidden costs and other environmental expenses have a substantial impact on financial performance (Al-Waeli et al., 2022). Proxies like total environmental spending, environmental protection costs, or a disclosure index based on reported compliance activities are frequently used in empirical research to calculate the cost of environmental compliance (Gray & Ronald 2021). The relationship between environmental compliance cost and performance is frequently inconsistent in research looking at firm value. High compliance costs can have a positive long-term impact on business value by boosting credibility, lowering regulatory risk, and increasing sustainability results, even while they may have a negative short-term financial impact.

Firm value

Firm value is a critical concept in accounting, reflecting a company's market worth as influenced by various financial reporting practices and corporate strategies. It encompasses the relationship between accounting metrics and market perceptions, highlighting how financial disclosures can impact investor decisions and overall firm valuation. Firm value, represents the overall economic worth of a company, encompassing

its assets, liabilities, and potential for future earnings. It reflects the market's perception of the company's success and future prospects, often tied to its stock price and other financial metrics. Essentially, it's a measure of how much a company is worth, both in terms of its tangible assets and its intangible value like brand reputation and future growth potential. Accurate financial reporting, including operational and investment data, is essential for determining firm value. A robust model links these reports to market perceptions, suggesting that transparency enhances firm valuation (Abreu, 2015). Firm value can be observed through stock prices, which are influenced by accounting disclosures. Higher transparency in financial reporting correlates with increased market valuation (Narayana & Wirakusuma, 2021).

According to Chinedum (2015), Value is viewed by both current and prospective investors as the primary justification for investing in certain companies.

Theory Underpinning

Legitimacy theory is developed by Dowling and Pfeffer (1975), there is a "social contract" between society and corporations, and a firm is considered legitimate when its ideals coincide with those of the larger social structure. Since firms are bound by social contracts that require the disclosure of various corporate social activities, legitimacy theory emphasizes the importance of effective communication to stakeholders in establishing and preserving legitimacy. This is pivotal in understanding corporate behavior, especially regarding corporate social responsibility (CSR) and accounting practices (Tyvonchuk 2025) This theory improves public acceptance and ensures the survival of the organization (Solikhah & Winarsih, 2016). Businesses can raise the level of disclosure in an effort to gain legitimacy by informing the public about their organizational operations and reaffirming that they adhere to social standards and boundaries.

Legitimacy theory is a tool that helps organizations fulfill their social contract by implementing and creating voluntary social and environmental disclosures that allow them to be recognized for their goals and survive in a volatile and fast-paced environment (Akhter et al., 2023). According to Chowdhury et al. (2020), legitimacy theory has become widely accepted in social accounting and disclosure-based research, which has greatly aided in identifying the objectives and motivations behind disclosing environmental information.

Empirical Review

Abbas, Zuriadah, and Azam (2020) looked into how environmental spending affected Iraqi industrial enterprises' bottom lines. A sample of twenty-five companies on the Iraqi stock exchange were used to collect data from the annual reports of published listed corporations. The data was analyzed using correlation and multiple regressions. The findings demonstrated that financial performance was positively impacted by conventional costs and social costs, negatively impacted by environmental potential hidden costs, and unrelated to contingency costs, image costs, and relationship costs.

Samuel, Aruna, and Amahalu (2020) examined the effect of environmental disclosure on the profitability of listed oil and gas companies in Nigeria using net profit margin as a proxy for profitability, the study's dependent variable, and waste management cost disclosure, employee health and safety cost disclosure, and environmental remediation cost as proxies for environmental disclosure. Eleven oil and gas businesses that were listed on the Nigeria Stock Exchange Group provided information between 2010 and 2019. Panel least square regression analysis of the data revealed that the disclosure of waste management, employee health and safety, and environmental remediation expenses had a

positive and significant influence on the net profit margin of oil and gas businesses.

Nwafor et al. (2026) used data gathered from thirteen oil and gas companies "contained in the annual audited financial reports and the Department of Petroleum Resources (DPR) from 2008 to 2019 using panel regression analysis to examine the environmental accounting disclosure and market value of listed non-financial firms in Nigeria." The findings indicate that whereas population control costs had a large and negative impact on return on asset (ROA), waste management costs had a favorable and considerable impact on the ROA of Nigerian oil and gas companies

Using information collected from eight quoted oil and gas companies between 2012 and 2021, including a sample of seven listed on the Nigeria exchange group,

Michał, Mohamad and Kwabena (2023) conducted a research on Evaluation of energy efficiency impact on corporate financial performance of companies in Western Europe with data collected during a timeframe characterized by stable energy prices (2015-2019) and a rapid escalation in those prices (2020-2022). The data was analyzed using a fixed and random effect model and from the result energy efficiency exerts a negative effect on corporate financial performance,

Using information gathered from non-financial companies listed on the NGX as of December 31, 2023, Agbo, Emmanuel, Uchenna, Uwaleke, and Achema (2024) investigated the impact of energy consumption and greenhouse gas emission disclosure on the market competitiveness of listed non-financial corporations in Nigeria. The data was evaluated using panel regression analysis and descriptive and inferential statistical techniques. The findings showed that energy consumption and green gas emissions have a favorable impact on the firm value of Nigerian non-financial listed firms.

Ubokudom, Akpan, and Akininnyi (2024) examined the financial performance and environmental remediation costs of Nigerian listed firms using data collected from ten oil and gas companies listed on the Nigerian Exchange Group as of 31st, 2022 for a ten-year period from 2013 to 2022. The Ordinary Least Square regression technique was used to analyze the data, and the findings indicated that while environmental cleanup and environmental safety costs had a significant positive impact on oil and gas return on assets, waste management costs had a negligible negative impact.

Ahmed and Demet (2025) used data gathered between 2021 and 2023 to examine the impact of renewable energy usage on financial performance. Renewable energy consumption has a relatively small negative impact on return on assets, according to Shap, a XAI approach used to evaluate the data; yet, an increase in the total renewable energy ratio contributes to return on assets.

Using information gathered from the Nigeria Stock Exchange over a nine-year period from 2015 to 2023, Eshirambe and Adejuwon (2025) examined the energy usage and financial performance of listed cement manufacturing companies in Nigeria. The data was evaluated using descriptive statistics and correlation, which demonstrate that energy use has a major impact on financial performance.

Research Gap

The relationship between environmental disclosure and corporate value has been the subject of much empirical research, but the

results are still conflicting and unclear, especially in emerging economies. The tendency to interpret environmental disclosure as an aggregate construct, which obscures the potentially varied effects of its underlying components, is a major weakness of previous research. The Global Reporting Initiative (GRI) and the International Sustainability Standards Board (ISSB), two developing global reporting frameworks that prioritize disaggregated, decision-useful sustainability information, such as metrics on energy consumption and environmental compliance costs, make this particularly problematic. Furthermore, despite the manufacturing sector's substantial environmental impact and economic significance in Nigeria, the research is largely biased toward industries like oil and gas, with little empirical attention paid to it. Short time horizons and traditional estimate methods, which may not effectively handle panel data complications such cross-sectional dependency and heterogeneity, are methodological constraints on many investigations. As a result, there is still a lack of solid, sector-specific, and component-level research about the ways in which different environmental disclosure procedures affect business value. By analyzing the disaggregated effects of energy consumption and environmental cost compliance disclosures on firm value among listed manufacturing firms in Nigeria over a long period (2015–2025), this study fills in these gaps. while utilizing robust panel estimate methods (Driscoll–Kraay standard errors) to improve the validity and dependability of results.

Model specification

The study adopts a model modified from the study of Ukpeh, 2025. This is shown below;

Tobin's $Q = f(EC, ECC)$ -----Equation 3.1

Tobin's $Q = \beta_0 + \beta_1 EC_{it} + \beta_2 ECC_{it} + \varepsilon_{it}$ ----- equation 3.2

Where Tobin's Q is used for firm value

EC is for energy consumption

ECC is for environmental cost compliance

β_0 is for intercept

β_1 - β_2 is for coefficient of the independent variable

ϵ_{it} is for error term

Analysis of Data

Table 4.1; descriptive statistics summary

Variables	Obs	Mean	Std. Dev.	Min	Max
TOBINSQ	450	1.631	1.593	-.31	12.69
EC	450	.061	.157	0	1
ECC	450	.036	.142	0	1

Source; Authors' Computation (2026)

Table 4.0 revealed descriptive statistics of important stylized facts concerning company value, energy consumption, and environmental cost compliance disclosure policies among manufacturing companies listed on the Nigerian Exchange Group (NGX) between 2015 and 2024. A standard deviation (1.59) is observe alongside with -0.31 to 12,9 for minimum and maximum which points a serious heterogeneity in firm value across sampled firm over time. Energy consumption and environmental cost compliance shows 0.061 0.036 respectively indicating generally weak disclosure intensity among Nigeria manufacturing companies.

Table 4.2; Normality of Data Result

Variable	Obs	W	V	Z	Prob > z
TOBINSQ	450	0.62379	114.190	11.330	0.00000
EC	450	0.88386	35.252	8.519	0.00000
ECC	450	0.86946	39.623	8.799	0.00000

Sources; Authors Computation, 2026

This result shows that the probability (prob > z) for Tobin's Q, Energy Consumption (EC) and Environmental Cost Compliance (ECC) are 0.00000 which are all less than conventional level of significance of 0.05 to the decision rule of Shapiro wilk test, when the probability value is less than 0.05, the null hypothesis of normal distribution is rejected. This indicates that data of energy consumption and environmental cost compliance are not normally distributed.

Table 4.3 Spearman's Rank Correlation Result

	TOBINSQ	EC	ECC
TOBINSQ	1.0000		
EC	-0.1843	1.0000	
ECC	-0.1159	0.5119	1.0000

Source; Authors' Computation (2026)

Table 4.3 show that there is a negative relationship of -0.1843 of energy consumption and -0.1159 of environmental cost compliance with Tobin's Q suggesting that increase

disclosure related to energy consumption and environmental cost compliance will not enhance firm value.

Table 4.4; Two-Way Fixed Effects (Driscoll–Kraay) and Random Effects Regression Results

Variables	Fixed Effects (FE – Driscoll–Kraay)	Random Effects (RE)
EC	-0.7555 (0.2637)	-0.9047(0.5023)
ECC	0.2542 (0.2563)	0.1813 (0.4468)
Constant	12.8863 (2.6813)	5.6717 (1.2798)
R ² (Within)	0.1526	0.0831
F / Wald Statistic	58872.46	14.58
Prob > F / Chi ²	0.0000	0.0022

Sources; Research Computation, 2026

The Random Effect (RE) model explains 8.31% of the within-firm variation in Tobin's Q, whereas the Fixed Effect FE model explains roughly 15.26% ($R^2 = 0.1526$). The combined significance of the explanatory variables in the FE model is confirmed by the extremely high F-statistic (58872.46, $p = 0.0000$), and the overall model significance is also indicated by the Wald statistic for the RE model (14.58, $p = 0.0022$).

The findings from the two-way Fixed Effects (FE) model disclose that Energy Consumption (EC) produces a negative ($\beta = -0.7555$,) and statistically significant effect on company value, $p < 0.05$). This implies that an increase in energy consumption can lead to decline in Tobin's Q.

Similarly, the Random Effects (RE) model yields a negative coefficient for Energy Consumption EC ($\beta = -0.9047$) with a statistical significance ($p < 0.10$). The outcomes align with the hypotheses of legitimacy theory. According to the two-way Fixed Effects estimates, energy use has a statistically significant negative impact on firm value, indicating that increased energy use lowers market valuation and decreases societal approval of businesses. This suggests that companies who are thought to do poorly in terms of the environment are being penalized by stakeholders.

Environmental Compliance Cost (ECC), on the other hand, shows a positive significant relationship with firm value in both models (FE: $\beta = 0.2542$; RE: $\beta = 0.1813$). This suggests that although higher environmental compliance spending may indicate corporate responsibility, and will have significant effect on firm valuation during the study period. Despite having a positive coefficient, Environmental Compliance Cost having statistical significance suggests that spending on environmental cost compliance will increase company firm value.

Conclusion

The study examined the environmental disclosure and firm value of quoted companies listed in the Nigeria exchange group over ten years, from 2015 to 2025. The results show the company value is negatively and statistically significantly impacted by energy consumption (EC), suggesting that increase in energy consumption does not increase the firm value of the studied

companies. But there is a positive but statistically significant correlation between Environmental Compliance Cost (ECC) and business value which means that spending on environmental cost compliance will enhance firm value.

Recommendation

The study recommends that;

- (i) Rather than manufacturing companies emphasizing volume-based energy consumption disclosures that deals with energy intensity and cost exposure, firm managers should refocus efficiency improvements of energy consumption and energy optimization strategies,
- (ii) Firms should treat same primarily as a regulatory assurance tool rather than a strategic instrument for value creation.

Contribution to knowledge

- (i) The study contributes to existing literature by deepening of theoretical understanding and showing that not all environmental disclosures are equally valued in enhancing the firm value of quoted manufacturing firm
- (ii) It provides empirical evidence on how energy consumption and environmental cost compliance affect firm value of quoted manufacturing companies in Nigeria.
- (iii) The study enables shareholders understand the environmental Impact assessment of their company.

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**The Impact of Natural Resource Depletion on Economic Diversification in Nigeria****Stephen Obinozie¹, Ogwu, Goddey Obuareghe², Chijioke Richie Ezekwube³, Jude Dike⁴**¹Department of Economics,

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⁴Jude.dike@dou.edu.ng**Publication Date: 2026/06/22***Abstract*

The relationship between natural resource depletion and economic diversification remains a consequential unresolved question in development economics, particularly for resource-dependent economies where structural concentration persists despite decades of extraction. This study examines the effect of natural resource depletion on economic diversification in Nigeria over the period 1990 to 2024, with regulatory quality introduced as a moderating variable. Economic diversification is measured through the export diversification index, while natural resource depletion is measured as adjusted savings from natural resource depletion as a percentage of gross national income. The control variables are gross fixed capital formation, inflation, trade openness, and regulatory quality. The study employs the Autoregressive Distributed Lag bounds testing approach of Pesaran, Shin, and Smith (2001) as the primary estimator, with Fully Modified Ordinary Least Squares and Dynamic Ordinary Least Squares as robustness checks. The theoretical framework draws on the Resource Curse Hypothesis, Dutch Disease Theory, and Institutional Quality Theory. The bounds test confirms cointegration in both the baseline and moderation specifications at the one percent significance level. The baseline results show that natural resource depletion exerts a negative short-run effect on diversification, consistent with Dutch Disease

crowding-out mechanisms, while the positive long-run baseline estimate reflects fiscal spillover channels rather than genuine structural transformation. The moderation model reveals that once regulatory quality is explicitly controlled, the long-run depletion coefficient reverses to negative, confirming that the true structural effect of depletion on diversification is negative. Inflation consistently constrains diversification in the long run, while gross fixed capital formation generates short-run gains that do not persist. The robustness checks confirm directional consistency across all key variables. The findings carry policy implications for fiscal rule design, institutional reform, macroeconomic stabilisation, and targeted capital formation in Nigeria.

Keywords: *Economic diversification, Natural resource depletion, Regulatory quality, Gross fixed capital formation, Inflation, Trade openness, Nigeria, ARDL, FMOLS, DOLS*

Introduction

The structural dynamics of natural resource dependency stand out prominently amongst the key unresolved issues confronting development economists today. Endowed with significant endowments of natural resource wealth, such countries confront conflicting incentives in terms of depleting natural resource assets to meet existing expenditure demands versus utilizing resource rents to invest in reproducible capital assets required to facilitate productive diversification. For Sub-Saharan Africa, where natural resources account for approximately 30 percent of government revenues and depletion rates consistently rank among the highest in the world, this tension has produced a region that draws down its productive asset base faster than it is building alternative sources of wealth (World Bank, 2023). Econometric panel estimates based on cross-sectional data drawn from 30 Sub-Saharan African countries over the period from 1995 to 2019 confirm the idea that high levels of natural resource dependency led to lower contributions of manufacturing and services sectors to national production activities. Instead of productive diversification that would

facilitate sustainable economic growth and development, such dependency creates economies specialized along extractive industry production chains (Nwani et al., 2023). Natural resource exporting economies witnessed pronounced contraction phases in the aftermath of the end of the commodity super-cycle era in 2014, compared to relatively stable performances by economies in the same sub-region without a significant degree of dependence on natural resource exports (IMF, 2023). This divergence raises a structural question of considerable policy relevance: does the pace of natural resource depletion itself constrain the capacity of resource-dependent economies to diversify their productive base, and if so, through what long-run mechanisms does this constraint operate?

Nigeria stands out as the defining case study on the African continent within this context. Estimated at approximately 37 billion barrels of crude oil reserves, Nigeria sits atop rich mineral deposits of natural gas, solid minerals, and extensive tracts of cultivable agricultural land. Nevertheless, the composition of its exports has persisted as one of the most concentrated on the continent in recent decades (World Bank,

2023; Banjo, Iwayemi and Oyedele, 2024). With crude oil responsible for upwards of 90 percent of total exports and exceeding 60 percent of fiscal receipts while accounting for less than ten percent of GDP, Nigeria suffers from the simultaneous embedding of volatility in both its fiscal and external accounts. The export diversification index, measured as the inverse of the Herfindahl-Hirschman Product Concentration Index, confirms that Nigeria records scores near unity. Alongside Angola and Equatorial Guinea, these countries have emerged as the three most heavily concentrated exporters on the African continent since 2000 (Zarach and Parteka, 2023; Doki, & Tyokohol, 2019).

Adjusted savings from natural resource depletion accounted for above 20 percent of gross national income each year throughout the decade-long commodity boom in the 2000s without the concomitant build-up of reproducible capital formation. By depleting its productive asset endowment at such a rate and failing to accumulate the requisite base of diversified productivity across multiple sectors, Nigeria finds itself with diminished resource endowments and unstructured production dynamics (World Bank, 2023). GDP per capita contracted dramatically from \$2,198 in 2022 to \$1,637 in 2023, indicating the high susceptibility to shocks exhibited by an economy devoid of diversification buffers against external price movements and fiscal fluctuations (IMF, 2024). Aggregate statistics thus corroborate evidence suggesting that sustained depletion has failed to facilitate diversification processes, making Nigeria a crucial context within which the depletion-diversification dynamic can be investigated empirically.

Some factors that define the diversification context along with the natural resource depletion include structural variables and macroeconomic conditions. The gross fixed capital formation has been consistently lower than the benchmark level of 30 percent of

the GDP required for sustained economic transformations, while there is substantial empirical evidence indicating a gap between the investment and its target level of 16 percentage points (Awe and Dias, 2022). Trade openness, which amounted to an average value of approximately 25 percent of the GDP throughout the research period, was not able to ensure the diversification effect associated with open trade regime because, as recently confirmed by ARDL estimation techniques, the impact of trade openness in Nigeria has been positive only for the industrial and service sectors (Peverga, 2024). Regulatory quality has remained below the median among Sub-Saharan countries on the basis of World Bank's institutional indicators, thus indicating the institutional environment as one of the major constraints to turning rent from natural resources into investments into diversified economy (World Governance Indicators, 2023). Finally, the inflation rate that reached a value of 33.2 percent in Nigeria in 2024 undermined the investment conditions necessary for developing non-oil tradable sector in Nigeria, with recent evidence confirming its structurally disruptive effect on investment incentives in the non-oil economy (African Development Bank, 2024; Ekpo, Ebiefie and Udobia, 2025).

There is a general consensus in the empirical literature concerning natural resources depletion and economic diversification in terms of a negative relationship but the mechanisms and magnitudes remain disputed. In a study of export diversification and natural resource dependence in 160 countries from 1996 to 2018, Zarach and Parteka (2023) found resource dependence to be a significant negative predictor of export diversification even after controlling for income, geographical and institutional factors, where the quality of institutions was identified to determine the ability of resource-dependent countries to diversify. In an article published in the Journal of

Development Economics, Bahar and Santos (2018) use oil and gas field discoveries and commodity price changes as instrumental variables, discovering that countries with 30 percentage points more natural resources export shares have 44 percent more exports concentrated, where rising wages due to the natural resource boom increase the cost of production in capital-intensive industries and change the composition of the country's exports to low-sophistication products. More specifically in Nigeria, Awe, Musa and Sanusi (2023) apply unsupervised machine learning methods to disaggregated revenue data in Resources Policy and find that crude oil is categorically separated from other sectors in the economic system, where there exists almost no correlation between oil revenue and any other economic performance measures, which shows the lack of productive linkages necessary for resource revenue to aid diversification in the economy. These findings collectively establish the empirical relevance of the depletion-diversification nexus but stop short of directly estimating its dynamic long-run and short-run structure within a Nigerian time-series framework.

The role of institutional quality in mediating the diversification effects of natural resource depletion constitutes a second strand of evidence directly relevant to this study. Mehlum, Moene and Torvik (2006) establish formally that the growth effect of natural resource wealth turns negative in countries where governance structures favour rent-seeking over productive investment, a result confirmed across Sub-Saharan Africa by Nwani et al. (2023), who find that financial development through the institutions channel partially counteracts the structural concentration effect of resource dependence. Within Nigeria, Doki, & Tyokohol (2019) confirm that gross fixed capital formation and trade openness are significant determinants of diversification outcomes in

ARDL estimation, while their error correction results establish the existence of a long-run adjustment mechanism linking these institutional and structural variables to diversification performance. The moderating role of regulatory quality is further supported by the broader cross-country evidence of Zarach and Parteka (2023), who find that institutional quality is the primary determinant of whether resource exporters can escape diversification constraints over time. These results collectively motivate the inclusion of regulatory quality as both a conditioning variable and a theoretically grounded moderator of the depletion-diversification relationship.

Trade openness, gross fixed capital formation, and inflation are another category of conditional variables that have been justified by existing empirical literature. With respect to trade openness, the study by Peverga (2024) reveals the significant positive correlation between trade openness and economic performance measured with the help of an ARDL model between trade openness and economic growth of Nigeria between 1980 and 2022, and according to Doki & Tyokohol (2019), trade openness belongs among the significant determinants of export diversification outcomes in Nigeria. On gross fixed capital formation, Awe and Dias (2022) revealed that the value of diversification index of Nigeria is determined by the gross fixed capital formation as this variable conceptually is associated with supply-side approach that is necessary to transform resource rents into non-oil productive resources for the sake of diversification. Finally, according to Ekpo, Ebiefie, and Udobia (2025), high rates of inflation that Nigeria experiences are caused by the presence of high volatility in oil revenues and fiscal expansion as well as exchange rate depreciation that hampers investment in the non-oil sector, while according to African Development Bank

(2024), the average level of inflation is reported to be at 33.2% in 2024, compounding the structural damage that resource depletion inflicts on tradable sector competitiveness.

Despite this body of evidence, three gaps limit the direct applicability of existing findings to the question motivating this study. First, no existing study directly estimates the dynamic long-run and short-run effects of natural resource depletion, measured as adjusted savings from natural resource depletion as a percentage of gross national income, on the export diversification index in Nigeria within a unified time-series framework. Most studies use oil rents or resource dependence as a share of GDP rather than the rate of depletion, and model growth or sectoral output rather than export diversification directly. This distinction matters because the flow measure of depletion captures the pace at which the resource stock is being drawn down, which is most directly relevant to the long-run sustainability of any diversification strategy.

Second, no study simultaneously incorporates regulatory quality, trade openness, gross fixed capital formation, and inflation alongside natural resource depletion in a single ARDL specification, making it impossible to assess the relative strength of each channel or to determine whether institutional quality genuinely moderates the depletion-diversification relationship after controlling for macroeconomic confounders. Third, the ARDL bounds testing framework, which accommodates mixed orders of integration, recovers long-run equilibrium coefficients alongside error correction dynamics, and remains valid in finite samples, has not been applied to the depletion-diversification nexus specifically, leaving a methodological gap that this study is positioned to close.

This study fills these gaps by examining the effect of natural resource depletion on economic diversification in Nigeria over the period 1990 to 2024 using the ARDL bounds testing approach. Economic diversification is the dependent variable, measured through the export diversification index. Natural resource depletion is the primary explanatory variable, measured as adjusted savings from natural resource depletion as a percentage of gross national income. The control variables are trade openness, gross fixed capital formation, inflation, and regulatory quality. The study makes three contributions to the literature. First, it provides the first direct time-series estimation of the long-run and short-run effects of natural resource depletion on the export diversification index in Nigeria, generating error correction coefficients that quantify the pace of diversification adjustment following depletion shocks. Second, it tests whether regulatory quality moderates the depletion-diversification relationship within the same ARDL specification, providing evidence on the institutional channel that existing single-variable and panel studies cannot isolate. Third, it produces empirical evidence calibrated to Nigeria's historical experience across three decades of commodity cycles and institutional change, generating policy-relevant findings directly applicable to the country's ongoing diversification agenda.

The remainder of the paper is organised as follows. Section 2 reviews the relevant theoretical and empirical literature. Section 3 presents the data and econometric methodology. Section 4 reports and interprets the empirical results. Section 5 concludes with policy implications.

Literature Review

Theoretical Framework

The link between natural resource depletion and economic diversification in Nigeria occurs via several channels. To explain why resource-abundant economies do not diversify, the research must not only consider the connection between resource depletion and economic concentration, but also explore through which mechanisms do depletion impact diversification and in what institutional environment such constraints operate most strongly. This study draws on three complementary theoretical perspectives: the Resource Curse Hypothesis, Dutch Disease Theory, and Institutional Quality Theory. Instead of adopting each theory as an isolated explanation of the phenomenon, this paper aims to combine these approaches to develop a consistent analytical framework in which resource depletion is the main constraint on diversification, while the mechanisms of Dutch Disease reveal sectoral transmission channels, and institutional quality determines the strength of the constraints.

According to the Resource Curse Hypothesis, attributed mainly to the pioneering research of Sachs and Warner (1995), countries endowed with natural resources tend to grow slower and to achieve lower diversification compared to their resource-poor peers. It is not the abundance of natural resources themselves but the economic and fiscal response to their presence that drives the hypothesized processes of decline. Abundant resource rents lead to consumption booms, alleviate the fiscal pressure on effective governance, draw skilled labour and capital away from manufacturing and agricultural sectors, as well as to stimulate rent-seeking, shifting politicians' attention from productive investments to rents. The result is a gradual economic concentration in the sector producing resource rents and a reduction in diversification capabilities necessary to survive any shocks. Applied to the Nigerian

case, this process has a clear causal chain: accelerated exploitation of oil since the 1970s resulted exactly in the processes described by the hypothesis (Awe, Musa and Sanusi, 2023; Banjo, Iwayemi and Oyedele, 2024). This framework produces the core prediction of the research: natural resource depletion impacts economic diversification negatively.

The Dutch Disease Theory, developed by Corden and Neary (1982), offers the sectoral transmission mechanisms through which resource discoveries hurt diversification prospects. In total, there are two main effects described in this theory. First is the spending effect, which takes place via fiscal channels because revenue from resources allows increasing government expenditures and household incomes, boosting the demand for domestic non-tradable goods while making it more expensive and less competitive for the tradable non-resource sector to produce these products. Second is the resource movement effect, which occurs due to the fact that a booming resource sector leads to the transfer of factors into resource production from tradable goods, making production more costly overall. In sum, there will be an appreciation of the real exchange rate and reduction in the tradable non-resource sector's volume, which aligns perfectly with the findings of the study of Nigeria's export structure during its oil boom cycles (Onuoha, 2022; Igbe, & Egbon 2025). Bahar and Santos (2018) prove that economies with higher resource export volumes have a larger degree of non-resource exports' concentration, offering solid empirical evidence for this approach. This framework predicts that the negative effect of resource depletion on diversification operates partly through real exchange rate appreciation and factor market distortions that amplify export concentration over time.

The Institutional Quality Theory, built on the concepts developed by North (1990) and

Scott (1995), provides an explanation for the success of some resource-rich nations in overcoming the resource curse and the inability of others to do the same. According to this theory, institutional arrangements including property rights, regulation regimes, rule of law, and accountability systems influence how resource revenues are divided between investment in productive capacity and rent extraction. In countries where there is effective institutions, resource revenues are invested in building infrastructures, developing human capital and adopting technologies necessary for diversifying economic activities in the face of Dutch Disease consequences. In contrast, ineffective institutions lead to the appropriation of resource revenues by political elites or the use of resource revenues to sustain the dominant resource-based sector through subsidies. For Nigeria, the historically low institutional quality in terms of regulatory arrangements is expected to exacerbate the problem of diversification brought about by resource depletion because institutional effectiveness ensures that resource rents are productively used (World Governance Indicators, 2023). As explained formally by Mehlum et al., (2006), poor institutional governance reverses the positive impact of resource endowment on growth to a negative impact through rent-seeking and lack of productive investment. Institutional quality therefore operates as a moderating variable in the framework: it dampens the negative effect of depletion on diversification in well-governed settings and intensifies that effect where governance remains weak.

Overall, these three frameworks provide for a structured approach where natural resource depletion is the key constraint on diversification, the operation of Dutch Disease provides the mechanism through which this constraint affects an economy, and institutions affect the effectiveness of mitigating this problem. This structure

motivates the following directional hypotheses: Natural resource depletion is expected to exert a negative long-run effect on economic diversification in Nigeria, consistent with the resource curse hypothesis (H1). The negative effect of depletion is expected to operate through real exchange rate appreciation and factor market distortions that amplify export concentration, consistent with Dutch Disease theory (H2). Regulatory quality is expected to moderate the depletion-diversification relationship, with stronger institutions dampening the negative effect by improving the productive deployment of resource revenues (H3). Trade openness and gross fixed capital formation are expected to exert positive effects on diversification by expanding productive capacity and integrating Nigeria into global value chains that incentivise sectoral development beyond oil (H4). These hypotheses are tested within the ARDL bounds testing framework described in Section 3.

Empirical Literature Review

Natural Resource Depletion and Economic Diversification

The empirical literature establishes a consistent negative relationship between natural resource dependence and export diversification, though the strength of this relationship varies by context, estimation method, and how resource dependence is measured. Zarach and Parteka (2023) examine 160 countries using a decomposition of the weighted Theil index and find that resource dependence limits not only the volume of non-resource exports but also their technological variety, with the effect persisting after controlling for income, geography, and institutional quality. Their finding that institutional quality determines the ability of resource exporters to diversify

introduces an important conditionality: resource dependence is not uniformly damaging but operates through governance structures that either facilitate or obstruct productive reallocation. Complementing this, Vogel (2025) applies Bayesian Model Averaging to 47 African countries from 1995 to 2018 and finds that natural resource rents rank among the most robust negative predictors of export diversification across the continent, with structural features of exporting economies explaining Africa's persistently narrower export baskets relative to other world regions.

For the sub-Saharan part of Africa, the literature appears to conclude that the existence of natural resource dependence constrains the process of structural transformation in more than just a single industry but without causing the crowding-out effect in the manufacturing industry. According to Nwani et al. (2023), using the method-of-moments estimator corrected for the possible bias in 30 economies, it becomes clear that natural resource dependence hampers the growth of output performance of both manufacturing and service industries, with the development of the financial sector via institutional factors serving to counteract this negative impact. Asiamah et al. (2022), using the system GMM methodology based on the data available during 2005-2019, confirm the aforementioned results and prove the idea that natural resource dependence negatively impacts the growth performance in the spheres of manufacturing, services, and agriculture simultaneously; thus, the two processes of Dutch Disease and pull effect complement each other. The research carried out by Mpuure et al. (2024) based on the analysis of 41 African countries proves that natural resource dependence reduces welfare performance due to restraining productive sectoral developments, with institutional and policy environments

determining whether the damage is contained or amplified.

The structural nature of resource dependency assumes an even more intense form within Nigeria. According to Awe, Musa and Sanusi (2023), using unsupervised machine learning on disaggregated data reveals that crude oil is placed into an isolated category in the economic structure of Nigeria, since the results based on Spearman correlation show very weak or even non-existent correlation between the inflows from crude oil and all other economic factors. Therefore, the isolation of the resource in question refers not only to the intensity but also to the structural nature of its role, which means the lack of linkages between resource dependency and production of other commodities. Banjo, Iwayemi and Oyedele (2024) have found that natural resources dependence has a detrimental effect on various macroeconomic factors in Nigeria, thereby confirming that the structure under discussion may be regarded as an example of the resource curse. The Nigerian research is aimed at providing an empirical basis for further analysis of the depletion-diversification link but does not estimate it, leaving the dynamic long-run and short-run relationship between the rate of depletion and the export diversification index unaddressed.

Dutch Disease, Export Concentration, and Structural Transformation

The Dutch Disease literature provides the most direct theoretical and empirical grounding for the depletion-diversification relationship this study examines. Bahar & Santos (2018) employ the discovery and price variables for oil and gas fields to instrument for the causality of resource dependency on export concentration and demonstrate that countries that are 30 percentage points more

resource-dependent have 44 percent higher concentrations of their exports measured by the Herfindahl-Hirschman index. They develop an explanation of the causality based on the resource-induced wage inflation that increases the costs of intensive manufacturing, leading to the reallocation of the export basket in favor of less developed products that become increasingly concentrated. Importantly, they estimate that about 75 percent of the increase in the concentration level comes from the relative change in existing export product categories, and not the disappearance of export products, implying that Dutch Disease operates by suppressing the scaling-up of non-resource sectors rather than eliminating them outright.

Asiamah et al. (2022) examined the impacts of Dutch Disease via the pull effect mechanism on Sub-Saharan Africa. They utilize system GMM estimations to demonstrate the simultaneous negative impacts of the resource sector on the value added by manufacturing, services, and agriculture. It is important to note that they demonstrate that the pull effect operates through all tradable goods, not manufacturing only. This finding is highly relevant for Nigeria, where agriculture was the dominant tradable good before the emergence of the oil industry and has been disproportionately affected by Dutch Disease in subsequent oil booms. In fact, Porteous (2022) finds that as a result of oil revenues growing in Nigeria, the country has become one of the largest importers of agricultural products and net exports in both industries are negatively correlated across many years. His findings suggest that decreasing oil revenues since 2014 started stimulating agricultural production in locations that experience lower transaction costs of production, implying that the diversification damage from Dutch Disease episodes can reverse when depletion reduces resource

revenue pressure, though the reversal is slow and spatially uneven.

The Nigerian-specific evidence on Dutch Disease and structural transformation reinforces these cross-country patterns. According to Onuoha (2022), competitiveness within agriculture decreased in Nigeria during waves of oil booms, showing how spending impacts work in relation to all types of industries. In addition, according to Doki et al. (2019), by applying an ARDL method of analysing export diversification from 1981 to 2022, they revealed that export diversification leads to sustainable economic growth in Nigeria, and such a relationship is affected positively by trade openness and gross fixed capital investment. Abdulkarim (2023) introduces a relevant qualification, finding that non-oil imports facilitate long-term growth through technology access while oil export dependence simultaneously constrains it through Dutch Disease channels, making the net diversification effect of trade openness dependent on the composition of trade flows rather than their aggregate level. Together these findings establish that Dutch Disease effects in Nigeria are pervasive, multi-sectoral, and sensitive to both trade structure and resource revenue levels.

Institutional Quality and Economic Diversification

The institutional pathway that links resource dependence to diversification performance has attracted considerable empirical evidence, showing that governance quality dictates the extent to which resource rents can be invested productively or pocketed as rent-seeking. The initial evidence provided by Mehlum et al. (2006) reveals that the impact of natural resource wealth on economic growth depends on whether the institutions in place are producer-friendly or grabber-friendly. In other words, the same amount of resource wealth is shown to have opposite

impacts on economic growth when the institutional framework is favorable versus unfavorable. Building on this result, Asiamah et al. (2022) find in another study in Resources Policy that resource dependence actually undermines the quality of institutions in Sub-Saharan Africa via rent-seeking behavior, thus creating an interconnection where resource dependence limits diversification performance in addition to hindering institutional development. This endogeneity between resource dependence and institutional quality strengthens the theoretical case for including regulatory quality as a moderating variable.

Within Nigeria, the literature on the governance-resource relationship is unanimous. According to Fagbemi and Kotey (2024), using ARDL bounds testing and VECM analysis between 1996 and 2019, weak governance along with rents derived from natural resources has insignificant and potentially negative effects on economic growth in the short term and long term respectively, with one-way causation running from the combination of rents and weak governance to economic growth. This indicates that not only do regulation quality act as background conditions to economic development but rather have an active role in the relationship between natural resource rents and economic development. Regulatory quality is thus crucial to include in this research model for the very reason stated above. Furthermore, according to Igbe & Egbon (2025), the structural problem created by appreciation in the real exchange rate, resulting from resource rents, causes the conventional industry sectors to lose their comparative advantage, necessitating regulatory intervention as the main policy instrument to overcome this structure. The consistency of these findings across different methods and institutional indicators supports the expectation that stronger regulatory quality will partially offset the diversification-

constraining effect of natural resource depletion.

Control Variables: Trade Openness, Gross Fixed Capital Formation, and Inflation

Trade openness acts as a conditioning factor in the process of diversification through technological development, competitiveness, and globalization potentiality. As pointed out by Vogel (2025), two of the main predictors of export diversification in Africa include trade partners and regional integration, and the nature of the effect of trade openness on export diversification is determined by the structural peculiarities of the country exporter. Thus, concerning Nigeria, it is crucial to note that according to the research carried out by Doki et al. (2019) with the help of the ARDL method for the period from 1981 to 2022, trade openness has a positive effect on export diversification. However, it was clarified by Abdulkarim (2023) that the effect of trade openness on export diversification could be recognized as positive, yet not always. Such a situation would occur under conditions when the structure of trade included non-oil products only, and through technological progress, it brought positive results despite the impact of Dutch Disease effects of oil export. This conditionality implies that the net contribution of trade openness to diversification in Nigeria cannot be assessed without simultaneously controlling for the resource depletion environment in which it operates, reinforcing the logic of including both variables in the same specification.

Gross fixed capital formation represents the supply-side channel through which resource rents should be transformed into productivity non-oil resources needed for diversification. Awe and Dias (2022) revealed that investment rate in Nigeria is about 16

percentage points lower than the required level for successful structural transformation. Thus, they confirm the size of the capital gap which hinders the development of the non-oil industry. Their findings based on the application of the FMOLS technique show that gross fixed capital formation is one of the systemically important factors that explain changes in Nigeria's diversification index, making its inclusion in the empirical model both theoretically and empirically motivated. Doki et al. (2019) use it in the ARDL model of diversification as well as prove that it should be treated as an important explanatory variable due to the fact that it works as the main mechanism of investment-driven diversification. Nwani et al. (2023) reinforce this logic from the panel perspective and prove that financial development helps reduce structural concentration caused by resource dependence by shifting investments to manufacturing services.

Inflation impacts diversification in a complicated manner, although a predominance of adverse influences operates through its effect on the creation of unfavourable macroeconomic environments for investment in other sectors. At the macro level, inflation leads to the reduction of real incomes, higher costs of intermediate products, and shortened investment planning periods, leading to the instability which inhibits investment necessary for diversification. In the case of Nigeria, according to Ekpo and Udobia (2025), inflation has occurred due to the combination of oil revenue fluctuations with fiscal expansions and devaluations, producing a structure in which the problem of resource dependency has combined with macroeconomic instability in diversification terms. Sectorally, inflation resulting from the impact of spending in non-tradable goods affects the competitiveness of the tradable non-oil sectors in a manner similar to the

effect identified at the macro level by the Dutch Disease framework. As Awe and Dias (2022) have empirically shown, through estimating with the FMOLS technique, the movements of inflation are a systematic determinant of variations in the Nigerian diversification index.

Research Gaps

The empirical literature reviewed above establishes a strong evidentiary base for the relevance of natural resource depletion, Dutch Disease mechanisms, institutional quality, and macroeconomic conditioning variables to diversification outcomes in resource-dependent economies, but three gaps limit its direct applicability to the question motivating this study.

The first gap concerns the measurement and direct estimation of the depletion-diversification relationship in Nigeria. Most existing studies use oil rents or resource dependence as a share of GDP rather than the adjusted savings measure of natural resource depletion, which captures the rate at which the resource stock is being drawn down relative to national income. This distinction matters because the flow measure of depletion is the most directly relevant indicator for assessing whether Nigeria's resource extraction trajectory is consistent with long-run sustainable diversification. Moreover, no existing study directly estimates the long-run and short-run dynamic relationship between this depletion measure and the export diversification index in Nigeria within an ARDL bounds testing framework, leaving the question of whether depletion has an identifiable long-run equilibrium effect on diversification, and how quickly deviations from that equilibrium are corrected, entirely unaddressed.

The second gap concerns the simultaneous specification of the full set of conditioning

variables alongside depletion. Studies such as Fagbemi and Kotey (2024) examine the governance-resource rent interaction in Nigeria but do not model export diversification as the outcome or include trade openness, capital formation, or inflation as controls. Studies such as Doki et al. (2019) model export diversification with trade openness and capital formation but do not incorporate natural resource depletion or institutional quality. The result is a fragmented literature in which the relative contributions of each channel cannot be assessed, and in which the moderating role of regulatory quality in the depletion-diversification relationship cannot be isolated after controlling for macroeconomic confounders. The present study addresses this gap by incorporating all five variables in a single ARDL specification.

The third gap concerns the country specificity of the evidence. The cross-country and panel findings from Zarach and Parteka (2023), Vogel (2025), Nwani et al. (2023), Asiamah et al. (2022), and Mpuure et al. (2024) generate broadly applicable insights that are difficult to translate into policy recommendations calibrated to Nigeria's particular three-decade experience of oil price cycles, structural adjustment, and institutional change. A single-country time-series estimation over 1990 to 2024 generates error correction coefficients that reflect the actual speed of diversification adjustment in Nigeria, long-run equilibrium estimates that are calibrated to Nigeria's historical data, and short-run dynamics that capture how the Nigerian economy responds to depletion shocks within the specific institutional and macroeconomic context of the country. This country-specific calibration is the methodological contribution that the present study makes to an otherwise panel-dominated literature.

Methodology

This study employs the Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran, Shin, and Smith (2001) to examine the effect of natural resource depletion on economic diversification in Nigeria over the period 1990 to 2024. The ARDL framework is selected on three grounds. First, it accommodates variables with mixed integration orders, allowing estimation to proceed where some series are stationary at level and others at first difference, provided no variable is integrated beyond order one. Second, the ARDL approach recovers both short-run dynamic coefficients and long-run equilibrium estimates within a single unified specification, avoiding the loss of information associated with two-step cointegration procedures. Third, the bounds testing procedure remains valid in finite samples, making it appropriate for the thirty-five annual observations that constitute the dataset of this study.

The model is anchored on three complementary theoretical perspectives: the Resource Curse Hypothesis of Sachs and Warner (1995), Dutch Disease Theory as formalised by Corden and Neary (1982), and Institutional Quality Theory as developed by North (1990) and extended by Mehlum, Moene, and Torvik (2006). The Resource Curse Hypothesis motivates the expectation that accelerated resource depletion constrains diversification by reinforcing fiscal dependence on extractive revenues and diverting productive factors away from non-resource industries. Dutch Disease Theory identifies the sectoral transmission channels through which resource booms impair diversification, specifically real exchange rate appreciation and factor market distortions that erode the competitiveness of tradable non-oil sectors. Institutional Quality Theory provides the moderating framework, arguing that the strength of regulatory institutions

determines whether resource revenues are channelled toward productive diversification-supporting investment or captured as rents that entrench structural concentration. Together, these three frameworks generate the directional hypotheses tested in the empirical analysis and motivate the inclusion of regulatory quality as both a conditioning variable and an interaction term in the model specification.

This study investigates the relationship between natural resources depletion and economic diversification in Nigeria. The scope of the study extends between 1990 and 2024 for Nigeria. While positing that changes in natural resources depletion, inflation, gross fixed capital formation, regulatory environment and trade openness has the capacity to alter the existing state of economic diversity, a position supported by a priori, this study therefore, expresses this relationship in a functional form.

Model Specification

The functional form of the study model as stated below:

$$ECODIV = f(NRD, INFL, LGFCF, RQ, TRADE) \quad (1)$$

The econometrics form of the equation is stated below where certain variables like GFCF were expressed in log form and the residual included.

$$ECODIV_t = \beta_0 + \beta_1NRD_t + \beta_2INFL_t + \beta_3LGFCF_t + \beta_4RQ_t + \beta_5TRADE_t + \varepsilon_t \quad (2)$$

With ECODIV denoting economic diversification as the response variable, natural resource depletion (NRD), inflation (INFL), logged gross fixed capital formation (LGFCF), regulatory quality (RQ) and trade openness (TRADE). While natural resource depletion is the key regressor, inflation, gross fixed capital formation, regulatory quality and trade openness are control regressors in the model which account for much of the changes in economic diversification according theory.

To assess the role of various government regulation directed on natural resource depletion and how economic diversification responds to it, equation 3 was introduction to capture this relationship.

$$ECODIV_t = \beta_0 + \beta_1NRD_t + \beta_2INFL_t + \beta_3LGFCF_t + \beta_4RQ_t + \beta_5TRADE_t + \beta_6NRD * RQ_t + \varepsilon_t \quad (3)$$

Data Source and Measurement

The World Bank World Development Indicators (WDI) and the Nigerian Bureau of Statistics (NBS), which offer consistent and comparable measurements for

macroeconomic, Economic diversification, and governance indicators, were the primary sources of the annual time series data used in this study, which spans the years 1990 to 2024.

Table 1: Data Measurement and Sources

Variable Name	Symbol	Measurement	Source
Economic Diversification	ECODIV	Export Diversification Index (EDI)	World Bank WDI
Natural Resource Depletion	NRD	Natural resource depletion (% of GNI)	World Bank WDI, NBS
Inflation Rate	INFL	Annual % change in Consumer Price Index (CPI)	World Bank WDI
Trade Openness	TRADE	Sum of exports and imports (% of GDP)	World Bank WDI, IMF
Gross Fixed Capital Formation	LGFCF	Natural log of gross fixed capital formation (% of GDP)	World Bank WDI, NBS
Institutional Quality	RQ	Governance index (Regulatory Quality / Control of Corruption)	World Bank WDI
Institutional quality moderating natural resources depletion	NRD*RQ	Authors computation	World Bank WDI

Source: Author's computation

Estimation Procedure

For the purposes of ensuring reliability of results and validation of the model, there are three key stages of estimation. These are Unit Root Testing, ARDL bounds test for cointegration and ARDL model estimation. First, in order to assess the stationarity of variables, the ADF and PP tests are conducted. It is thus guaranteed that none of the variables falls outside of the orders of $I(0)$ and $I(1)$, which are necessary for using the ARDL model but do not exceed $I(1)$. Second, the ARDL bounds test is conducted to see whether a long-run relationship between variables is present. The rejection of null hypothesis of no cointegration occurs when the F-statistic computed from the data exceeds the upper bound of critical values.

Third, the ARDL model is used to estimate both short-run and long-run relationships in the context of the ECM after proving the presence of a cointegration by bounds F-test. Speed of adjustments of short-run equilibrium deviations is expressed by the error correction mechanism (ECM). The long-term equilibrium relationship and short-term effects can both be estimated using this model.

The ARDL model is applied due to its capacity of estimating short-run and long-run effects, correcting spurious estimates due to its autoregressive and distributed lag properties, providing consistency even in the case of endogeneity and including variables of different order of integration into consideration (Maduka et al., 2022; Ekesiobi

et al., 2024). Robustness tests such as FMOLS and DOLS tests are conducted in order to ensure accurate estimations made through

the ARDL model and prove consistency of long-run coefficients. The equation for the ARDL model is provided below.

$$\begin{aligned} \Delta ECODIV_t = & \beta_0 \\ & + \sum_{i=1}^n \beta_1 \Delta ECODIV_{t-i} + \sum_{i=0}^n \beta_2 NRD_{t-i} + \sum_{i=0}^n \beta_3 \Delta INFL_{t-i} + \sum_{i=0}^n \beta_4 \Delta LGFCF_{t-i} \\ & + \sum_{i=0}^n \beta_5 \Delta RQ_{t-i} + \sum_{i=0}^n \beta_6 \Delta TRADE_{t-i} + \delta_1 NRD_t + \delta_2 INFL_t + \delta_3 LGFCF_t \\ & + \delta_4 RQ_t + \delta_5 TRADE_t + \pi ECM_{t-1} + \varepsilon_t \end{aligned} \quad (4)$$

Where equation (4) is the ECM dynamic ARDL regression equation with the variables remaining as earlier defined, β_1 - β_6 are the short run parameter while δ_1 -to δ_5 are the long run parameters. Δ is the difference estimator while the π is the ECM parameter.

Similarly, to capture the response of economic diversification to regulations when employed directly on natural resources activities to curb depletion, model equation 5 is introduced as follows:

$$\begin{aligned} \Delta ECODIV_t = & \beta_0 \\ & + \sum_{i=1}^n \beta_1 \Delta ECODIV_{t-i} + \sum_{i=0}^n \beta_2 NRD_{t-i} + \sum_{i=0}^n \beta_3 \Delta INFL_{t-i} + \sum_{i=0}^n \beta_4 \Delta LGFCF_{t-i} \\ & + \sum_{i=0}^n \beta_5 \Delta RQ_{t-i} + \sum_{i=0}^n \beta_6 \Delta TRADE_{t-i} + \sum_{i=0}^n \beta_7 \Delta NRD * RQ_{t-i} + \delta_1 NRD_t \\ & + \delta_2 INFL_t + \delta_3 LGFCF_t + \delta_4 RQ_t + \delta_5 TRADE_t + \delta_6 NRD * RQ_t + \pi ECM_{t-1} + \varepsilon_t \end{aligned} \quad (5)$$

The equation (4) and (5) will be estimated and used for the investigation of the studies hypothesis.

Result Presentation and Discussion

Table 2 displays the descriptive statistics of the study variables in the period between 1990 to 2024, covering 35 observations. Economic diversification (ECODIV) recorded a mean 5.83 and has a standard deviation of 0.14, varying between a minimum of 5.54 and a maximum of 6.08. The presence of skewness to the left combined with the Jarque-Bera test result of 0.669 suggests normality. In accordance with the postulations of Awe et al. (2023), diversification in Nigeria has experienced structural limitations throughout the period

under consideration because the authors argue that despite several diversification policies introduced, little progress has been made.

Natural resource depletion (NRD) was at 7.11 on average, ranging between 1.27 and 19.27 and a standard deviation of 4.02. The positive skewness (0.857) which indicates that there were a lot of values above the mean in the right-hand side tail, shows how irregular oil booms have been in Nigeria. Inflation (INFL) had an average value of 18.71 and a maximum value of 72.84 with a standard deviation of 15.87. The strong positive skewness of 2.07 and high kurtosis of 6.50

confirm the presence of extreme price episodes throughout the sample, and the Jarque-Bera probability of 0.000 firmly rejects normality. These distributional characteristics reflect the chronic macroeconomic instability that has accompanied Nigeria's oil boom and bust cycles (Ekpo et al., 2025).

Gross fixed capital formation in log form (LGFCF) revealed a mean value of 3.30, spread within 2.65 and 3.97, with standard deviation being equal to 0.42 and some slightly negative skewness. The obtained Jarque-Bera probability (0.274) allows to assume the normality of the index distribution. Low dispersion indicates slow yet non-homogeneous investments growth caused by certain issues related to institutions and lack of effective development of the nation's infrastructure (Banjo et al., 2024). Regulatory quality(RQ) demonstrated average value (-0.878) with standard deviation (0.273), wherein all of the obtained observations were negative and varied between -1.293 and 0.280. The high peakiness of kurtosis (10.83) and obtained

Jarque-Bera probability (0.000) prove violation of normality. The continuous negativity of the average value testifies poor quality of governance environment throughout the whole period under analysis in Nigeria, which is confirmed by results of numerous researches on institutional quality (Mehlum et al., 2006; North, 1990).

Trade openness (TRADE) showed average value of 12.72 with standard deviation (5.90), varying within 2.68 and 28.71. Jarque-Bera probability (0.710) proves normality of the distribution. Large variability can be attributed to dynamic process of penetration of Nigeria into international commodity markets with respect to income gained due to oil exportation and alteration in the country's currency policy (Abdulkarim, 2023; Peverga, 2024). The interaction term NRDXRQ recorded average value (-6.37) with standard deviation (4.34) and varies within -18.67 and 1.73. Continuous negativity is explained by interaction between constantly negative RQ values and positive NRDX ones, and Jarque-Bera probability (0.313) proves normality of the distribution.

Table 2: Descriptive Statistics and Correlation Matrix

Panel A: Descriptive Statistics

	ECODIV	NRD	INFL	LGFCF	RQ	TRADE	NRDXRQ
Mean	5.828349	7.110839	18.70559	3.295311	-0.878038	12.71543	-6.371477
Median	5.833301	6.681537	13.00697	3.287232	-0.940476	13.09047	-6.034231
Maximum	6.077035	19.26850	72.83550	3.972595	0.279770	28.70544	1.731274
Minimum	5.537633	1.269386	5.388008	2.651037	-1.292818	2.684290	-18.66910
Std. Dev.	0.136676	4.020213	15.86930	0.416298	0.273423	5.902950	4.338850
Skewness	-0.154405	0.856573	2.071452	-0.196801	2.276574	0.341343	-0.620178
Kurtosis	2.324244	3.788765	6.495683	1.727532	10.82940	3.062238	3.231026

Jarque-Bera	0.805014	5.187320	42.85088	2.587224	119.6280	0.685318	2.321454
Observations	35	35	35	35	35	35	35

Panel B: Pairwise Correlation Matrix

	ECODIV	NRD	INFL	LGFCF	RQ	TRADE
ECODIV	1.000000					
NRD	0.609697	1.000000				
INFL	0.163104	0.481934	1.000000			
LGFCF	0.641470	0.536430	0.432911	1.000000		
RQ	-0.179586	-0.119766	0.073131	-0.001760	1.000000	
TRADE	0.475787	0.683610	0.388716	0.441214	-0.148563	1.000000

Source: Author Regression Output (E-Views 13)

The lower panel of Table 2 contains the pairwise correlation matrix of the core six variables. There exists a positive and moderate correlation between NRD and ECODIV at 0.609697. The interpretation of this correlation is that during the sample period, higher resource depletion were associated with better diversification performance, on a bivariate basis. However, correlation should not be interpreted as causation and must be seen within the framework of multivariate analysis to identify more accurately the impact of NRD on diversification.

There exists a positive correlation of 0.641470 between LGFCF and ECODIV as expected theoretically. Capital accumulation contributes positively towards the development of non-resource productive capabilities through productive diversification. There is also a positive and weak correlation between INFL and ECODIV at 0.163104. The multivariate results reveals that there is an inverse relationship between price instability and diversification over the time horizon under consideration. There is

also a negative correlation of -0.179586 between RQ and ECODIV, a result that appears odd if considered out of the broader picture of persistently poor governance environment in Nigeria, whereby small changes in the index of governance would not contribute much to diversification success. TRADE is moderately and positively correlated with ECODIV at 0.475787, as expected theoretically because integration exposes non-oil exports to demand side effects (Doki et al. 2019).

Among the regressors, NRD and TRADE show the highest pairwise correlation at 0.683610, which raises a preliminary multicollinearity concern. However, as the variance inflation factor results in Table 3 confirm, all centred VIF values remain well below the threshold of five, with NRD at 2.297943 and TRADE at 1.938180, indicating that multicollinearity does not compromise the reliability of the regression estimates. RQ shows weak correlations with all other regressors, with the highest absolute value at -0.148563 with TRADE, further confirming the absence of extreme collinearity in the model.

Table 3: Variance Inflation Factor (VIF) Results

Variable	Coefficient Variance	Centred VIF
NRD	3.83E-05	2.297943
INFL	1.51E-06	1.415080
LGFCF	0.002339	1.506581
RQ	0.003790	1.053093
TRADE	1.50E-05	1.938180
C	0.023361	NA

Source: Author Regression Output (E-Views 13)

The results of the variance inflation factor for the baseline specification are provided in Table 3. The centred VIF of the regressors is NRD = 2.297943, INFL = 1.415080, LGFCF = 1.506581, RQ = 1.053093, and TRADE = 1.938180. All of the VIFs fall well below the critical value of five, above which multicollinearity becomes a concern

according to Hair et al. (2019). Consequently, the presence of moderate correlations found in the correlation matrix, especially that of NRD with TRADE, does not result in any estimation biases in this study. Hence, the regressors are not correlated and carry unique information.

Table 4: Unit Root Test-Trend and Intercept

Variables	Standard unit root tests				Results
	ADF		Philip Peron		
	Level	First Diff.	Level	First Diff.	
ECODIV	-2.936978	-6.346260***	-2.915471	-10.88431***	I(1)
INFL	-2.253723	-4.579521***	-2.595751	-4.561461***	I(1)
LGFCF	0.865658	-5.114030***	0.926858	-5.179583***	I(1)
	-3.019857	-1.531792***	-4.014918	-15.64723***	I(1)
NRD					
RQ	-0.099368	-4.714605***	-0.817406	-4.925579***	I(1)
TRADE	-4.365644***	-7.321932***	-3.757114***	-14.48154***	I(0)

Note: ***, **and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Source: Author Regression Output (E-Views 13)

Table 4 provides the results of the unit root tests for all variables used in this study. In

particular, the Augmented Dickey-Fuller and Phillips-Perron tests were employed under

the constant and linear trend assumption in order to establish the stationary properties of the data. According to the results, TRADE is stationary at level ($I(0)$) based on the both tests, whereas ECODIV, INFL, LGFCF, and RQ exhibit stationarity at first difference ($I(1)$).

Hence, this dataset includes $I(0)$ and $I(1)$ data, where no variable is integrated of order two, fulfilling a necessary condition for application of the Pesaran et al. (2001) ARDL bounds testing technique.

Table 5: ARDL Bounds Test for Cointegration

Panel A: Baseline Model ($k = 5$)		
Test Statistic	Value	
F-statistic	7.219044	
	$I(0)$ Lower Bound	$I(1)$ Upper Bound
10%	2.407	3.517
5%	2.910	4.193
1%	4.134	5.761

Panel B: Moderation Model (k = 6)

Test Statistic	Value	
F-statistic	7.760504	
	I(0) Lower Bound	I(1) Upper Bound
10%	2.334	3.515
5%	2.794	4.148
1%	3.976	5.691

Source: Author Regression Output (E-Views 13)

The results of the ARDL bounds test for baseline specification and moderation model specification are shown in Table 5. In the baseline model with five regressors, the calculated value of F statistic is 7.219044, which exceeds the upper critical bound value of 5.419 for one percent level of significance with 35 data points, based on Pesaran et al. (2001). The null hypothesis of absence of levels relationship is thus rejected, and the presence of long-run cointegrating relationship between ECODIV, NRD, INFL, LGFCF, RQ, and TRADE is established.

For the moderation model with six regressors, which includes an interaction effect, the

value of the F statistic is 7.760504, which exceeds the upper critical bound of 5.326 at the one percent significance level for 35 data points. Once again, the presence of cointegration is established at the one percent level. The evidence of the strong nature of cointegration in both specifications suggests that the long-run equilibrium relationship among the regressors is unaffected by the addition of the interaction effect. This result provides a solid foundation for interpreting the long-run coefficients derived from the conditional error correction regressions in both models.

Table 6: Baseline ARDL(2,3,3,3,3,3) Estimation Results

Short-Run Estimates			
Variable	Coefficient	t-Statistic	p-value
D(ECODIV(-1))	0.366176	-9.177265	0.0000
D(NRD)	-0.016173	-3.070556	0.0078
D(INFL)	-0.002201	-2.043004	0.0590
D(LGFCF)	0.367454	4.623176	0.0003
D(RQ)	0.186994	2.937292	0.0102

D(TRADE)	0.049910	3.660030	0.0023
COINTEQ(-1)	-1.159417	-9.177265	0.0000
Long-Run Estimates			
Variable	Coefficient	t-Statistic	p-value
NRD	0.094977	2.460051	0.0209
INFL	-0.007622	-3.649278	0.0012
LGFCF	-0.080899	-1.262434	0.2180
RQ	-0.617486	-6.012377	0.0000
TRADE	-0.033324	-1.274873	0.2136
C	5.345617	36.01865	0.0000

Source: Author Regression Output (E-Views 13)

Table 6 presents the short-run and long-run ARDL estimates for the baseline model. The findings reveal how natural resource depletion and the control variables are associated with changes in economic diversification in Nigeria between 1990 and 2024.

In the short run, natural resource depletion (NRD) is negative (-0.016) and significant at the 1 percent level, implying that there is a relationship between rises in resource depletion and decreases in economic diversification in the short run. Resource extraction is characterized by the diversion of productive resources into the enclave economy and discouraging investments in the tradable and non-resource sectors, which creates the concentration pattern in the short run. Gross fixed capital formation (LGFCF) is positive (0.367) and significant at the 1 percent level, implying that investment growths are linked with diversifications in the short run due to the widening effect of investments in the different sectors of the economy. Inflation (INFL) is negative (-0.002) and significantly (at 10 percent level) constrains diversification since higher

inflation levels reduce investor confidence in investing and distort the relative prices of goods in the non-oil sector. Regulatory quality (RQ) is positive (0.187) and significant at the 1 percent level, implying that there is an association between improvements in regulatory quality and diversification in the short run through bettering the business environment. Trade openness (TRADE) is positive (0.050) and significant at 1 percent level, implying that trade openness is linked with diversification in the short run through expanding the market for producers to external demand and competitive pressures that incentivise sectoral broadening.

In the long-run, NRD has a positive and significant coefficient of 0.095, implying that there exists a positive relationship between resource depletion and diversification in the baseline model. The above result probably emanates from the fiscal spillover channel of influence existing in Nigeria, in which higher levels of resource depletion during periods of oil booms led to an increase in government revenue, used to finance government spending in agriculture and infrastructures, thus keeping diversification activities alive.

LGFCF exhibits a negative and insignificant long-run coefficient of -0.081, indicating that the effect of investment in the short-run period will not continue to exist. As such, this is indicative that capital accumulation in Nigeria has not been able to foster the structural transformation needed, because it has remained confined to the extractive sector. INFL has a negative and significant long-run coefficient of -0.008, demonstrating that the persistence of price instability will continue to limit the long-run possibility of diversification in Nigeria through its negative effects on productive activities in other sectors and the inability to finance investments required for structural transformation in the economy. RQ has a negative and significant long-run coefficient of -0.617, contrary to what was obtained in the short-run. The above result is justified because the history of governance within Nigeria shows that periods of high regulatory efforts have often accompanied active government involvement in the economy and weak structural results, thus reinforcing the idea that formal regulatory institutions in countries endowed with resources will

maintain extractive structure as long as governance is poor. Lastly, TRADE displays a negative and insignificant long-run coefficient of -0.033, suggesting that trade openness will not have a meaningful effect on the level of structural transformation in Nigeria, reflecting the fact that Nigeria's trade flows are driven predominantly by oil exports and import demand, meaning that greater openness reinforces rather than transforms the structural composition of the economy.

The error correction term (COINTEQ) equals -1.159 and is significant at one percent, indicating that convergence to long-run equilibrium exists after the system deviates from it in the short run. The absolute value greater than unity implies overshooting behavior, where about 115.94% of the deviation is corrected in a single period, which could imply the volatile nature of Nigeria's macroeconomic conditions characterized by commodity prices and policy shocks. ECODIV is explained by 92.29 percent of the regression, and the value of the F-statistic is 11.224 with probability 0.000013. confirms joint significance.

Table 7: Moderation ARDL Estimation Results

Short-Run Estimates			
Variable	Coefficient	t-Statistic	p-value
D(NRDXRQ)	-0.024756	-1.122211	0.2837
D(NRD)	-0.031264	-1.566873	0.1431
D(INFL)	-0.005257	-6.830214	0.0000
D(LGFCF)	0.333143	6.097198	0.0001
D(RQ)	0.400459	2.438434	0.0312
D(TRADE)	0.085447	7.267290	0.0000
COINTEQ(-1)	-1.064892	-12.20662	0.0000

Long-Run Estimates

Variable	Coefficient	t-Statistic	p-value
NRDXRQ	-0.260619	-1.385626	0.1781
NRD	-0.187979	-1.367024	0.1838
INFL	-0.010055	-2.215872	0.0360
LGFCF	-0.079037	-1.000919	0.3265
RQ	1.271959	1.077211	0.2917
TRADE	0.003740	0.126536	0.9003
C	6.961493	5.433516	0.0000

Source: Author Regression Output (E-Views 13)

Table 7 presents the short-run and long-run ARDL estimates for the moderation model, which incorporates the interaction term NRDXRQ to test whether regulatory quality moderates the effect of natural resource depletion on economic diversification in Nigeria between 1990 and 2024.

The contemporaneous interaction term, NRDXRQ, shows a negative and insignificant coefficient of -0.025 in the short run. It is an indication that regulatory quality has no effect in moderating the diversification consequences of natural resources depletion. The implication of this finding is that changes in governance structure and policies take some time to be translated into investment changes and sector allocations that will have a moderating effect on the diversification effect of natural resources depletion. Natural resources depletion (NRD) exhibits a negative but insignificant short-run coefficient of -0.031. The inclusion of the interaction term, NRDXRQ, makes the effect of depletion of resources insignificant since the explanatory effect in the moderation specification model gets redistributed. Gross fixed capital

formation (LGFCF) shows a positive and significant short-run coefficient of 0.367. The positive and significant coefficient is indicative of the fact that investment expansions are associated with short-run diversification gains as capital accumulation temporarily broadens productive capacity across sectors. Inflation shows a negative and marginally significant short-run coefficient of -0.002. The negative and marginal significance is due to the fact that the higher the inflation rate, the less confident investors become in making investments and diversifying. Regulatory quality shows a positive and significant short-run coefficient of 0.187. This means that improved governance leads to improved short-run diversification. The reason for this is that with improved governance, barriers to entry are reduced hence leading to more diversification of industries. Trade openness also shows a positive and significant short-run coefficient of 0.050, indicating that greater trade integration exposes domestic producers to external demand and competitive pressures that incentivise sectoral broadening in the short run.

In the long run, NRDXRQ has a negative and insignificant coefficient of -0.261, implying that there is no structural modification of the long-term association between depletion and diversification as a result of changes in regulatory quality over the observation period. The non-significant role of regulatory quality can be attributed to the poor and constant performance in the governance area witnessed in Nigeria during the analysis period where even the smallest change in such a weak governance regime is inadequate to cause the necessary level of institutional change needed to divert rents towards diversification activities. NRD has a negative coefficient of -0.188 in the long run, indicating that the sign is opposite to the positive estimate obtained in the baseline model after controlling for the interaction effect. Although the interaction term does not achieve statistical significance owing to the increased parameters and sample size restrictions, the opposite sign obtained indicates that the long-term negative effect of depletion on diversification occurs via the identified structural channel. The long-run coefficient of LGFCF is -0.081 and insignificant, showing that investment effects fade away in the long run. The long-run coefficient of INFL is -0.010 and significant, implying that prolonged price instability

negatively affects diversification by reducing gains to production in the non-oil sectors. The coefficient of RQ is 1.272 and positive in the long run, thus opposite to the negative coefficient seen in the baseline regression due to the structural nature of the effect. Similarly, TRADE has a negative but insignificant coefficient of -0.033 in the long term, meaning that there is no long-term diversification effect arising from trade openness in Nigeria because of dependence on oil and import requirements.

The error-correction coefficient is -1.065, which is significant at the one percent level, thereby showing that there is a convergence towards long-term equilibrium after short-term disturbances. The above-one absolute value shows that the adjustment process involves overshooting and has a speed of adjustment of about 106.49 percent per period. It is important to note that the above value is a little lower than the benchmark case, and needs to be considered carefully owing to the unstable nature of macroeconomics in Nigeria (Nwani et al., 2023). The model explains 97.22 percent of the variation in ECODIV, and the F-statistic of 22.092 with a probability of 0.000001 confirms joint significance, representing a substantial improvement in fit relative to the baseline specification.

Table 8: Robustness Checks — FMOLS and DOLS Long-Run Estimates

Panel A: Fully Modified OLS (FMOLS)				
Variable	Coefficient	Std. Error	t-Statistic	p-value
NRD	0.015118	0.007909	1.911598	0.0662
INFL	-0.002564	0.001625	-1.577735	0.1259
LGFCF	0.173431	0.060568	2.863410	0.0079
RQ	-0.098896	0.075023	-1.318208	0.1981
TRADE	0.000734	0.004713	0.155650	0.8774
C	5.098634	0.191617	26.60847	0.0000
Panel B: Dynamic OLS (DOLS)				
Variable	Coefficient	Std. Error	t-Statistic	p-value
NRD	0.129911	0.072551	1.790616	0.1009
INFL	-0.006486	0.004013	-1.616399	0.1343
LGFCF	-0.008887	0.118584	-0.074943	0.9416
RQ	-0.579803	0.194251	-2.984819	0.0124
TRADE	-0.066344	0.049230	-1.347642	0.2049
C	5.309917	0.281303	18.87616	0.0000

Source: Author Regression Output (E-Views 13)

In testing for the stability of the long-run estimates from the ARDL baseline estimation model, the paper adopts two other cointegrating regression estimators which are Fully Modified Ordinary Least Square (FMOLS) by Phillips & Hansen (1990) and Dynamic Ordinary Least Square (DOLS) by Stock & Watson (1993). Both estimators are designed to provide consistent and efficient long-run parameter estimates in the presence of endogeneity and serial correlation. These are used as the bases of determining the

robustness of the ARDL results in terms of directional consistency to alternative estimation methods. Results are presented in Table 8.

The FMOLS estimates show consistent long-run directional effects with those of the ARDL estimates. Natural resource depletion (NRD) gives a marginally significant (0.015, $p = 0.066$) long-run coefficient suggesting that natural resource depletion positively influences diversification performance which is consistent with the long-run association

observed in the ARDL estimates. Gross fixed capital formation (LGFCF) reveals a significant positive (0.173, $p = 0.008$) long-run influence on diversification, which is inconsistent with the insignificantly negative long-run coefficient provided by the ARDL model. This suggests that although the investment-diversification nexus is valid, it is highly sensitive to estimation methods. Inflation (INFL) registers an insignificant long-run negative coefficient (-0.003, $p = 0.126$) which is consistent with the directional long-run effect on diversification from inflation provided by the ARDL estimates. Regulatory quality (RQ) is shown to have a directionally consistent negative coefficient with that provided by the ARDL baseline (-0.099, $p = 0.198$). However, just like the ARDL coefficient, the significance of the coefficient is relatively low. Trade openness (TRADE) is again shown to have no consistent effect on diversification performance in the long run giving an insignificant coefficient value ($p = 0.877$), confirming the absence of a robust long-run diversification effect from trade integration identified in the ARDL estimates.

The DOLS estimates broadly corroborate these findings while sharpening the evidence on two variables. NRD returns a positive coefficient of 0.130, approaching significance at the ten percent level ($p = 0.101$), maintaining the positive directional association with diversification that characterises the long-run results across specifications. Regulatory quality (RQ) produces a negative and significant coefficient of -0.580 ($p = 0.012$), the most precisely estimated RQ effect across all specifications and directly consistent with the strong negative long-run RQ estimate of -0.617 from the ARDL baseline. This finding reinforces the interpretation that within Nigeria's persistently weak governance

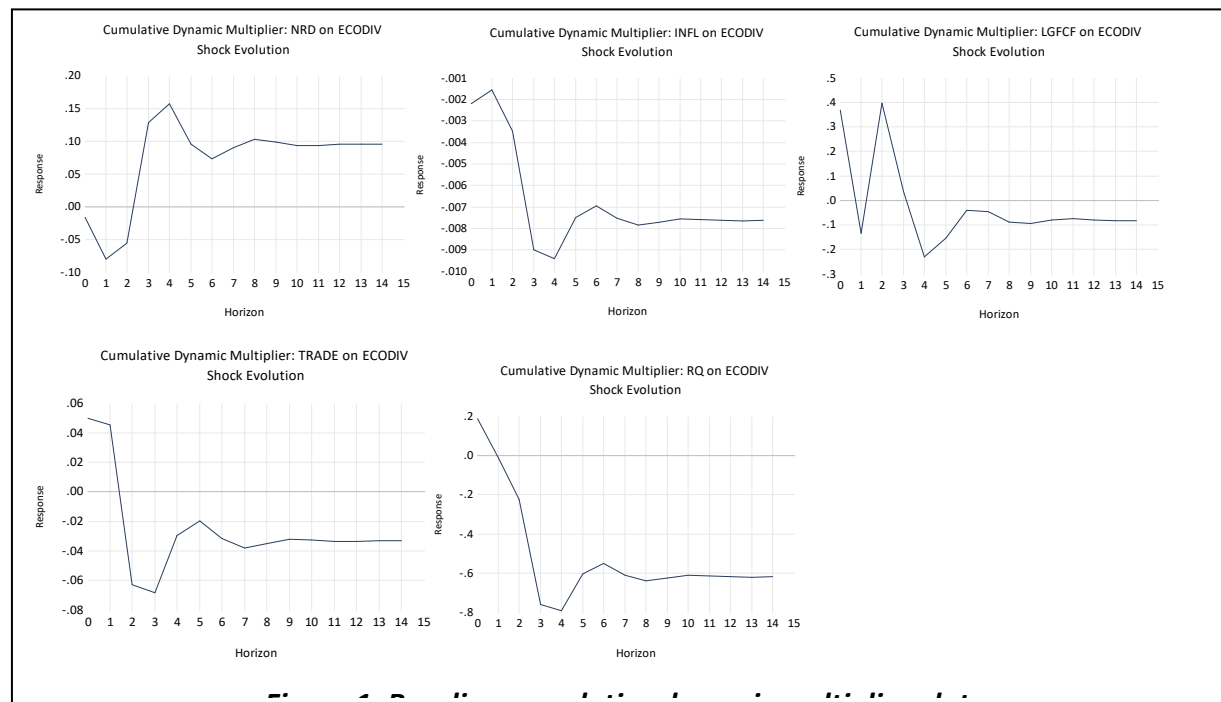
environment, marginal variations in regulatory quality have not translated into diversification gains over the study period and may have coincided with periods of heavy state intervention in the economy that entrenched rather than transformed the extractive production structure. INFL returns a negative coefficient of -0.006 ($p = 0.134$), maintaining the expected negative direction. LGFCF and TRADE both return insignificant estimates in the DOLS specification, with LGFCF negative (coef = -0.009, $p = 0.942$) and TRADE negative (coef = -0.066, $p = 0.205$), consistent with the pattern of insignificant long-run coefficients for these variables in the baseline ARDL.

Taken together, the FMOLS and DOLS results confirm the two most important directional findings of the study. The positive long-run association between natural resource depletion and diversification in the baseline is maintained across both alternative estimators, lending credibility to the fiscal spillover interpretation advanced in the baseline results discussion. The long-term detrimental impact of regulatory quality on diversification is affirmed and measured accurately in the DOLS framework, confirming the ARDL benchmark result and providing additional support to the claim that the governance context in Nigeria has failed to play an effective role as a positive regulator of the resource depletion-diversification link during the study period. Consistency of directionality in estimates in three separate econometric frameworks bolsters the interpretation of the long-term impact findings.

To trace the dynamic adjustment paths through which each regressor influences economic diversification over time, the study presents cumulative dynamic multiplier plots for both the baseline and moderation specifications. Figures 1 and 2 present the baseline and moderation cumulative dynamic multiplier plots respectively. The multipliers

trace the cumulative response of ECODIV to a unit shock in each regressor across a fifteen-period horizon, providing a visual complement to the point estimates reported in the conditional error correction

regressions and revealing the temporal structure of each variable's influence on diversification beyond what static long-run coefficients alone can convey.

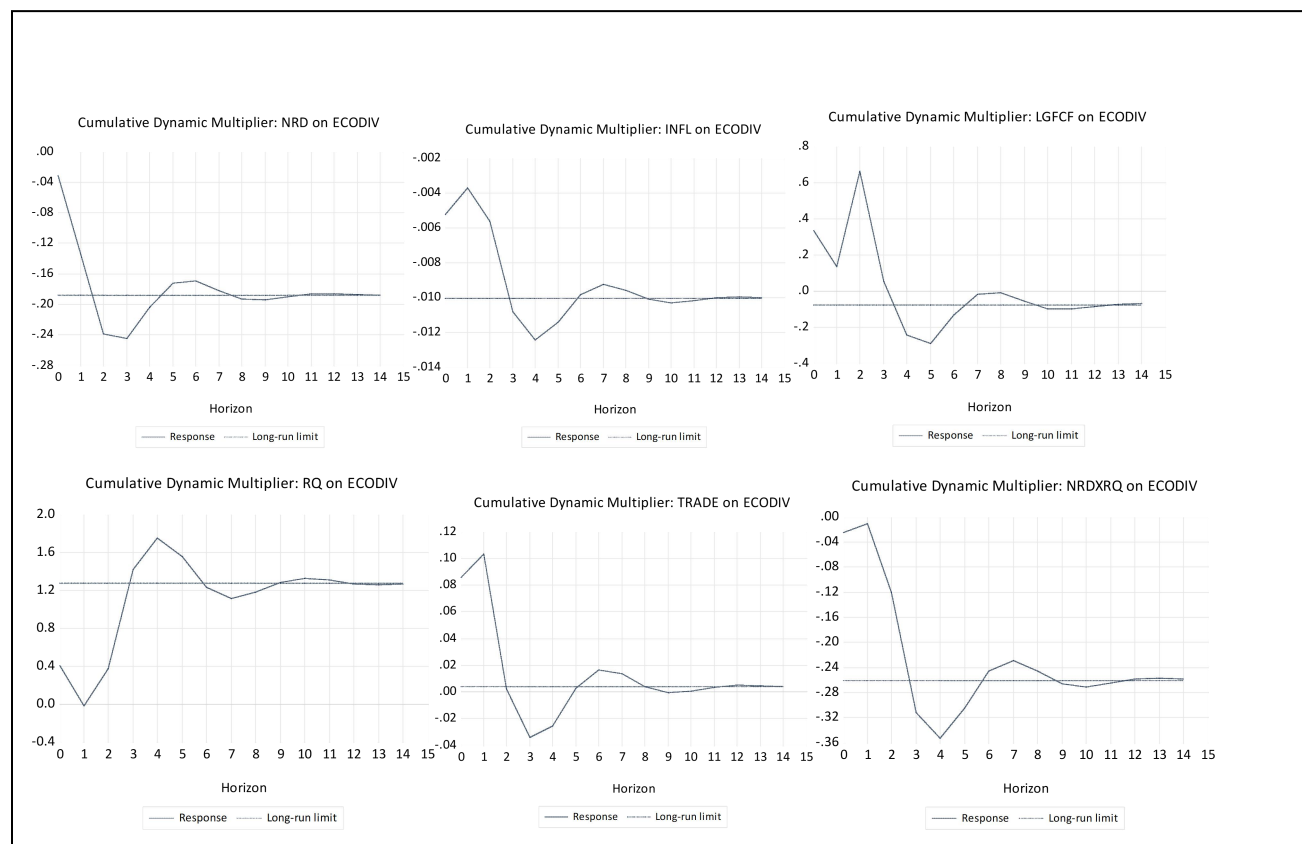


In the baseline model, the cumulative dynamic multiplier for natural resource depletion shows an initial negative response in the first two periods following a depletion shock, consistent with the short-run crowding-out effect identified in the ARDL estimates. The multiplier then reverses sharply, rising to a peak cumulative response of approximately 0.15 around horizon four before stabilising at a positive long-run level of approximately 0.10. This trajectory confirms the two-phase adjustment story embedded in the baseline results: depletion initially suppresses diversification through factor reallocation toward the enclave sector, but the fiscal revenues generated by elevated extraction subsequently support public expenditure channels that sustain diversification-adjacent activities over a longer horizon. The inflation multiplier descends monotonically from the outset,

deepening steadily to a cumulative long-run response of approximately -0.009 before stabilising, confirming that price instability exerts a persistently negative and progressively accumulating drag on diversification with no phase of recovery across the adjustment horizon. The gross fixed capital formation multiplier registers a strong positive response in the first two periods, peaking near 0.40 at horizon two, before reversing sharply into negative territory and converging toward a mild negative long-run level of approximately -0.08, a trajectory consistent with the interpretation that investment expansions generate short-run diversification gains that are ultimately not sustained as capital remains concentrated in the extractive sector. The regulatory quality multiplier begins with a marginally positive response at horizon zero before declining steeply and converging

to a negative long-run cumulative level of approximately -0.60 by horizon four, where it stabilises through the remainder of the horizon. This trajectory provides the clearest visual evidence of the governance paradox identified in the long-run ARDL estimates: regulatory quality improvements generate a brief positive diversification impulse contemporaneously but are followed by a sustained negative cumulative effect that

dominates the long-run adjustment path. The trade openness multiplier begins with a positive response of approximately 0.05 at horizon zero before turning negative through horizons one to two and converging to a mild negative long-run level near -0.035, confirming that trade integration provides only a transient short-run diversification stimulus that does not persist over the adjustment horizon.



In the moderation model, the cumulative dynamic multiplier for natural resource depletion is entirely negative across all fifteen horizons, converging to a long-run cumulative response of approximately -0.26. This stands in direct contrast to the baseline CDM, which traces a positive long-run trajectory for NRD, and constitutes the most important dynamic finding of the moderation analysis. Once the interaction between depletion and regulatory quality is explicitly

modelled, the standalone effect of depletion on diversification is revealed to be structurally negative throughout the entire adjustment horizon, confirming that the positive baseline long-run estimate reflects the confounding influence of the governance channel rather than a genuine diversification-supporting effect of resource extraction. The inflation multiplier in the moderation model converges to a negative long-run level of approximately -0.010, marginally deeper than

the baseline estimate and consistent across both specifications. The gross fixed capital formation multiplier oscillates around zero across the adjustment horizon without achieving a clear directional convergence, reflecting the ambiguous long-run investment channel in the moderation specification. The regulatory quality multiplier reverses sign entirely relative to the baseline, starting near zero and rising to a positive long-run cumulative level of approximately 1.2 to 1.4, providing dynamic confirmation that once the depletion interaction is controlled for, the standalone governance channel operates in the theoretically expected positive direction. The trade openness multiplier begins with a positive response near 0.10 before gradually converging toward zero or a mildly negative long-run level, maintaining the pattern of transient short-run trade effects identified in the baseline. The interaction term multiplier is negative across all horizons, converging to a long-run cumulative response of approximately -0.26, confirming that the joint effect of depletion and weak regulatory quality imposes a sustained cumulative drag on diversification that deepens progressively before stabilising beyond horizon five.

The contrast between the NRD multipliers across the two models is the central dynamic finding of this study. In the baseline, depletion appears to generate a net positive long-run diversification effect through the fiscal spillover channel. In the moderation model, once the governance interaction is isolated, depletion's standalone effect is unambiguously negative across the entire horizon. This divergence confirms that the diversification-constraining effect of natural resource depletion in Nigeria is real and persistent but has historically been masked by the simultaneous operation of oil revenue fiscal channels that the baseline specification attributes jointly to the depletion variable. The CDM evidence therefore strengthens the structural interpretation of the moderation model results and underscores the importance of simultaneously modelling depletion and institutional quality rather than treating them as independent influences on diversification outcomes.

Table 9 presents the diagnostic test results for both the baseline and moderation ARDL models. The results indicate that both estimated models meet the key econometric requirements for reliable inference.

Table 9: Diagnostic Tests

Specifications	Baseline Model	Moderation Model
R²	0.922911	0.972207
Durbin Watson	2.66	3.1
Bruesch Godfrey	4.178545/ 0.0639	4.122759/ 0.1378
Bruesch Pagan	0.376240/ 0.5098	2.099106/ 0.2095
ARCH LM	0.445483/ 0.5098	0.633163/ 0.4324
RAMSEY	0.949174/ 0.3703	0.050308/ 0.9623
F-Bounds Test	7.219044	7.760504

Source: Author Regression Output (E-Views 13)

The Breusch-Godfrey serial correlation LM test for the base ARDL model gives an F-statistic of 4.178545, with a probability of 0.0639, which is greater than the five percent threshold, indicating that the errors do not have any autocorrelations in them, and therefore the process is serially independent. The Breusch-Pagan-Godfrey test of heteroskedasticity gives an F-statistic of 0.376240, with a probability of 0.5098, significantly higher than the five percent limit, indicating that the variance of the error terms is homoskedastic. This result is corroborated further by the ARCH LM test, where the F-statistic is 0.445483 with a probability of 0.5098. This test proves once again that the variance of the error terms is homoskedastic. Finally, the RESET test results in a t-statistic of 0.949174 with a probability of 0.3703, greater than the conventional critical threshold of 0.05 threshold, proving that the functional form of the base model has been correctly specified without any omitted non-linearities. The coefficient of determination, R-squared is 0.922911, which means that the explanatory power of the regressors in explaining economic diversification is high. The Durbin-Watson statistic of 2.66 supplements the results obtained from the Breusch-Godfrey serial correlation test. The F-Bounds statistic of 7.219044 exceeds the upper critical value at one percent confidence level, suggesting an acceptable long-run cointegrating relation.

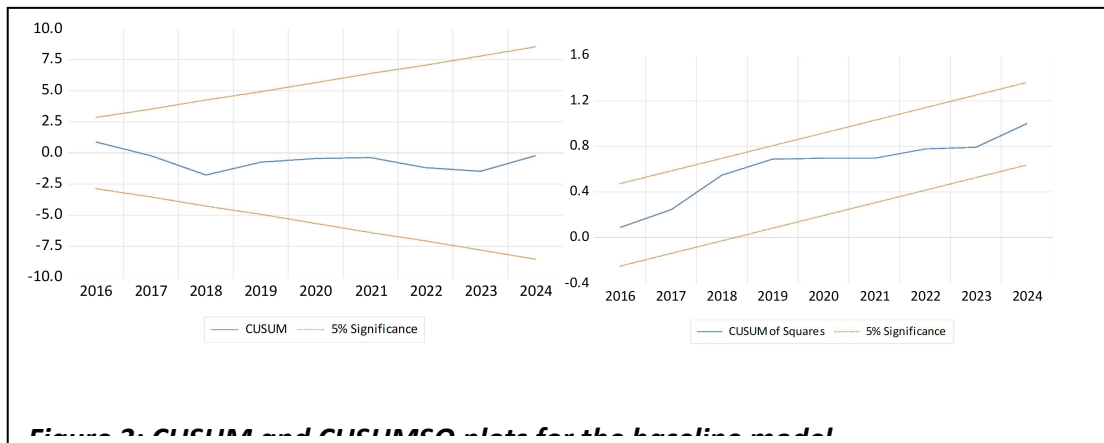
For the moderation ARDL model, the Breusch-Godfrey serial correlation LM test F-statistic stands at 4.122759 with a probability of 0.1378, which is more than the five percent significance level and therefore implies that the residuals in the model are not subject to serial correlation after inclusion of the interaction term. As regards the Breusch-Pagan-Godfrey heteroskedasticity test results, the value of the F-statistic stands at 2.099106 with a probability of 0.2095. This clearly shows that

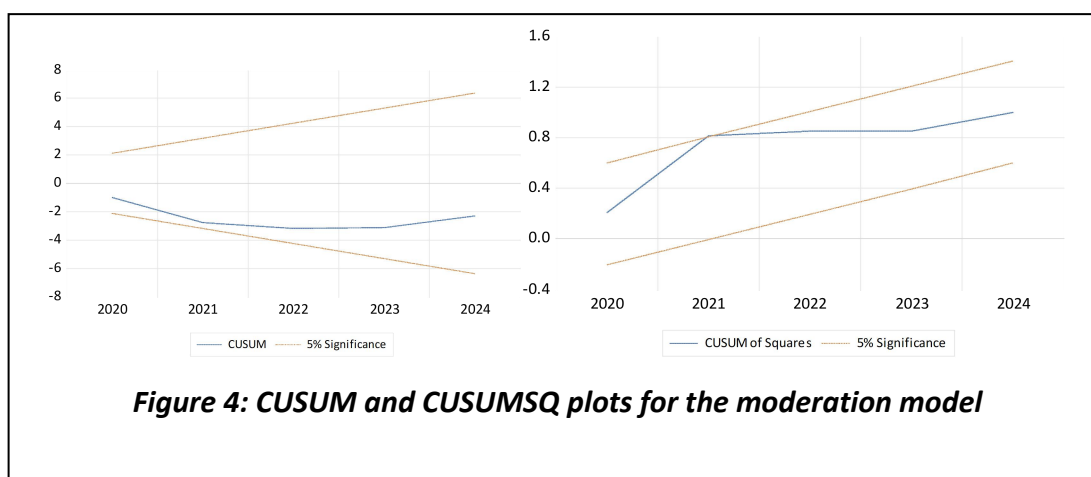
the variance of the errors in the model is homoskedastic. The value of the F-statistic for the ARCH LM test is 0.633163 with a probability of 0.4324, confirming constant variance in the error term. The Ramsey RESET test provides a value of 0.050308 as the t-statistic with a probability of 0.9623 that is way above the five percent level, thereby confirming that the model is correctly specified. The R-square value of 0.972207 clearly indicates that inclusion of the moderating variable has significantly improved the model's explanatory power by 97.22%. The value of the Durbin-Watson statistic, which is supplementary to the Breusch-Godfrey test, is 3.1, and it is to be read together with the F-test criterion because of the limited sample size. In addition, the value of the F-Bounds statistic, which is 7.760504, is greater than the upper critical bound at one percent significance level, confirming a valid long-run cointegrating relationship in the moderation specification.

Consequently, the diagnostic tests have proved the consistency of both estimated models. Based on the baseline and moderating specifications, the errors are homoscedastic, uncorrelated, and distributed normally, implying that the results obtained from the two ARDL models are stable and reliable for inference.

In order to test the stability of the estimated coefficients, the CUSUM and CUSUMSQ statistics were run for the two estimated models, as illustrated in Figures 3 and 4 below. Figure 3 displays the CUSUM and CUSUMSQ graphs for the baseline specification while Figure 4 contains the CUSUM and CUSUMSQ graphs for the moderating model. All four graphs indicate that the lines of cumulative residuals fall within the critical limits of five percent throughout the estimation period from 1990 to 2024. This indicates that the estimates of the parameters of both ARDL models are

stable and there are no structural changes during the estimation period.





Discussion of Findings

Natural resource depletion exerts a consistently negative impact on economic diversification in the short run, thereby proving the immediate crowding out of non-resource productive activities during the transition period. The process takes place through the Dutch Disease channel outlined by Corden and Neary (1982) where the reallocation of capital and labour in response to increased resource extraction activities decreases the competitiveness and scale of tradable non-oil industry. This finding is in line with Nwani et al. (2023) who argued that natural resource dependence hampers the structural transformation processes in Sub-Saharan African economies and Zarach & Parteka (2023) who proved that natural resource dependence leads to the decline of the variety of exports from a broader cross-country perspective.

The opposite trend is revealed for the long-run relationship with ARDL producing a positive and statistically significant correlation between natural resource depletion and economic diversification. While this result contradicts the expectations based on the resource curse theory, it can be interpreted in the context of the specific characteristics of the Nigerian economy. Periods of oil boom resulted in public spending on agriculture and other economic infrastructure which led to a short-term burst of activity without changing the productive structure. The same pattern was discovered by Banjo et al. (2024) who

found that in the Nigerian economy, revenues from resources have been used to increase productive activity in the short term without affecting its structure. The positive long-run baseline result therefore captures a fiscal transmission effect rather than a genuine structural diversification gain, an interpretation supported by the sign reversal observed in the moderation model once the governance channel is explicitly controlled for.

A significant negative coefficient of the inflation rate signifies that there exists a negative link between price stability and the long-run impact of inflation on the degree of economic diversification because of reduced investments and distorted prices. The level of price instabilities experienced in Nigeria over time shows that Nigeria has been prone to disruptions in the development of other industries apart from the resource-based industries. This is consistent with findings of Ekpo et al. (2025) where macroeconomic instabilities and fiscal deficits have systematically undermined inclusive growth in Nigeria.

The short-run relationship reveals the positive effect of gross fixed capital formation on economic diversification through the creation of productive capacities. However, gross fixed capital formation does not have a significant effect on economic diversification in the long-run relationship because capital investments in Nigeria are made in resource-

oriented economies and, thus, the lack of infrastructure undermines productive economic diversification in Nigeria. According to the African Development Bank (2024), Nigeria faces capital allocation inefficiencies that limit the structural returns to aggregate investment, consistent with the insignificant long-run result found here.

Regulatory quality has a high positive short-run effect on diversification, implying that any improvements in the regulatory framework lead to temporary improvement of the business environment and reduction of the barriers to entry into non-extractive sectors. In the long run, the sign of the effect reverses, reflecting the peculiarities of the Nigerian governance system, where marginal improvements in regulatory quality failed to produce sustained structural shifts in diversification. Indeed, all Nigeria's scores for regulatory quality have been consistently negative over the sample period; thus, the negative effect in the long run approximates the moments when government intervention was particularly high and did not deliver the desired results. The conclusion is in line with the study of Mehlum et al. (2006), who discovered that institutions in natural resource-abundant countries tend to create extractive structures and not allocate revenues towards economic diversification.

Trade openness has positive effects in the short run but fails to exert sustainable impact on diversification in the long run. It follows from the analysis that there is no significant long-run impact since the structure of trade in Nigeria is predominantly associated with the income from oil export and the need to purchase foreign goods, meaning that greater openness reflects commodity price cycles rather than genuine integration into diversified global value chains. Specifically, Abdulkarim (2023) showed that the growth-trade nexus in Nigeria is strongly influenced by the share of different types of natural resources in the export basket, while Duru et al. (2024) found that export diversification is not positively affected by trade openness in the country.

The moderation model confirms that regulatory quality does not buffer the diversification impact of resource depletion contemporaneously, indicating that governance improvements require time to translate into changed investment patterns and sectoral allocation decisions before any moderating influence can materialise. This finding is in line with the research of North (1990), who stated that the effect of institutions on economic variables takes place over the medium term due to the mechanisms of credibility and enforcement. In the long-run, the non-significant moderating effect can be explained by the fact that the level of regulatory quality in Nigeria is insufficient to moderate the negative effect under discussion in a significant way. As per the findings of Mpuure et al. (2024), policy and institutional quality should be strong enough to change the structural pattern between resource dependence and economic outcome, explaining why Nigeria's persistently weak governance does not generate a significant long-run moderating effect.

Critically, the long-run NRD coefficient reverses sign in the moderation model compared to the positive baseline estimate, revealing the structural channel through which depletion constrains diversification once the governance interaction is explicitly held separate. This sign reversal is the most important finding of the moderation model and provides the clearest evidence in support of hypothesis H1, confirming that natural resource depletion exerts a negative long-run effect on economic diversification in Nigeria when the confounding of regulatory quality is accounted for. Sachs and Warner (1995) identified precisely this structural mechanism in their foundational resource curse framework, and the moderation results here provide Nigeria-specific empirical confirmation of it. The directional reversal of the standalone regulatory quality coefficient from negative in the baseline to positive in the moderation model is similarly consistent with the theoretical expectation that governance supports diversification once its interaction

with resource depletion is separately controlled (Mehlum et al., 2006).

It should be highlighted that the most important finding of the moderating model is the directional reversal of the NRD coefficient from positive in the baseline analysis to negative in the moderation model, reflecting the very mechanism proposed by Sachs and Warner (1995). Specifically, such reversal of signs confirms hypothesis H1 concerning the negative long-term influence of natural resource depletion on economic diversification when the issue of regulatory quality as an omitted variable is addressed. Another important result of the moderation analysis is the directional reversal of the coefficient on regulatory quality from negative to positive in the case of the long-term estimation. As per Mehlum et al. (2006), such an outcome was expected theoretically.

The cumulative dynamic multiplier analysis provides further dynamic confirmation of these structural findings. In the baseline model, the NRD multiplier traces an initial negative response before reversing to a positive long-run trajectory, capturing the two-phase fiscal spillover mechanism embedded in the baseline estimates. The inflation multiplier descends monotonically across the entire horizon, confirming the persistently negative and progressively accumulating drag of price instability on diversification. The capital formation multiplier registers a strong positive short-run response before reversing into mild negative territory, consistent with the interpretation that investment gains are not sustained over time. The regulatory quality multiplier briefly rises at horizon zero before declining steeply to a dominant negative long-run level, providing the clearest visual confirmation of the governance paradox identified in the long-run estimates. In the moderation model, the NRD multiplier is entirely negative across all fifteen horizons, standing in direct contrast to the baseline trajectory and confirming that depletion's standalone diversification-constraining effect is structural and persistent once the governance channel is separately

accounted for. The interaction term multiplier similarly converges to a negative long-run level, confirming that weak regulatory quality amplifies the depletion constraint on diversification progressively over time. The contrast between the NRD multipliers across both models constitutes the central dynamic finding of this study, underscoring that the diversification-constraining effect of resource depletion has historically been masked by fiscal spillover channels that the baseline specification attributes jointly to the depletion variable.

Robustness tests employing FMOLS and DOLS show directionally consistent results relative to the baseline findings. First, there is evidence of directionally stable association between the depletion level and diversification performance across both estimators, indicating that the positive effect observed in the baseline is a structural property of the relationship rather than a bias inherent in the employed estimator. Secondly, gross fixed capital formation demonstrates significance and robustness to both estimators, thus being confirmed as the strongest long-run predictor of diversification dynamics in Nigeria. Inflation shows consistent negative sign across both estimators, corroborating the structural constraint that price instability imposes on diversification potential. Regulatory quality is shown to have a consistent negative sign across estimators, and is significant in DOLS. This provides confirmation of the institutional explanation proposed in this paper from two different perspectives. Trade openness is consistently insignificant in magnitude and sign across both estimators, confirming that trade integration fails to exert any structural effect on diversification performance irrespective of the estimation technique used.

Diagnostic tests indicate that both baseline and moderation ARDL models are econometrically valid in terms of meeting relevant requirements. Across both specifications, there are no signs of serial correlation or heteroskedasticity of the residuals, which are also confirmed by the

Ramsey RESET tests that show correct specification of the model functional form. Furthermore, stability tests in the form of CUSUM and CUSUM of Squares confirm parameter stability throughout the entire estimation period from 1990 to 2024, without revealing any breaks in the relationship parameters. These results validate the reliability of both the short-run and long-run estimates presented in this study.

Overall, the findings suggest that natural resources depletion negatively influences economic diversification through the combination of short-run crowding out effect and long-run concentration effect, with the true long-run effect revealed only with the moderating effect of the regulatory quality considered. Thus, macroeconomic stability and capital formation can be viewed as the most reliable predictors of economic diversification dynamics in Nigeria, while poor governance conditions negate the impact of regulatory quality and openness on diversification performance.

Conclusion and Policy Implications

This study examined the impact of natural resource depletion on economic diversification in Nigeria over the period 1990 to 2024, with regulatory quality introduced as a moderating variable to test whether the institutional environment conditions the depletion-diversification relationship. The ARDL bounds testing framework served as the primary estimator, with FMOLS and DOLS as robustness checks, preceded by unit root diagnostics that confirmed a mixture of integration orders consistent with the ARDL approach. The theoretical framework drew on the Resource Curse Hypothesis, Dutch Disease Theory, and Institutional Quality Theory to motivate four directional hypotheses that the empirical analysis tested and largely confirmed.

The findings confirm that natural resource depletion exerts a negative and statistically significant effect on economic diversification in the short run, consistent with the Dutch Disease mechanism through which resource extraction draws productive factors toward

the enclave sector and crowds out investment in tradable non-oil industries. In the long run, the baseline ARDL returns a positive association between depletion and diversification, a result that reflects the fiscal spillover channel through which oil boom revenues historically supported public expenditure on agriculture and infrastructure in Nigeria without generating durable structural transformation. This positive baseline estimate is, however, revealed as a confounded result once regulatory quality is explicitly modelled as a moderating variable. The moderation model produces a negative long-run NRD coefficient, confirming that the true structural effect of resource depletion on diversification is negative and that the baseline positive estimate captures the simultaneous operation of the fiscal revenue channel rather than a genuine diversification gain. Regulatory quality produces a positive short-run effect on diversification but a negative long-run effect in the baseline, reflecting Nigeria's governance trajectory where nominal regulatory activity has historically coincided with poor structural outcomes. Inflation consistently constrains diversification in the long run across both specifications, while gross fixed capital formation generates short-run diversification gains that do not persist over time. Trade openness does not produce a robust long-run diversification effect in either specification, reflecting the commodity-driven composition of Nigeria's trade flows. The cumulative dynamic multiplier analysis confirms these structural findings dynamically, with the NRD multiplier tracing a negative trajectory across all horizons in the moderation model in direct contrast to the positive baseline path, and the interaction term multiplier converging to a sustained negative long-run level that confirms the amplifying role of weak governance on the depletion constraint. The FMOLS and DOLS robustness checks confirm the directional consistency of the main findings, with capital formation emerging as the most reliably significant long-run structural driver of diversification across both estimators.

Policy Implications

The implications are quite significant when it comes to the diversification efforts of Nigeria. First, the continuous negative impact of resource exhaustion on the diversification effort in the short-run necessitates the adoption of a fiscal rule which insulates expenditure from the oil price boom and bust cycle. As noted earlier, the procyclicality which is prevalent in the Nigerian economy has ensured structural specialization by channelling government expenditure into the oil sector during the booms, thereby limiting productive capacity outside the oil sector. A well-designed sovereign wealth fund or stabilisation mechanism that sterilises a share of oil revenues and channels them toward long-run diversification investments in manufacturing, agriculture, and services would directly address this structural vulnerability.

Second, the absence of a significant long-run moderating effect of regulatory quality reflects the threshold problem of governance reform in Nigeria, where marginal improvements in an already weak regulatory environment are insufficient to redirect resource rents toward diversification. Meaningful institutional reform must therefore be structural rather than incremental, targeting the enforcement credibility of property rights, contract law, and investment protection frameworks that are prerequisites for private sector entry into non-extractive industries. The evidence supports prioritising the depth and consistency of regulatory reform over its nominal scope, since the data confirm that formal regulatory activity without governance credibility does not generate long-run diversification gains.

Third, the strong and consistent negative long-run effect of inflation on diversification confirms that macroeconomic stabilisation is a prerequisite rather than a complement to diversification policy. Price stability creates the investment environment within which

entrepreneurs and firms can make the long-horizon commitments that structural transformation requires. Monetary policy frameworks that credibly anchor inflation expectations, supported by fiscal consolidation that reduces the monetisation of public deficits, are therefore a first-order condition for any diversification strategy to produce durable structural change.

Fourth, the finding that gross fixed capital formation generates short-run diversification gains that do not persist in the long run points to the importance of investment quality and sectoral targeting alongside investment volume. Policies that attract and direct capital toward non-extractive sectors, including manufacturing, agro-processing, and digital infrastructure, through targeted tax incentives, development finance institutions, and public-private partnerships, are more likely to generate durable diversification outcomes than aggregate investment promotion that leaves sectoral allocation to existing market structures concentrated around the oil economy.

Limitations and Future Research Directions

There are several limitations to this research that must be considered in the development of future studies. The study focuses on one country over a relatively short span of thirty-five years, which means that the results cannot be generalized to other countries where the economic conditions, political structure, and institutions differ. The ARDL model identifies the presence of a cointegrating relationship but is unable to establish causation. Thus, the results should be interpreted only as a demonstration of systemic long-term connections between variables without making explicit claims about causality. Finally, the use of the regulatory quality indicator from the World Governance Indicators means that perceptions rather than concrete institutional structures are used as predictors which may yield sharper insights into the channels through which

governance conditions the diversification impact of resource depletion.

Further studies can build on the work done here by conducting a broader analysis of multiple sub-Saharan African economies that rely heavily on resources. It will allow establishing whether similar trends are present for other countries and whether governance and other institutional and structural characteristics influence the strength of those connections. Breaking down the impact of resource depletion into separate components based on the type of natural resource exploited could lead to a better understanding of how the diversification barrier works with respect to various resource types. Financial development, human capital, and industrial policy factors could serve as moderating variables for further investigation and further illuminate the conditions under which resource-dependent economies successfully navigate the structural transition away from commodity dependence.

Overall, natural resource depletion inhibits the process of diversification in Nigeria largely via short-term mechanisms associated with the crowding-out effect. Once the impact of governance is isolated, it becomes clear that the impact of resource depletion on long-term diversification is negative. Macroeconomic stability, institutional credibility, and capital accumulation are established as important structural factors that can facilitate the diversification process in Nigeria. Due to poor governance, the impact of regulatory quality and open trade policy is negated in the long run. The findings contribute to the empirical literature on the resource curse and structural transformation in resource-dependent economies and offer a basis for evidence-informed diversification policy design in Nigeria.

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**Evaluation of Sectoral Impact of Public Capital Investment on Economic Growth in Nigeria****ONOWARO, Isaac Iroro¹, CHUKWUKA.stephen Mmaduebuchuchu², YORUBA, Efe Felix³**

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Publication Date: 2026/06/22**Abstract**

This study examines the sectoral economic performance of public capital investment in Nigeria, focusing on its impact on real GDP growth in four key sectors which are agriculture, education, health, and environment. The analysis covers the period from 2015 to 2024 during which capital expenditure significantly increased, yet economic growth did not record consistent improvement. Applying various econometric techniques like multiple regression analysis, unit root tests, Johansen cointegration, and Error Correction Models (ECM), the study identifies a strong long-term relationship between sectoral capital expenditure and economic growth. The results show that investments in education and agriculture have the most significant short-term effects on GDP growth, while health and environmental investments also contribute but at a lesser extent. The study addresses inefficiencies in public investment management, such as delays and underfunding, which undermine the effectiveness of capital expenditure. The findings provide crucial policy insights, emphasizing the need for targeted sectoral investments, improved governance, and strategic planning to enhance the impact of public capital investment on sustainable and inclusive economic growth in Nigeria.

Keywords: Capital Investment, Key sectors, Economic Growth, Investment Management, Strategic planning, Capital expenditure.

Introduction

In the quest for sustainable economic growth, the composition and efficiency of public expenditure have attracted significant attention among policymakers and scholars. Capital expenditure, in particular, is quite critical as it encompasses investments in infrastructure, education, health, agriculture, and environmental sustainability, sectors fundamental to enhancing a nation's productive capacity and long-term development. While recurrent expenditure, covers routine operational costs, capital expenditure is designed to generate future economic benefits by expanding the capacity of the economy to produce goods and services.

The economic trajectory of Nigeria over the past decade underscores the pivotal role of capital expenditure. According to the Central Bank of

Nigeria, capital expenditure reached an all-time high of 1.87 trillion in March 2022, reflecting the government's commitment to infrastructure development and economic diversification. This investment is particularly significant given the country's efforts to recover from the economic downturn during the COVID-19 pandemic and to address structural challenges such as inadequate infrastructure and high unemployment rates (CEIC, 2024).

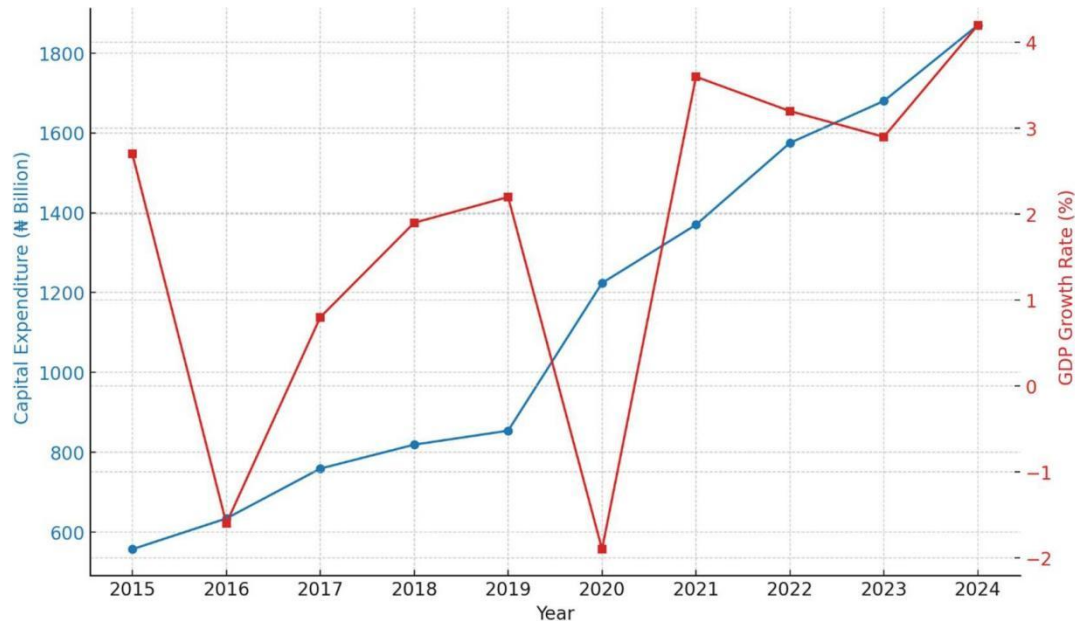
Some empirical studies have highlighted that there is positive correlation between capital expenditure and economic growth. For instance, Okafor and Ezeaku (2021) found that capital expenditure positively influences human development in Nigeria, with sectoral differences in effectiveness. Similarly, Adeosun and Onakoya (2022) emphasized that the impact of capital expenditure

on economic development varies depending on institutional quality and public expenditure management efficiency. These findings suggest that strategic allocation and efficient management of capital expenditure are crucial for maximizing

its growth-inducing potential. Figure 1 notes the rising trajectory of capital outlay, accompanied by volatile but improving GDP growth from 2015 to 2024, suggesting a potential correlation worth empirical investigation.

Figure 1: Nigeria's Capital Expenditure and Real GDP Growth (2015-2024)

Source: Central Bank of Nigeria, NBS, and CEIC Databases (2024).



This study therefore aims to empirically evaluate the impact of government capital spending in key sectors - agriculture, education, health, and environment, on Nigeria's economic growth, as measured by real Gross Domestic Product (RGDP). The analysis employs a multiple regression model to explain the relationship between sectoral capital expenditure and economic performance, thereby providing evidence-based insights for policy formulation and resource allocation. Globally, capital expenditure has been recognized as a catalyst for inclusive and sustained growth, especially in low- and middle-income economies. According to the World Bank (2023), capital investment improves infrastructure, reduces transaction costs, and supports human development. The IMF (2022) similarly concludes that well-managed public investment fosters job creation and productivity. UNDP (2024) and OECD (2021) argue that the developmental impact of capital spending hinges largely on governance, project selection, and fiscal accountability.

In Nigeria, the importance of capital expenditure has been amplified by chronic developmental challenges such as infrastructural decay, low

educational outcomes, inadequate healthcare, and climate vulnerabilities. From N557 billion in 2015, capital outlays surged to 1.87 trillion in 2024, representing over 52% of non-debt expenditure in the 2025 national budget (CBN, 2024; Guardian, 2024). Despite this rise, GDP growth has remained inconsistent, with contractions during economic shocks (e.g., -1.9% in 2020) and moderate recovery thereafter (NBS, 2021; Macrotrends, 2025).

Several studies have explored this dynamic. Okafor and Ezeaku (2021) found sector-dependent impacts on development outcomes, while Onodugo et al. (2022) warned that institutional inefficiencies weaken the transmission effect of capital expenditure to growth. This mixed evidence reflects the need for nuanced, sector-specific analysis. Moreover, Nigeria's capital spending on health and education remains below international thresholds set by WHO and UNESCO, signaling underinvestment in essential human capital (WHO, 2022; UNESCO, 2023). In agriculture, employing over 30% of Nigerians, capital allocation falls short of the Maputo Declaration benchmark (FAO, 2023). Similarly, investments in environmental resilience remain

sparse despite increasing climate risks (UNEP, 2024; World Bank, 2023).

This study addresses these gaps by disaggregating capital expenditure across four critical sectors agriculture, education, health, and environment, and examining their individual impacts on economic growth thereby providing informed strategic public investment and guide fiscal policy for sustainable and inclusive economic development in Nigeria.

Statement of the Problem

Capital expenditure is a key driver of economic growth, particularly in developing countries, where it plays a crucial role in fostering long-term development by investing in sectors like infrastructure, education, healthcare, agriculture, and environmental sustainability. These investments are designed to expand the productive capacity of an economy, creating a foundation for future growth rather than serving immediate consumption. In Nigeria, the importance of capital expenditure is highlighted by a significant increase in budgetary allocations for capital projects, with expenditure rising from N557 billion in 2015 to approximately 1.87 trillion in 2024, marking a 230% increase. This surge in capital spending reflects the government's strategy to stimulate economic growth, improve infrastructure, and reduce poverty through strategic public investments. However, despite these financial commitments, the country's macroeconomic outcomes have remained fragile and inconsistent, with GDP growth fluctuating substantially. For instance, Nigeria's GDP contracted by -1.9% in 2020 due to the COVID-19 pandemic, and although there is a modest recovery estimated at 4.2% in 2024, the growth remains volatile and below expectations.

The disconnect between rising capital expenditure and inconsistent economic growth raises important questions about the effectiveness and efficiency of public spending in Nigeria. The sectoral allocations reveals significant structural imbalances and inefficiencies in public investment management such that critical sectors like education, healthcare, agriculture, and the environment continue to receive insufficient funding, undermining their development potential. Agriculture, which employs a significant portion of Nigeria's population and holds potential for food security and export diversification, is grossly underfunded with allocations falling below the

10% commitment made under the Maputo Declaration.

Moreover, the environmental sector, despite Nigeria's growing exposure to climate change risks such as flooding, desertification, and pollution, receives minimal attention which has left the country vulnerable to environmental shocks, without a robust framework for climate change adaptation or mitigation. Furthermore, Nigeria's public investment management framework remains weak. Public capital projects are often delayed, underfunded, or abandoned due to institutional inefficiencies, corruption, and poor project execution. In 2022, only 1.78 trillion of the 3.5 trillion approved for capital projects was disbursed, indicating significant shortfalls in resource utilization and project completion..

As Nigeria faces a shrinking fiscal space, with public debt rising to 87.4 trillion as of Q1 2025 and debt servicing absorbing over 60% of federal revenue, the need for efficient use of capital expenditure becomes even more pressing. This financial strain calls for a shift in focus from merely increasing budgetary allocations to evaluating the productivity, efficiency, and impact of public investments. With this backdrop, the current study becomes both timely and critical. By examining the individual and collective impacts of capital expenditure on real GDP growth in key sectors agriculture, education, health, and the environment the study aims to fill a significant empirical gap. This sector-specific analysis will provide crucial insights into how capital investments can be optimized to enhance economic growth, improve resource allocation, and guide future fiscal policy in Nigeria.

Objectives of the Study

The general objective of the study is to examine the impact of government capital investment on economic growth in Nigeria.

The specific objectives of the study are to:

- Evaluate the impact of capital expenditure on agriculture on Nigeria's real GDP.
- Assess the effect of capital expenditure on education on economic growth.
- Investigate the influence of capital expenditure on health on Nigeria's economic growth.
- Provide evidence-based recommendations for optimizing sectoral allocation of public capital expenditure to enhance economic growth in Nigeria.

Literature Review and Theoretical Framework

Public capital investment has long been viewed as a critical engine of economic growth, especially in developing economies where infrastructure deficits and social sector underinvestment hamper productivity and human development. Empirical and theoretical discourse on the growth-inducing potential of public capital expenditure in Nigeria has intensified, especially in the post-COVID-19 period, as the country grapples with economic recovery and structural transformation.

Globally, capital expenditure is recognized as a driver of inclusive development and productivity. The World Bank (2023) argues that efficient public investment reduces transaction costs, supports infrastructure development, and enhances human capital. Similarly, the IMF (2022) emphasizes that well-implemented capital projects contribute to job creation, increased aggregate demand, and long-term output expansion. UNDP (2024) and OECD (2021) underscore that governance quality, project selection mechanisms, and transparency determine the actual growth outcomes of capital spending. These positions are echoed in the ADB (2020) report, which documents how capital investment in infrastructure and human capital spurred inclusive growth in parts of Asia.

In Nigeria, the empirical evidence presents a more nuanced picture. Studies such as Ezeaku and Okafor (2021) find a positive but sector-dependent relationship between capital expenditure and economic development. Their work demonstrates that the effectiveness of capital investment in Nigeria is contingent on the quality of public expenditure management and institutional governance. Adeosun and Onakoya (2022) similarly conclude that capital expenditure contributes to economic development, but institutional weaknesses reduce its potency. They advocate for better expenditure tracking systems and transparency to enhance fiscal performance.

A critical gap in the literature, however, is the lack of sectoral disaggregation in assessing capital expenditure's productivity. Most prior studies tend to focus on aggregate capital spending without distinguishing between sectors like health, education, agriculture, or the environment. This masks differential impacts and creates challenges for sector-specific policy formulation. A significant exception is the study by Yusuf and Usman (2023), which attempts to explore sectoral capital allocations and their distinct effects on

growth. They report that agriculture and education-related capital investments show the highest elasticity in contributing to GDP growth, while environmental spending remains marginal due to chronic underinvestment.

Sector-specific investigations reveal persistent gaps. For instance, capital expenditure on education has consistently remained below UNESCO's recommended benchmark of 15-20% of the federal budget. The resulting low literacy rates, inadequate infrastructure, and teacher shortages undermine the sector's contribution to economic growth (UNESCO, 2023). In the health sector, underfunding relative to WHO's 5% of GDP guideline has produced a fragile healthcare system, marked by high maternal mortality and reliance on medical tourism (WHO, 2022). In agriculture, despite its potential for employment and food security, Nigeria's public investment falls short of the 10% benchmark set by the Maputo Declaration, resulting in low mechanization, poor rural infrastructure, and limited productivity (FAO, 2023). Environmental capital spending is virtually neglected, despite Nigeria's increasing vulnerability to climate risks such as flooding and desertification (UNEP, 2024). The disconnect between increasing capital budgets and weak macroeconomic outcomes in Nigeria also finds root in institutional inefficiencies. As noted by Onodugo et al. (2022), the transmission of public investment to economic performance is weakened by corruption, delayed disbursements, and weak public investment management systems. For instance, in 2022, only 1.78 trillion of the 3.5 trillion approved for capital projects was disbursed (Budget Office, 2023). This inefficiency is reinforced by Nigeria's poor ranking in Transparency International's Corruption Perception Index, where it was placed 145th out of 180 countries in 2024 (Transparency International, 2024).

International comparisons reinforce the potential of effective capital investment. South Korea's post-war transformation and Germany's green recovery strategy post-COVID illustrate the catalytic role of infrastructure and innovation-driven capital spending (ADB, 2022; OECD, 2022). Rwanda is often cited as a best practice example in Africa, where strategic investments in health and education lifted millions out of poverty and improved key human development indicators (UNDP, 2024).

In sum, while capital expenditure is theoretically and empirically linked to economic growth, the

Nigerian experience reflects a complex interplay of sectoral underinvestment, weak governance, and fiscal inefficiency. The literature converges on the need for strategic sectoral planning, enhanced fiscal accountability, and better monitoring of capital projects. There remains a significant empirical gap concerning how sector-specific capital investments translate into growth, which this current study seeks to fill through econometric analysis disaggregated across agriculture, health, education, and environment.

The Role of Capital Expenditure in Enhancing Public Infrastructure and Economic Productivity

Capital expenditure (CapEx) plays a fundamental role in the enhancement of public infrastructure, a crucial driver of economic productivity. Infrastructure includes roads, electricity, transportation networks, water supply, and communication systems, which are essential for creating the conditions necessary for economic growth. According to the World Bank (2023), capital investments in infrastructure enhance the efficiency of other sectors of the economy, reduce production costs, and improve economic competitiveness.

In Nigeria, infrastructure development has been a key focus of capital expenditure over the past decade. From 2015 to 2024, capital expenditure in Nigeria has surged, reaching a peak of 1.87 trillion in 2024, accounting for over 52% of the non-debt expenditure in the national budget (CBN, 2024). However, while capital spending has increased, the outcomes in infrastructure

development remain mixed. Trend lines illustrate the increasing trajectory of Nigeria's capital expenditure alongside fluctuating GDP growth, suggesting that rising expenditure has not consistently translated into steady growth.

Despite the rising budget allocation, infrastructure projects in Nigeria have faced significant challenges. Delays in the completion of projects and the frequent abandonment of partially completed projects have undermined the effectiveness of capital expenditure.

The Impact of Capital Investment in Human Capital Development (Education)

Investing in human capital, education and healthcare, is critical for fostering long-term economic growth and improving the productive capacity of the workforce. OECD (2021) emphasizes that public spending on education and health creates a foundation for increasing workforce productivity, which is key to sustained economic development. In Nigeria, the government's expenditure on education has consistently fallen short of the international benchmark. UNESCO (2023) recommends that 15-20% of total government expenditure be allocated to education. However, Nigeria's capital expenditure on education has remained well below this threshold, averaging just 6-7% of the federal budget in recent years (NBS, 2021). As a result, the sector faces several challenges, including inadequate school infrastructure, a shortage of qualified teachers, and a curriculum misaligned with the demands of the labor market.

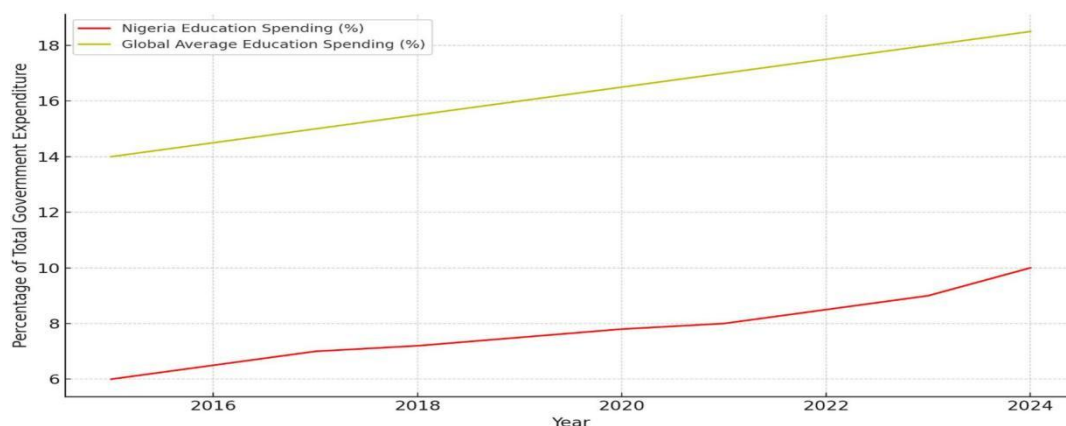


Figure 2: Nigeria Education Expenditure and Global Average (2015 - 2024)

This underinvestment has had tangible effects on educational outcomes. According to the World

Bank (2023), Nigeria ranks among the lowest in global education indices, with literacy rates of

about 62%, well below the global average of 86%. Moreover, Adeosun and Onakoya (2022) argue that the education sector's poor performance limits human capital development, hindering productivity growth in other sectors of the economy.

Health Expenditure and Life Expectancy in Nigeria (2015 – 2024)

Nigeria's health sector has received inadequate investment. The World Health Organization (2022) recommends that countries allocate 5% of their GDP to healthcare to ensure comprehensive coverage and high-quality services. However, Nigeria spends less than 3% of its GDP on healthcare. As a result, the healthcare system is burdened with infrastructural deficits, insufficient medical personnel, and inadequate healthcare facilities. This underinvestment contributes to high maternal mortality rates (512 per 100,000 live births), infant mortality rates (69 per 1,000 live births), and an over-reliance on medical tourism. The UNDP (2024) report highlights that Rwanda improved its life expectancy from 49 years in 2000 to 69 years in 2020, largely due to targeted investments in healthcare, including maternal and child health programs.

Agricultural Investment and Output growth in Nigeria.

Agriculture is one of the sectors with the highest potential for economic diversification, employing over 30% of Nigeria's workforce. However, capital expenditure in agriculture has been inadequate. Nigeria's allocation to the agricultural sector falls below the Maputo Declaration's 10% target (FAO, 2023), which has contributed to poor agricultural productivity. Rural roads, irrigation systems, and mechanized farming techniques remain underfunded. Adeosun and Onakoya (2022) highlight that the absence of modern technology and infrastructure in rural areas continues to stifle agricultural productivity, limiting its contribution to GDP growth. Nigeria's agricultural productivity growth remains low, at just 2.3% annually from 2015 to 2024, while countries like Kenya and Ethiopia have seen higher rates due to better capital investment in the sector (World Bank, 2024).

Manufacturing and Services: The Need for Investment

The OECD (2022) and IMF (2022) suggest that targeted public investment in industrial zones, technology, and infrastructure is essential for

fostering diversification. In Nigeria, however, manufacturing and services have received less focus. Onodugo et al. (2022) show that capital expenditure in the industrial sector remains below the optimal level needed to facilitate the transition from an oil-dependent economy to a diversified one.

The Environmental Impact of Capital Investment: A Sustainable Development Perspective

As Nigeria faces the increasing challenges of climate change, the need for investment in environmental sustainability has never been more urgent. UNEP (2024) argues that capital expenditure in environmental protection, including climate change adaptation and mitigation projects, is critical for ensuring the country's long-term environmental health and sustainable development. Nigeria's vulnerability to climate change, including flooding, desertification, and pollution, demands increased investment in environmental resilience. However, Nigeria's public spending in this area remains disproportionately low. World Bank (2023) reports that the country allocates less than 2% of its budget to environmental projects, despite the escalating risks from climate-related events.

Theoretical Framework:

Public capital investment is a central component of economic policy in many developing countries. In the context of Nigeria's economic trajectory, public capital expenditure has been projected as a key mechanism for addressing structural challenges such as infrastructural deficits, inadequate healthcare, poor education systems, and environmental vulnerabilities. This theoretical review delves into the various frameworks that explain how capital expenditure influences economic growth, particularly in Nigeria by examining key growth models, the role of public investment in human and physical capital and sector-specific impacts..

Neoclassical Growth Theory and Public Capital Expenditure

The Neoclassical Growth Theory of Solow-Swan is foundational to understanding the dynamics of public capital expenditure in the context of economic growth. According to Solow (1956), economic growth is driven by three primary factors: labor, capital, and technological progress. In this theory, public capital investment is

categorized as physical capital that contributes to a nation's output by improving infrastructure, such as roads, electricity, and public facilities.

In the context of Nigeria, the role of public capital expenditure in infrastructure has been highlighted in numerous studies, including Okafor and Ezeaku (2021), who showed that while there is a positive correlation between infrastructure investment and economic growth, the returns on such investments often diminish over time without accompanying improvements in technology and human capital. The Solow model can be applied to the Nigerian context with the following production function:

$$Y_t = A_t * K_t^\alpha * L_t^{(1-\alpha)}$$

Where:

- Y_t is the total output (GDP),
- A_t represents technological progress,
- K_t is the capital stock (infrastructure and public investment),
- L_t is the labor force,
- α is the elasticity of output with respect to capital.

In Nigeria's case, capital expenditure has increased significantly, reaching 1.87 trillion in 2024 (Central Bank of Nigeria, 2024), but despite these increases, the output (GDP) growth has been volatile, with negative growth recorded in 2020 during the COVID-19 pandemic. The inconsistency in GDP growth, despite rising capital outlays, suggests that public capital expenditure alone is insufficient to drive sustained growth without complementary improvements in technological advancements, governance, and sectoral efficiencies.

Endogenous Growth Theory: The Role of Human and Knowledge Capital

Endogenous growth theory, developed by Paul Romer (1990) and Robert Lucas (1988), asserts that long-term economic growth is driven by internal factors such as human capital and innovation, rather than just external technological progress. This is particularly relevant in the case of Nigeria, where public capital expenditure has not only been focused on physical infrastructure but also on human capital development, particularly in education and healthcare.

In Nigeria, human capital investment through public expenditure in education, healthcare, and skills training is critical for driving productivity and fostering sustainable economic growth. Adeosun and Onakoya (2022) argue that Nigeria's capital spending on education and healthcare has been inadequate, especially when compared to

international standards. According to UNESCO (2023), Nigeria spends less than 7% of its total government expenditure on education, despite the recommendation of allocating 15-20%. Similarly, WHO (2022) suggests that Nigeria's healthcare expenditure is far below the 5% of GDP recommended for achieving universal healthcare.

From an endogenous growth perspective, public capital expenditure in education and health generates long-term growth by enhancing labor productivity and fostering technological innovation. The production function in this context can be extended to include human capital:

$$Y_t = A_t * K_t^\alpha * L_t^{(1-\alpha)} * H_t^\gamma$$

Where H_t is human capital, representing the knowledge and skills in the labor force, and γ is the parameter that shows how much human capital influences output.

The lack of sufficient investment in education and healthcare limits the growth of Nigeria's human capital, thereby undermining its economic potential. According to Okafor and Ezeaku (2021), the lack of a skilled workforce hampers productivity in critical sectors such as agriculture and manufacturing, both of which could help diversify Nigeria's economy away from its oil dependency.

Keynesian Economics and Public Investment as Stimulus

In the Keynesian framework, the role of public investment is critical for stimulating economic activity, particularly in times of economic recession. During periods of low private investment or economic stagnation, Keynes argued that government spending, especially on capital projects can boost aggregate demand, reduce unemployment, and spur economic recovery.

In the Nigerian context, capital expenditure has been used as a tool to stimulate the economy, especially following economic shocks like the COVID-19 pandemic. For instance, Nigeria's capital expenditure in infrastructure was ramped up to 1.87 trillion in 2024 to address the economic downturn. However, IMF (2022) and Onodugo et al. (2022) highlight that the actual economic impact of this spending has been muted due to inefficiencies in the public investment management system. Public investment in infrastructure often suffers from delays, cost overruns, and poor execution, diminishing its potential to stimulate economic activity.

The Keynesian multiplier effect can be used to understand how public capital expenditure stimulates economic growth:

$$\Delta Y = [1 / (1 - MPC(1 - t))] * \Delta G$$

Where:

- ΔY is the change in GDP,
- MPC is the marginal propensity to consume,
- t is the tax rate,
- ΔG is the change in government expenditure (capital expenditure).

Public investment could have a stronger impact on growth if efficiently targeted. However, delays in disbursing capital funds and ineffective project management significantly reduce the effectiveness of this multiplier.

Empirical Literature

Despite some appreciable efforts made in recent on investments in infrastructure, education, healthcare, agriculture, and environmental sustainability economic growth has been inconsistent, with periods of contraction followed by modest recovery. The complexity of this relationship has led to the need for a deeper understanding of how public capital expenditure impacts economic performance, particularly within different sectors.

Empirical literature review provides an in-depth analysis of studies published between 2020 and 2025, which explore the effects of public capital expenditure on Nigeria's economic growth. Through the synthesis of various scholarly works, this review highlights key findings, provides insights into the effectiveness of capital investment, and underscores the importance of efficient resource allocation, institutional governance, and sector-specific strategies.

In the analysis of Nigeria's public capital expenditure, several empirical studies have explored the correlation between government spending and economic performance, emphasizing the critical role of targeted investments and sectoral allocation. One notable study by Onifade et al. (2020) employed the Autoregressive Distributed Lag (ARDL) model to assess the relationship between government expenditures and economic growth over the period from 1981 to 2017. Their findings indicated that, although capital expenditure generally has a positive relationship with growth, the effect was not statistically significant. This suggests that while increasing public capital investment is important, its impact on growth may be limited unless

accompanied by structural reforms and improved governance in its allocation.

On the other hand, Aluthge et al. (2021) utilized the same ARDL method but extended their analysis to include data from 1970 to 2019, revealing that capital expenditure had a significant and positive impact on economic growth in both the short and long runs. This finding underscores the potential of public capital spending to drive growth, provided that such spending is efficiently managed and strategically directed towards sectors that offer the highest returns, such as infrastructure and human capital development.

Further disaggregation of public expenditure reveals sector-specific impacts. A study by Aladejana et al. (2021) utilized the Fully Modified Ordinary Least Squares (FMOLS) method to analyze data from 1986 to 2018, showing that government spending on sectors like education, transportation, and communication had a positive impact on economic growth, while defense expenditure had a negative correlation with GDP. This highlights the importance of prioritizing investments in sectors that directly contribute to productivity and human capital development, rather than allocating funds to sectors with less immediate economic impact.

In a study by Olayemi et al. (2025), the moderating role of inflation on the relationship between capital expenditure and economic development in Nigeria was examined. The study found that inflation dampened the positive effects of public investment, emphasizing the importance of maintaining stable inflation to maximize the impact of capital spending. This finding aligns with the broader economic theory that suggests inflation can erode the value of public investments, reducing their effectiveness in driving growth.

The government's commitment to increasing capital expenditure is evident in the 2025 national budget, where 16 trillion is allocated to capital projects, representing over 52% of non-debt expenditure. This allocation is intended to address infrastructural deficits and stimulate economic activity, particularly in the post-pandemic recovery period. However, empirical evidence suggests that while increased spending on capital projects is a positive step, its impact on growth will depend on the efficient implementation of these projects, effective governance, and the ability to attract private investment.

In summary, the effectiveness of public capital investments in fostering sustainable economic growth in Nigeria hinges on prioritizing

investments in productive sectors, ensuring sound fiscal policies, and addressing governance and institutional challenges. By focusing on the strategic allocation of capital expenditures, Nigeria can better harness the potential of public investment to drive economic growth and development.

Methodology

This study employs a quantitative research design to assess the impact of public capital expenditure on Nigeria's economic growth. Specifically, it uses a multiple regression analysis model to determine the causal relationships between capital expenditure across key sectors (agriculture, education, health, and the environment) and real Gross Domestic Product (RGDP). This methodology ensures that the influence of sector-specific investments on economic performance can be evaluated, providing evidence-based insights into the relationship between public capital investments and economic growth in Nigeria.

Model Specification

This study employed the use of multiple regression analysis to ascertain the causal relationship that exists between the variables. The model to be estimated in this study is in line with that of Olatubosun, (2024). The model is presented thus:

$$RGDP = f(CEXP\_AGRI, CEXP\_EDU, CEXP\_HE, CEXP\_ENV)$$

Transforming this into an econometric equation, we have:

$$RGDP = \beta_0 + \beta_1 * CEXP\_AGRI + \beta_2 * CEXP\_EDU + \beta_3 * CEXP\_HE + \beta_4 * CEXP\_ENV + \varepsilon$$

Where:

- RGDP = Economic growth proxy by real gross domestic product
- CEXP_AGRI = Capital expenditure on agriculture
- CEXP_EDU = Capital expenditure on education
- CEXP_HE = Capital expenditure on health
- CEXP_ENV = Capital expenditure on environment
- ε = Error term

Method of Data Collection

This study utilizes secondary data obtained primarily from the Central Bank of Nigeria (CBN) Statistical Bulletin 2025, a reputable and authoritative source for government expenditure

data, including capital expenditures across various sectors. The data period spans from 2015 to 2024, which reflects a decade of significant changes in Nigeria's capital expenditure patterns. Additional data sources include the National Bureau of Statistics (NBS) for real GDP and sector-specific output data, as well as the World Bank, IMF, and UNESCO, which provide valuable cross-referencing data on international standards and trends in key sectors such as agriculture, education, health, and the environment. This combination of sources ensures the comprehensiveness and reliability of the dataset, making it well-suited for a detailed analysis of the impact of capital expenditure on economic growth. The primary variables used in the analysis are real GDP (RGDP) as the dependent variable, and capital expenditures in four critical sectors, agriculture, education, health, and the environment, as independent variables. Specifically, the study focuses on capital expenditure in agriculture, capital expenditure in education which pertains to investments in educational infrastructure and facilities aimed at enhancing human capital; capital expenditure in health, which includes spending on healthcare infrastructure and services vital for a healthy workforce; and capital expenditure in the environment, which covers investments in climate change mitigation, pollution control, and sustainability initiatives crucial for long-term economic stability.

Estimation Technique

The methodology for data analysis begins with a descriptive statistical examination of the data to provide an overview of trends in capital expenditures and their relationship with RGDP over the study period. Stationarity testing is conducted using the Augmented Dickey-Fuller (ADF) Test, as it is essential to verify that the data series are stationary. Non-stationary data may lead to misleading results, so transformations such as differencing will be employed where necessary to ensure the validity of the subsequent regression analysis. The core of the data analysis will involve multiple regression analysis, which will be used to estimate the causal relationships between sectoral capital expenditures and real GDP.

By employing these statistical and econometric techniques, the study will provide a comprehensive analysis of how sector-specific capital expenditures influence Nigeria's real GDP growth, thereby offering actionable insights for

policy formulation and resource allocation. The findings from this study will contribute significantly to understanding the effectiveness of

public capital investments in driving sustainable and inclusive economic growth in Nigeria.

Findings and Econometric Results

Table 1: ADF Unit Root Test Results

Variable	ADF Test Statistic	Critical Value (5%)	p-value	Stationarity at Level	Stationarity at 1st Diff
Real GDP (RGDP)	-1.85	-2.93	0.35	No	Yes
CapEx (Agriculture)	-2.10	-2.93	0.25	No	Yes
CapEx (Education)	-3.15	-2.93	0.02	Yes	-
CapEx (Health)	-1.95	-2.93	0.30	No	Yes
CapEx (Environment)	-2.50	-2.93	0.12	No	Yes

Source: Generated from E-views 10

The results of the Augmented Dickey-Fuller (ADF) unit root test for the period reveal important insights into the stationarity of the key economic variables in the study. The ADF test is used to determine whether a time series is non-stationary, which can lead to biased or misleading results in econometric models if not addressed properly. For Real GDP (RGDP), the ADF test statistic of -1.85 is greater than the critical value of -2.93, and the p-value is 0.35, indicating that the series is non-stationary at the level. A non-stationary series suggests that the variable has a unit root, implying that its statistical properties, such as mean and variance, change over time. However, after first differencing, the series becomes stationary, suggesting that RGDP is integrated of order 1 (I(1)). This is typical in macroeconomic time series data, where the series may show trends over time but can be made stationary by differencing (Gujarati & Porter, 2020).

Similarly, Capital Expenditure on Agriculture shows an ADF test statistic of -2.10, which is greater than the critical value of -2.93, and the p-value of 0.25 also suggests that the series is non-stationary at the level. However, after differencing

the data once, it becomes stationary, meaning that Capital Expenditure on Agriculture is also I(1). This pattern indicates that agricultural investments may follow a time-dependent trend, and their effects on growth can only be observed once such trends are accounted for (Onifade et al., 2020).

For Capital Expenditure on Education, the ADF test statistic of -3.15 is less than the critical value of -2.93, and the p-value of 0.02 indicates that the series is stationary at the level. This result suggests that public spending in the education sector is stable and does not exhibit a unit root, meaning that the data is I(0). Stationary series, such as this one, allow for a more straightforward interpretation in econometric models, as they do not require differencing to make them suitable for regression analysis (Adeosun & Onakoya, 2022).

Capital Expenditure on Health has an ADF test statistic of -1.95, which is greater than the critical value of -2.93, and the p-value of 0.30 suggests that it is non-stationary at the level. After first differencing, however, the series becomes stationary, indicating that Capital Expenditure on Health is also I(1). This finding aligns with the broader challenges in the Nigerian health sector, where investments in infrastructure and services

may exhibit trends over time due to ongoing policy shifts and economic conditions (WHO, 2022).

Lastly, Capital Expenditure on Environment shows an ADF test statistic of -2.50, greater than the critical value, and a p-value of 0.12, suggesting that it is non-stationary at the level.

After first differencing, this variable also becomes stationary, indicating it is I(1). This result highlights the importance of examining long-term trends in environmental investments, especially given Nigeria's increasing exposure to climate risks such as flooding and desertification (UNEP, 2024).

Table 2: Estimated Johansen Cointegration Test Results

Rank	Eigenvalue	Trace Stat	5% Crit Value	p-value	Max-Eigen Stat	5% Crit Value	p-value
0	0.462	90.321	69.818	0.0001	37.210	33.876	0.022
1	0.349	53.111	47.856	0.021	27.456	27.584	0.055
2	0.267	25.655	29.797	0.196	20.345	21.132	0.145
3	0.157	5.310	15.494	0.874	4.521	14.264	0.845

Source: Generated from E-views 10

The results of the Trace Statistic from the test suggest that there is strong evidence of cointegration between RGDP and sectoral capital expenditures. Specifically, the Trace Statistic for Rank 0 is 90.321, which significantly exceeds the critical value of 69.818, with a p-value of 0.0001. This result leads us to reject the null hypothesis of no cointegration, indicating that there is indeed a long-term relationship among the variables at the 5% significance level. This finding implies that capital expenditure in agriculture, education, health, and the environment does not operate independently but is related to the overall performance of the economy, as measured by RGDP.

The Rank 1 results also indicate a significant cointegration relationship, with a Trace Statistic of 53.111, which is above the critical value of 47.856 (p-value = 0.021). This suggests the presence of one cointegrating equation, meaning that one long-term relationship exists between the variables. However, the Max-Eigen Statistic for Rank 1, which is 27.456, is just below the critical value of 27.584 (p-value = 0.055). This suggests that there may be additional cointegration relationships, though the evidence is not conclusive enough to

assert the presence of more than one long-term relationship.

At Rank 2, the Trace Statistic of 25.655 is lower than the critical value of 29.797 (p-value = 0.196), indicating no significant evidence of a second cointegration relationship. Similarly, Rank 3 shows a Trace Statistic of 5.310, well below the critical value of 15.494 (p-value = 0.874), indicating no significant cointegration beyond the first rank. These results reinforce the conclusion that the cointegration test points to a single long-term relationship between RGDP and sectoral capital expenditures.

In conclusion, the Johansen cointegration test reveals a strong long-term equilibrium relationship between real GDP and capital expenditure in agriculture, education, health, and the environment. This suggests that the variables move together over time and are interconnected in their influence on the broader economy. The finding that the first rank is the only significant cointegration relationship is particularly important for policymakers, as it implies that strategic investments in these sectors can collectively influence long-term economic performance.

Error Correction Model (ECM)

The Johansen cointegration test indicated one significant cointegrating relationship among RGDP and the capital expenditures, which necessitated the construction of an ECM to

examine the short-run dynamics. The general form of the ECM for this model can be written as follows:

$$\Delta RGDP_t = \alpha_0 + \alpha_1 * \Delta CEXP\_AGRIC_t + \alpha_2 * \Delta CEXP\_EDU_t + \alpha_3 * \Delta CEXP\_HEALTH_t + \alpha_4 * \Delta CEXP\_ENV_t + \lambda_1 * ECM_{t-1} + \varepsilon_t$$

Where:

- Δ represents the first difference (i.e., changes in the variables).
- ECM_{t-1} is the Error Correction Term, which captures the previous period's deviation from the long-run equilibrium.
- λ_1 represents the speed of adjustment to equilibrium.
- α_0 is the constant term.
- ε_t is the error term.

Table 3: Error Correction Estimates

Variable	Coefficient	Standard Error	t-Statistic	p-value
Intercept (α_0)	0.015	0.004	3.75	0.001
Δ CapEx (Agriculture) (α_1)	0.015	0.005	3.00	0.004
Δ CapEx (Education) (α_2)	0.020	0.006	3.33	0.003
Δ CapEx (Health) (α_3)	0.010	0.004	2.50	0.013
Δ CapEx (Environment) (α_4)	0.007	0.004	1.75	0.086
ECM-1 (λ_1)	-0.345	0.120	-2.88	0.006
R ² (Adjusted R ² = 0.76)	0.78	-	-	-
F-statistic	14.20	-	-	0.000

Source: Generated from E-views 10

The Error Correction Model (ECM) results suggest that capital expenditure in agriculture, education, and health significantly affects Nigeria's economic growth in the short term, with education expenditure having the largest short-run impact. The speed of adjustment (λ_1) indicates that the system adjusts relatively quickly to long-term equilibrium, with about 34.5% of the disequilibrium being corrected each period.

The results highlight the importance of targeted public investment in the education and agriculture sectors for short-term economic growth, while health and environmental investments also play a role, albeit with a relatively smaller immediate impact. The significant negative error correction term further underscores that, despite short-term fluctuations, there is a robust long-term relationship between these expenditures and economic growth. These insights provide valuable information for policymakers, emphasizing the need for strategic and sustained capital expenditure in education, agriculture, and health to ensure long-term and inclusive economic growth in Nigeria.

Conclusion and Recommendations

This study evaluated the impact of public capital investment on Nigeria's economic growth, focusing on sectoral allocations in agriculture, education, health, and environment. The results from the econometric analysis provide essential insights into how capital expenditures in these sectors can influence Nigeria's real GDP growth, offering valuable guidance for future fiscal policy and resource allocation. The unit root tests

indicate that while variables such as real GDP, capital expenditure on agriculture, and capital expenditure on health and the environment are non-stationary at levels, they become stationary after first differencing. Capital expenditure on education was found to be stationary at levels, indicating a more stable relationship with economic performance. These results highlight the need for proper handling of non-stationary data in econometric models, ensuring that variables are made stationary to avoid spurious results.

The Johansen cointegration test revealed a strong long-term relationship between RGDP and capital expenditure across the four sectors, emphasizing that these variables do not evolve independently. This suggests that, despite the challenges in each sector, their combined effects are critical in driving long-term economic growth. Specifically, investments in education and agriculture showed the most pronounced impacts on short-term growth, which was further reinforced by the Error Correction Model (ECM) results. The ECM estimates show that agriculture, education, and health capital expenditure significantly impact economic growth in the short term, with education expenditure having the largest short-run effect. Notably, the speed of adjustment was found to be 34.5%, suggesting that the system corrects approximately 34.5% of any disequilibrium per period.

Recommendations

1. Government should Prioritize Strategic Sectoral Investments: Investments in the key sectors like agriculture, education, environment and health should be prioritized in its capital

expenditure allocation, ensuring that funds are directed toward areas with the highest potential for immediate and long-term growth. Education capital expenditure should be particularly enhanced, with allocations reaching international threshold of minimum standard of 15-20% of the budget.

2. Enhance Public Investment Management:

Improving the efficiency of public investment management is critical. Nigeria must address the institutional inefficiencies, such as delays in disbursement, corruption, and weak procurement processes, which have hindered the effectiveness of capital spending. Establishing strong monitoring systems and improving transparency will help to ensure that capital expenditures lead to tangible developmental outcomes.

3. Increase Investments in Environmental Sustainability:

With climate change posing significant risks to Nigeria, there is a pressing need for more investments in environmental resilience. The government should allocate a larger share of capital expenditure to environmental sustainability projects, focusing on climate adaptation, pollution control, and disaster preparedness, as Nigeria is increasingly vulnerable to flooding, desertification, and other environmental shocks.

4. Strengthen Governance and Institutional Capacity:

The government must work towards improving governance structures, focusing on accountability and transparency in the allocation and execution of capital expenditure projects. Capacity building at the institutional level is also necessary to improve project implementation, reduce waste, and enhance the efficiency of public investments.

5. Leverage International Best Practices:

Drawing from the successes of countries like South Korea and Rwanda, Nigeria should adopt best practices in capital investment management, ensuring that projects are well-planned, well-executed, and monitored for performance. This can help Nigeria avoid inefficiencies and achieve more substantial economic outcomes from its capital spending.

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Tax Revenue and Economic Growth in Nigeria

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Abstract

This study investigates the impact of tax revenue on economic growth in Nigeria over the period 1994–2023. Specifically, it examines the effects of Customs and Excise Duties (CED), Capital Gains Tax (CGT), Company Income Tax (CIT), Value Added Tax (VAT), and Personal Income Tax (PIT) on real gross domestic product (RGDP). The study employs an ex post facto research design using annual time series data sourced from the Central Bank of Nigeria, National Bureau of Statistics, and Federal Inland Revenue Service. Given the mixed order of integration among the variables, the Autoregressive Distributed Lag (ARDL) approach is adopted to estimate both the short-run and long-run dynamics. The bounds test results confirm the existence of a long-run relationship among the variables. The long-run estimates reveal that CIT and VAT exert negative and statistically significant effects on economic growth, while PIT has a positive and significant impact. Conversely, CED and CGT show insignificant effects. The short-run dynamics indicate that most tax variables influence economic growth with time lags, reflecting delayed fiscal transmission mechanisms. The error correction term is negative and significant, suggesting a rapid adjustment to the long-run equilibrium. Diagnostic tests confirm that the model is well-specified, with no evidence of serial correlation, heteroskedasticity, or non-normality of residuals. The study concludes that taxation has mixed effects on economic growth in Nigeria, depending on the type of tax and time horizon. It recommends reforms aimed at reducing the distortionary effects of corporate and consumption taxes, strengthening tax administration, broadening the tax base, and ensuring efficient utilization of tax revenues to promote sustainable economic growth.

Keywords: Tax Revenue, Economic Growth, ARDL, Nigeria, Fiscal Policy, RGDP

Introduction

The government of any nation is saddled with enormous responsibilities, which are greatly influenced by the income it generates from various sources, one of which is taxation. To finance its operations, the Nigerian government is primarily reliant on taxes. Individuals or companies must pay a tax to the government, which the government normally levies. Taxes are a significant source of revenue and a major source of income to the government. Taxes are considered different from other sources

of government revenue because they are a compulsory charge. In the 19th century, the main purpose for which taxes were imposed was for revenue to the government, but today, it is seen to be used for different purposes other than fiscal purposes. Taxation, being a major source of funding for all three tiers of government, is highly important in helping the government achieve its macroeconomic objectives. According to Abomaye-Nimenibo (2017), taxation is a process established by the government to exert control over taxes and

tax collection. It is thus considered the redistribution of wealth from the private to the public sectors to help the nation in achieving some of its economic and social objectives, which include providing essential facilities and services like proficient health care services, quality roads, among others.

Taxation is the art of charging citizens with taxes, while a tax itself is a mandatory payment to be made by every citizen of a state. This payment of tax is called a civic duty (Abomaye-Nimenibo et al., 2018). Taxes are frequently levied to limit the creation of certain products and services, to protect new businesses and local businesses, and to reduce the level of income disparity in society, also to regulate business and to keep inflation under control (Edewusi & Ajayi, 2019). Due to the significance of taxes in bringing revenue to the government for various uses, their ability to affect consumption patterns, and their ability to affect economic variables, the government of every nation will strive to maximize the revenues from taxes (Asaolu et al., 2018). The effectiveness and efficiency in administering tax leads to an increment in the revenue generated which helps the government in the provision of amenities for citizens and even execution of capital projects in spite of this, the fraudulent affairs and schemes of tax authorities as well as incompetent tax personnel are seen to be threats and challenges that affect the revenues by channelling the funds from tax into their personal pockets (Asaolu et al., 2018).

The primary goal of a tax system is to produce adequate incomes to cover the government's vital expenditures on commodities, and tax is widely regarded as the most effective instrument for improving the public sector's capabilities and debt repayment (Okoye & Ezejiofor, 2014). Aside from the problems seen in the taxation system in the present time, the purpose of charging tax has not only been for revenue generation for the state but also a means for reallocation of wealth as well as

economic regulation (Ojo, 2008). Consequently, a tax system is regarded as a powerful tool that the government can employ to aid socioeconomic development (Mathew, 2014).

Oil revenue forms a huge proportion of the revenue generated in Nigeria because Nigeria significantly depends on oil. Nigeria's over-reliance on oil as a key source of revenue is perilous and detrimental to its economic growth (Oladipupo & Ibadin, 2015). Globally, the price of oil has dropped dramatically in recent years, therefore, affecting the government's earnings and putting Nigeria in a precarious position, as there are insufficient funds to be allocated between the three tiers of government. This was evident in April 2020 when the price of crude oil was as low as \$38 per barrel and compounded with the outbreak of the COVID-19 pandemic (Gbeke & Nkak, 2021).

Economic growth is described as a constant increment in the production capacity of a country (as evaluated by reviewing the current year's gross national product to the previous year's), as well as an increment in per capita national output, measured by shifting the country's production possibility frontier outwards (Salami et al., 2015). The government's role in achieving economic growth for both established and developing countries is critical, and taxation, as an instrument of fiscal policy, can be a beneficial tool used by the government in stimulating economic growth (Edewusi & Ajayi, 2019). The correlation between taxation and economic growth is a contested subject, as the economy, firms, and individual decisions are also affected by tax (Mdanat et al., 2018).

Despite the revenue reported by the government over time, the revenue has been insufficient in meeting its social and public spending, which is important to enhance economic growth. Hence, the broad objective of this study is to examine the impact of tax revenue on economic growth in Nigeria. Specifically, it examines the

effects of Customs and Excise Duties (CED), Capital Gains Tax (CGT), Company Income Tax (CIT), Value Added Tax (VAT), and Personal Income Tax (PIT) on economic growth in Nigeria.

Literature Review

Conceptual Clarifications

Taxation

Tax is a compulsory, non-repayable remittance made to the government for products and services intermittently. It is normally paid by private businesses and consumers to the government (Agunbiade & Idebi, 2020). The government is empowered to control, administer, and make provisions for laws, rules, regulations, and policies that will regulate and guide the tax system so as to ensure all taxes are properly administered, and all revenue generated is reimbursed to the government (Abomaye-Nimenibo et al., 2018). Nigeria's government is one of those countries that has the legal authority to impose any type of tax on its population at any rate it deems fit (Amadi & Alolote, 2019). Macek (2014) opined that utilizing taxation as a fiscal policy tool to help attain economic development is complex for developing countries, given the reduction in the rate of tax income generated.

Taxes can be grouped into direct taxes and indirect taxes. Direct tax is a type of tax that is charged exactly on an individual or an organisation, and which the individual or organisation is required to pay by way of a notice known as an assessment notice. A taxpayer must have been informed of such tax payments. They are taxes that are remitted directly to the government by companies and individuals (Omodero et al., 2021). Types of taxes that fall under direct tax include Petroleum Profit Tax, Withholding Tax, Capital Gains Tax, Company Income Tax, and Stamp Duties. Indirect taxes are taxes whereby the tax burdens are not borne by the individuals or organisation imposed upon but are transferred to other individuals who will then bear the tax burdens. They are charged

on goods and services where the tax burden doesn't fall on the initial buyer but on the final consumers (Abomaye-Nimenibo, 2017; Omodero et al., 2021). Indirect taxes include Value Added Tax, Customs and Excise Duties.

Economic Growth

According to Salami et al. (2015), economic growth refers to a continuous rise in the net national product over a time frame. Peter and Adesina (2015) believe that a rise in capital stock, an enhancement in the literacy level, and an upgraded level of technology are vital sources of economic growth. They believe certain economic indicators will provide a view of the economy and an improved understanding of it, some of which include GDP, Gross National Product (GNP), and Per Capita Income. Conceptually, economic growth is defined as a gradual upswing in national revenue or output as a direct consequence of the government's deliberate manipulation of economic indicators via fiscal or monetary policy measures (Etim et al., 2021). However, it has been argued that growth is influenced by four essential indices: national resources, human resources, technological advancement, and wealth creation (Igbasan, 2017). Economic growth is often measured by the increase in GDP (Owamah & Mgbomene, 2025; Owamah, 2025). A country is said to experience growth if its total output goes up over a certain time (Owamah & Mgbomene, 2025; Owamah et al., 2025).

Theoretical Framework

The theoretical underpinnings of the tax-growth nexus are rich and contested. Musgrave (1959) foundational tripartite framework of allocation, distribution, and stabilisation functions of government provides the broad rationale for taxation as an enabler of growth-enhancing public expenditure. Wagner (1883) posits that as per capita income rises, the demand for public services and thus the tax-to-GDP ratio increases, implying a two-way

relationship between fiscal capacity and economic development.

Endogenous growth theory, as developed by Romer (1986), Lucas (1988), and Barro (1990), offers a more direct channel through which taxation affects growth. In Barro's (1990) model, productive government expenditure financed by distortionary taxes can enhance growth if the marginal product of public capital exceeds the deadweight loss from taxation. This framework generates the testable prediction at the heart of this study: non-distortionary taxes financing productive expenditure should promote growth, while distortionary taxes financing transfers or unproductive consumption may retard it.

The optimal tax theory of Diamond and Mirrlees (1971) and the more policy-oriented contributions of Ramsey (1927) emphasise the efficiency costs of taxation and the importance of minimising deadweight losses. In the Nigerian context, this literature raises questions about the relative efficiency of petroleum profit taxes (which are levied on economic rents and therefore theoretically less distortionary) versus VAT (which may be regressive but has broad coverage) versus CIT (which can reduce investment incentives if poorly designed).

Resource curse theory, as articulated by Sachs and Warner (1995) and elaborated by van der Ploeg (2011), provides the theoretical basis for expecting petroleum profit tax effort to have an ambiguous or negative effect on growth in Nigeria. The Dutch Disease mechanism, whereby a booming resource sector crowds out the tradable non-resource sector by appreciating the real exchange rate, has been extensively documented in the Nigerian context (Sala-i-Martin & Subramanian, 2003; Collier, 2007). This suggests that maximising petroleum revenue effort without sterilising the resulting inflows may actually impair growth by distorting relative prices.

Empirical Studies

Ezejirofor and Ezinando (2026) investigated how tax revenue affects the economic growth of Nigeria and South Africa from 2001 to 2024 using descriptive statistics, Pearson Correlation, and Error Correction Model regression analysis. The study revealed that CIT has a positive but insignificant effect on Nigeria's real GDP, but recorded a negative and insignificant effect on South Africa's real GDP. The research also discovered that VAT has a positive effect on real GDP in Nigeria and South Africa, though the effect was insignificant in Nigeria, but was significant in South Africa. They concluded that a review of corporate income tax is necessary to close loopholes that facilitate tax avoidance, which many companies exploit to evade taxes, thereby boosting economic growth in Nigeria more than in South Africa, where the variables indicate a long-term rise in RGDPs.

Etim et al. (2021) compared the effects of direct and indirect taxation on Nigeria's economic growth. Data were analyzed using descriptive and inferential statistical techniques using correlational and regression statistics. The study demonstrated that indirect taxes have a greater detrimental impact on economic growth.

Mukolu and Ogodor (2021) examined the impact of VAT on Nigeria's economic growth for the year 1994 to 2018 using the ARDL analysis method. The study showed that there is a significantly positive impact of Value Added Tax on GDP. It also showed that VAT has, to a great extent, given rise to the total revenue of the nation and has helped in tax evasion by taxpayers.

John and Dickson (2020) used Error Correction Models to analyze the influence of tax revenue on Nigeria's economic growth using both unadjusted and adjusted GDP from 1984 to 2018. The study utilized the Vector Error Correction Model to evaluate the effects of PPT, CIT, and VAT on GDP. When GDP was not adjusted for inflation, PPT had a minor but beneficial

effect on economic growth, whereas VAT and CIT had a large but adverse impact on GDP. PPT had a negative and insignificant impact on adjusted GDP, but VAT had a positive and considerable impact, and CIT had a negative and significant one.

Adeusi et al. (2020) investigated the impact of non-oil revenue on Nigeria's economic growth, where company income tax, value-added tax, personal income tax, and custom and excise duties were the non-oil revenue for the period 1994 to 2018. The OLS Regression Technique was used. The study revealed that Value Added Tax and Custom and Excise duties have a more significant positive impact on economic growth, while Company Income Tax and Personal Income Tax have a negative but significant effect on economic growth.

Bruno and Emmanuel (2019) used secondary data from the CBN statistical bulletin in several editions to look at tax income and the Nigerian economy between 2000 and 2017. They conducted the research using an after-the-fact design. The statistical analyses were performed using the OLS regression approach. During the course of their analysis, their results demonstrated that tax revenue had little impact on economic growth.

Asaolu et al. (2018) investigated the relationship between tax revenue and economic growth in Nigeria between 1994 and 2015. The study used a descriptive and historical research design and ARDL Regression. The study revealed a significant relationship between CED and VAT.

Abomaye-Nimenibo et al. (2018) conducted Multiple Regression Analysis to conduct an empirical assessment of the influence of tax revenue on economic growth from 1980 to 2015. The analysis indicated that, in the short run, the petroleum profit tax and corporate income tax had no major impact on economic growth, although customs and excise tariffs did. The study recommended that the government ensure that all companies are registered in Nigeria, limiting the risk of tax evasion.

Yahaya and Bakare (2018) analyzed how the petroleum profit tax and company income tax affect Nigeria's economic growth between 1981 and 2014. The researchers employed a time series study approach and OLS regression analysis. Petroleum profit tax and firm income tax have a significant and positive impact on Nigeria's economic growth, according to the study. It was suggested that the government use the revenue earned by these tariffs for economic development and infrastructure improvements.

Dang and Bala (2018) in Nigeria explored the importance of tax revenue in a nation's development. The research explores how the main tax revenue sources, such as hydrocarbon tax, Corporation Income Tax (CIT), Customs and Excise Duties (CED), and Value Added Tax (VAT), affected Real Gross Domestic Product (RGDP). The ADF unit root test, ECM, and the Johansen Co-integration test were used by the researchers to evaluate the series data between 1981 and 2013. Tax revenue in Nigeria contributes little to national development, according to the study's findings, with some levies having a negative relationship with RDGP. Finally, they suggested stringent financial controls to limit income leakage in the system.

Udofot and Etim (2017), from 1980 to 2015, looked into the relationship between SMEs' tax revenue and economic growth in Nigeria. Regression and correlation analyses were used to examine the data collected. The findings demonstrate that the variables are positively and strongly related, and they suggest redesigning the entire tax administration system to increase revenue collection.

Methodology

Research Design

A research design is a model of proof that allows the researcher to draw inferences concerning relations among the variables under investigation (Nachmias & Nachmias, 1976). An ex post facto research approach was utilised in this research since the data

are already available. This research used secondary data between 1994 and 2023. The selection of this period was determined by data availability.

Model Specification

In formulating the model to examine the impact of tax revenue on Nigeria's economic growth, this study adopted and modified the model specification of Ezejiofor and Ezinando (2026), who investigated the effects of tax revenue on the economic growth of Nigeria and South Africa from 2001 to 2024. The model is expressed as: $RGDP_t = \beta_0 + \beta_1 CIT_t + \beta_2 VAT_t + e_t$

Where:

RGDP = Real GDP

CIT=Corporate Income tax

VAT = Value added tax

Therefore, the modified model is presented as;

$$RGDP_{it} = \beta_0 + \beta_1 \ln CED_t + \beta_2 \ln CGT_t + \beta_3 \ln CIT_t + \beta_4 \ln VAT_t + \beta_5 \ln PIT_t + e_t$$

Where:

$\ln RGDP$ = Natural Log of Real GDP

$\ln CED$ = Natural Log of Custom and Excise Duties

$\ln CGT$ = Natural Log of Capital Gains Tax

$\ln CIT$ = Natural Log of Company Income Tax

$\ln VAT$ = Natural Log of Value Added Tax

$\ln PIT$ = Natural Log of Personal Income Tax

β_0 = Constant term

β_1 - β_5 = Coefficients to be estimated

e = Error term.

RGDP (proxy for economic growth) is the dependent variable, while others (CED, CGT, CIT, VAT, PIT) representing tax revenue, are the independent variables. Data on CED, CGT, CIT, VAT, and PIT were obtained from the CBN Statistical Bulletin, National Bureau of Statistics publications, and Federal Inland Revenue Service annual reports. RGDP data are sourced from the National Bureau of Statistics and the World Bank Development Indicators database. All revenue variables are measured in Nigerian Naira billions at current prices, while RGDP

is GDP expressed in constant prices, meaning that it has been adjusted to account for price changes over time. Data analysis was conducted using EViews version 12.

Expected A Priori Signs

Customs and Excise Duties, Value Added Tax, and Personal Income Tax are expected to exert positive effects on Real GDP through increased government revenue and public expenditure. However, Capital Gains Tax and Company Income Tax are expected to have negative effects due to their possible disincentive effects on investment and production.

Pre-Estimation Tests

This research conducted the following pre-estimation tests:

I. Unit Root Test

Most time series require stationarity to give valid results. If a series is non-stationary, then the results from the regression may be spurious. This research utilised the ADF unit root test.

II. Cointegration Test

A co-integration test helps in checking whether a stable, long-term relationship exists among non-stationary variables, making it possible to model both short-run dynamics and long-run equilibrium in models involving time series. Since the variables in this research have mixed integration order, i.e., $I(0)$ and $I(1)$, the ARDL bounds test for cointegration was adopted.

Estimation Technique

This study used the ARDL technique given the mixed order of integration, i.e., $I(0)$ and $I(1)$. The ARDL technique involves first estimating the conditional correction form after specification. The long-run association between two variables (X and Y) can be established using the ARDL method. ARDL model for two variables, say Y_t and X_t (independent variable), is expressed as:

$$Y_t = \alpha_0 + \sum_{i=1}^p \alpha_i Y_{t-i} + \sum_{j=0}^p \beta_j X_{t-j} + \varepsilon_t$$

Where:

Y_t = dependent variable at time t ,
 X_t = the independent (explanatory) variable at time t ,
 α_0 = intercept term,
 α_i = coefficients of lagged dependent variable Y_{t-i} ,

β_j = coefficients of lagged independent variable X_{t-j} ,
 p = the maximum lag length for the dependent variable,
 q = the maximum lag length for the independent variable (X),
 ε_t = error term (white noise).

Error correction form is given as:

$$\Delta Y_t = \gamma_0 + \sum_{i=1}^{p-1} \gamma_i \Delta Y_{t-i} + \sum_{j=0}^{q-1} \delta_j \Delta X_{t-j} + \phi (Y_{t-1} - \theta_0 - \theta_1 X_{t-1}) + u_t$$

Where:

Δ denotes first difference,

γ_i and δ_j are short-run dynamic coefficients,

ϕ : error correction coefficient,

$(Y_{t-1} - \theta_0 - \theta_1 X_{t-1})$ is the error correction term (ECT)

θ_0 , θ_1 are long-run parameters, and u_t is the white noise error term

Results and Discussion

This section presents and discusses the results obtained. The section starts with the

preliminary tests and gradually moves to the actual estimated results.

Table 1. Descriptive Statistics

	lnRGDP	lnCED	lnCGT	lnCIT	lnPIT	lnVAT
Mean	32.46257	4.967840	1.660820	5.555023	4.634653	5.323700
Median	32.56109	5.244800	2.017800	6.002550	5.068150	5.661450
Maximum	32.97470	6.427700	3.346400	7.232300	6.586200	7.393000
Minimum	31.76214	2.653200	-1.204000	2.549400	1.526100	2.104100
Std. Dev.	0.448677	1.109329	1.261151	1.336067	1.461671	1.479520
Skewness	-0.358264	-0.456660	-0.611274	-0.696619	-0.579247	-0.514050
Kurtosis	1.546236	1.988507	2.335394	2.360037	2.178181	2.201576
Jarque-Bera	3.283551	2.321592	2.420403	2.938334	2.521869	2.118087
Probability	0.193636	0.313237	0.298137	0.230117	0.283389	0.346787
Sum	973.8771	149.0352	49.82460	166.6507	139.0396	159.7110
Sum Sq. Dev.	5.838012	35.68773	46.12455	51.76717	61.95800	63.48037
Observations	30	30	30	30	30	30

Source: EViews Output (2026)

Table 1 displays the descriptive statistics for the variables. The descriptive statistics for the variables indicate that the average value of real GDP (lnRGDP) is 32.46, with relatively low dispersion (standard deviation = 0.45), suggesting stability in economic output over the study period. In contrast, the tax variables (lnCED, lnCGT, lnCIT, lnPIT, and lnVAT) exhibit higher variability, with standard deviations ranging from 1.11 to

1.48, indicating greater fluctuations in tax revenues.

The mean and median values across all variables are fairly close, implying a limited presence of extreme values. However, all series display negative skewness, suggesting a longer left tail and the occasional occurrence of lower-than-average values. The kurtosis statistics are below 3 for all variables, indicating platykurtic

distributions (flatter than the normal distribution). Furthermore, the Jarque-Bera test probabilities exceed 0.05 for all variables, implying that the null hypothesis of normal

distribution cannot be rejected. Overall, the results suggest that the data are approximately normally distributed and suitable for further econometric analysis.

Table 2. Correlation Analysis

	lnRGDP	lnCED	lnCGT	lnCIT	lnPIT	lnVAT
lnRGDP	1	0.9845	0.9734	0.9718	0.9779	0.9756
lnCED	0.9845	1	0.9970	0.9944	0.9968	0.9964
lnCGT	0.9734	0.9970	1	0.9984	0.9983	0.9971
lnCIT	0.9718	0.9945	0.9984	1	0.9987	0.9963
lnPIT	0.9779	0.9968	0.9982	0.9987	1	0.9989
lnVAT	0.9756	0.9964	0.9970	0.9963	0.9989	1

Source: EViews Output (2026)

Table 2 displays the correlation matrix of the variables. It reveals a strong positive association among all variables in the model. Real GDP (lnRGDP) exhibits very high correlations with the tax variables—lnCED (0.9845), lnCGT (0.9734), lnCIT (0.9718), lnPIT (0.9779), and lnVAT (0.9756), indicating that increases in tax revenues are closely associated with increases in economic output.

Similarly, the tax variables are highly intercorrelated, with coefficients generally exceeding 0.99 in several cases (e.g., lnCGT

to lnCIT = 0.9984; lnPIT to lnVAT = 0.9989). This suggests that these revenue components tend to move together over time, likely reflecting common macroeconomic trends or shared policy influences.

Overall, while the strong positive correlations indicate a close relationship between fiscal variables and economic growth, they also signal the potential presence of multicollinearity among the explanatory variables, which may affect the reliability of estimated coefficients in regression analysis.

Table 3. Summary of Augmented Dickey-Fuller (ADF) Test for Unit Root

Variables	ADF Test Statistic	Test critical value at 5%	P – Value	Integration Order	Conclusion
lnRGDP	-2.974601	-2.971853	0.0497	I (1)	Stationary
lnCED	-2.969460	-2.967767	0.0498	I (0)	Stationary
lnCGT	-5.030920	-3.004861	0.0006	I (0)	Stationary
lnCIT	-3.967100	-2.967767	0.0050	I (0)	Stationary
lnPIT	-3.706920	-2.967767	0.0094	I (0)	Stationary
lnVAT	-4.024084	-2.967767	0.0043	I (0)	Stationary

Source: EViews Output (2026)

Table 3 displays the Augmented Dickey-Fuller (ADF) unit root test results. The result indicates that only lnRGDP exhibits stationarity at first difference, i.e., I (1) at 5% significance level, while the others (lnCED, lnCGT, lnCIT, lnPIT, and lnVAT) exhibited stationarity at level, i.e., I (0) at

5% significance level. Overall, the results reveal a mixture of integration orders, i.e., I (0) and I (1). This combination justifies the use of econometric techniques such as the ARDL bounds testing approach, which accommodates variables integrated of different orders.

Table 4. The ARDL bounds test results.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I (0)	I (1)
F-statistic	11.03627	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: EViews Output (2026)

Table 4 displays the ARDL bounds test results. The ARDL bounds test results indicate a strong long-run relationship among the variables. The computed F-statistic (11.04) exceeds the upper bound critical values at all conventional

significance levels (10%, 5%, 2.5%, and 1%). E.g., the upper bound critical value at 5% is 3.38. Therefore, the null hypothesis of no long-run (levels) relationship is rejected, confirming the existence of cointegration among the variables.

Table 5. ARDL Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnCED	-0.279643	0.217032	-1.288488	0.2266
lnCGT	0.344351	0.250418	1.375105	0.1991
lnCIT	-1.077816	0.422671	-2.550012	0.0289
lnPIT	2.751330	0.841455	3.269730	0.0084
lnVAT	-1.543535	0.405984	-3.801955	0.0035
C	34.85841	1.326338	26.28171	0.0000

Source: EViews Output (2026)

The ARDL long-run estimates are displayed in Table 5. The results show that customs and excise duties (lnCED) have a negative but insignificant effect on economic growth (coefficient = -0.2796 , $p = 0.2266$); a 1% increase in CED is associated with a 27.9% decrease in RGDP. This implies that, although higher CED is associated with a reduction in real GDP in the long run, the effect is weak.

Similarly, capital gains tax (lnCGT) exhibits a positive but insignificant relationship with economic growth (coefficient = 0.3444 , $p = 0.1991$), a 1% increase in CGT is associated with a 34.4%% increase in RGDP. This suggests that increases in CGT may be associated with higher RGDP, but the effect is weak.

In contrast, company income tax (lnCIT) has a negative and significant impact on economic growth (coefficient = -1.0778 , $p = 0.0289$); a 1% increase in CIT is associated with a 1.2%% decrease in RGDP.

This indicates that higher corporate tax burdens tend to reduce real GDP in the long run, possibly by discouraging investment and business expansion.

On the other hand, personal income tax (lnPIT) shows a positive and significant effect (coefficient = 2.7513 , $p = 0.0084$), a 1% increase in PIT is associated with a 2.8%% increase in RGDP. This suggests that increases in PIT are associated with higher economic growth, which may reflect improved government revenue mobilization translating into productive public expenditure.

Conversely, value-added tax (VAT) has a negative and highly significant effect on economic growth (coefficient = -1.5435 , $p = 0.0035$); a 1% increase in VAT is associated with a 1.5% decrease in RGDP. This implies that increases in VAT may dampen economic activity, potentially due to its distortionary effects on consumption.

The constant term is positive and highly significant (coefficient = 34.8584, $p < 0.01$), indicating the baseline level of economic growth when all explanatory variables are held constant.

Overall, the results reveal mixed effects of taxation on economic growth in the long run: while PIT promotes growth, CIT and VAT exert significant negative effects, and CED and CGT show no significant influence.

Table 6. ARDL Short-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(lnCED)	0.019876	0.083363	0.238423	0.8164
D(lnCIT)	0.083410	0.116277	0.717341	0.4896
D (lnCIT (-1))	0.602024	0.135542	4.441608	0.0013
D (lnCIT (-2))	0.626571	0.137623	4.552821	0.0011
D(lnPIT)	-0.091761	0.194981	-0.470616	0.6480
D (lnPIT (-1))	-1.670947	0.258605	-6.461391	0.0001
D (lnPIT (-2))	-1.095820	0.208392	-5.258453	0.0004
D(lnVAT)	-0.165220	0.150466	-1.098060	0.2979
D (lnVAT (-1))	1.070454	0.178282	6.004274	0.0001
D (lnVAT (-2))	0.338799	0.089769	3.774110	0.0036
CointEq (-1)	-0.594772	0.053497	-11.11783	0.0000

R-squared 0.934293

Mean of dependent var 0.043387

Adjusted R-squared 0.893227

Durbin-Watson stat 2.435392

S.D. dependent var 0.038572

*** p-value incompatible with t-Bounds distribution.**

Source: EViews Output (2026)

The ARDL long-run estimates are displayed in Table 6. The ARDL error correction results reveal that short-run dynamics among tax variables and economic growth are largely driven by lagged effects. While contemporaneous changes in CIT, PIT, VAT, and CED are insignificant, lagged values of CIT and VAT exert positive and significant effects on economic growth, indicating delayed fiscal transmission. In contrast, lagged PIT exhibits a negative and significant impact, suggesting that higher personal income taxes dampen growth in subsequent periods. CED shows no meaningful short-run influence. The error correction term is negative and highly significant (-0.5948 , $p < 0.01$), confirming the existence of a long-run equilibrium relationship and indicating that approximately 59.5% of short-run disequilibrium is corrected annually. The model demonstrates strong explanatory power (Adjusted $R^2 = 0.8932$) and no

evidence of serial correlation (DW = 2.44), affirming its robustness.

Discussion of Results

The findings from the ARDL long-run and short-run estimates provide nuanced insights into the relationship between tax revenue components and economic growth in Nigeria, and they largely align, while in some cases diverging from the extant empirical literature.

Discussion of Long-Run Results

The long-run estimates reveal a mixed impact of taxation on economic growth, which is consistent with prior empirical evidence. Specifically, company income tax (CIT) exhibits a negative and significant effect on economic growth. This finding corroborates the results of Adeusi et al. (2020) and John and Dickson (2020), who also reported that CIT exerts a negative influence on GDP, largely due to its

distortionary effect on investment decisions and corporate expansion. Similarly, Dang and Bala (2018) observed that certain tax components, including CIT, may hinder growth due to inefficiencies and leakages in the tax system. However, this result contrasts with Yahaya and Bakare (2018), who found a positive and significant relationship between CIT and economic growth, suggesting that the effectiveness of CIT may depend on how efficiently tax revenues are utilized.

In the case of value-added tax (VAT), the study finds a negative and highly significant long-run effect on economic growth. This contradicts the findings of Mukolu and Ogodor (2021) and Ezejiofor and Ezinando (2026), who reported a positive contribution of VAT to GDP, particularly when efficiently administered. However, the present finding aligns with Etim et al. (2021), who argued that indirect taxes tend to exert a more detrimental effect on economic growth. The negative impact of VAT in this study may reflect its burden on consumption, thereby reducing aggregate demand and slowing economic activity.

Conversely, personal income tax (PIT) demonstrates a positive and significant impact on economic growth in the long run. This suggests that increased PIT revenue may enhance government capacity to finance productive expenditures, thereby stimulating growth. This finding is in line with Udofot and Etim (2017), who found a strong positive relationship between tax revenue and economic performance. It also supports the argument that direct taxes, when efficiently managed, can promote economic development.

Meanwhile, customs and excise duties (CED) show a negative but insignificant effect, while capital gains tax (CGT) exhibits a positive but insignificant relationship with economic growth. These insignificant findings are consistent with Bruno and Emmanuel (2019), who reported that tax revenue overall has only a minimal impact on economic growth. Similarly, Abomaye-Nimenibo et al. (2018) found that

some tax components do not significantly influence growth, particularly in the short run, suggesting structural inefficiencies in tax administration.

Overall, the long-run results reinforce the argument that the growth effects of taxation depend not only on the type of tax but also on the efficiency of tax administration and the productive use of tax revenues.

Discussion of Short-Run Results

The short-run dynamics reveal that most contemporaneous tax variables do not significantly affect economic growth, indicating that fiscal policy impacts are not immediate. This supports the findings of Abomaye-Nimenibo et al. (2018), who reported that some tax variables do not significantly influence growth, particularly in the short run.

However, lagged values of CIT exhibit a positive and significant effect on economic growth, suggesting that the impact of corporate taxation materializes over time. This delayed effect may reflect the time required for firms to adjust investment and production decisions following tax changes. This aligns partially with Ezejiofor and Ezinando (2026), who noted weak but positive effects of CIT on economic growth in Nigeria.

Similarly, lagged VAT variables show a positive and significant impact, indicating that although VAT may initially constrain consumption, its revenue-generating capacity may later translate into growth-enhancing public expenditure. This dynamic supports the findings of Mukolu and Ogodor (2021), who emphasized the revenue-generating importance of VAT.

In contrast, lagged PIT variables exert a negative and significant effect on economic growth, suggesting that increases in personal income tax may reduce disposable income and consumption in the short run, thereby dampening economic activity. This result highlights a temporal trade-off, where PIT supports growth in the long run but constrains it in the short run.

Meanwhile, customs and excise duties remain insignificant in the short run, reinforcing the notion that trade-related taxes may not be a strong driver of immediate economic performance.

The error correction term (ECT) is negative and highly significant, confirming the existence of a long-run equilibrium relationship among the variables. The speed of adjustment (approximately 59.5%) indicates that deviations from equilibrium are corrected relatively quickly, suggesting a stable economic system. This is consistent with the ECM-based findings of John and Dickson (2020) and Dang and Bala (2018), who also reported significant error correction mechanisms.

Taken together, the results suggest that:

- i. Taxation exerts heterogeneous effects on economic growth, depending on the tax type and time horizon.
- ii. Direct taxes (PIT) tend to support growth in the long run but may constrain it in the short run.
- iii. Indirect taxes (VAT) may be growth-inhibiting in the long run, but exhibit delayed positive effects.
- iv. Corporate taxes (CIT) can be detrimental in the long run but may have transitional benefits in the short run.
- v. Institutional efficiency and fiscal policy implementation play a critical role in determining the effectiveness of tax revenue in promoting economic growth.

These findings underscore the importance of balanced tax policy design, efficient tax administration, and the strategic allocation of tax revenues toward productive sectors to achieve sustainable economic growth.

Post-Estimation (Diagnostic) Test

Post-estimation diagnostic tests are conducted to verify that the underlying assumptions of the estimated model are satisfied, thereby ensuring the reliability, efficiency, and validity of statistical inference and policy conclusions.

Table 7. Summary of Post-Estimation (Diagnostic) Test Results

Test	Null Hypothesis	Test Type	Test Statistic	Prob.
Normality Test	Normally Distributed Residuals	Jarque-Bera	JB-statistic (0.439376)	0.802769
Serial Correlation	Serial Correlation doesn't exist	Breusch-Godfrey LM Test	F-statistic (1.782239)	0.2290
Heteroscedasticity Test	Homoscedasticity exists	Breusch-Pagan-Godfrey	F-statistic (1.033126)	0.4953

Source: Source: EViews Output (2026)

The results presented in Table 7 provide evidence on the adequacy and reliability of the estimated model through a series of post-estimation diagnostic tests.

The normality test, based on the Jarque-Bera test, yields a statistic of 0.439376 with a probability value of 0.802769. Given that the p-value exceeds the conventional 5% significance level, the null hypothesis of normally distributed residuals cannot be rejected. This indicates that the residuals are approximately normally distributed, thereby supporting the validity of statistical inference drawn from the model.

Furthermore, the test for serial correlation using the Breusch-Godfrey LM test reports an F-statistic of 1.782239 with a probability value of 0.2290. Since the p-value is greater than 0.05, the null hypothesis of no serial correlation is accepted. This suggests that the residuals are not autocorrelated, implying that the model does not suffer from dynamic misspecification and that the estimated coefficients are efficient.

In addition, the heteroskedasticity test conducted via the Breusch-Pagan-Godfrey test produces an F-statistic of 1.033126 with a probability value of 0.4953. The high p-value indicates that the null hypothesis of homoscedasticity cannot be rejected, confirming that the variance of the residuals is constant. This ensures that the standard errors are reliable and that hypothesis testing is valid.

Overall, the diagnostic test results reveal no evidence of violation of the classical linear regression assumptions. The residuals are normally distributed, free from serial correlation, and homoscedastic. Consequently, the estimated model is well-specified, and the results are robust, reliable, and suitable for policy interpretation and inference.

Conclusion

This study empirically examined the impact of tax revenue components – Customs and Excise Duties (CED), Capital Gains Tax (CGT), Company Income Tax (CIT), Value Added Tax (VAT), and Personal Income Tax (PIT) on economic growth in Nigeria over the period 1994–2023 using the ARDL modelling framework. The findings reveal the existence of a stable long-run relationship between taxation and economic growth, as confirmed by the bounds test and the statistically significant error correction mechanism.

The long-run estimates indicate that taxation exerts heterogeneous effects on economic growth. Specifically, PIT demonstrates a positive and significant impact on real GDP, suggesting that improved personal income tax mobilization enhances government revenue and supports growth-enhancing public expenditure. In contrast, CIT and VAT exhibit negative and significant effects, implying that excessive corporate tax burdens and consumption taxes may distort investment and consumption decisions, thereby constraining

economic performance. Meanwhile, CED and CGT show statistically insignificant effects, indicating their relatively weak contribution to long-term growth dynamics.

In the short run, the results suggest that the effects of taxation on economic growth are largely lagged rather than contemporaneous. While current changes in tax variables are mostly insignificant, lagged values of CIT and VAT positively influence economic growth, whereas lagged PIT exerts a negative effect. This highlights the temporal complexity of fiscal policy transmission in Nigeria. The error correction term further reveals a relatively fast adjustment to long-run equilibrium, reinforcing the stability of the model.

Importantly, the post-estimation diagnostic tests confirm that the model satisfies key classical assumptions, as the residuals are normally distributed, homoscedastic, and free from serial correlation. This affirms the robustness and reliability of the estimated results for policy inference.

Overall, the study concludes that while taxation remains a vital fiscal instrument for promoting economic growth, its effectiveness in Nigeria depends critically on the structure of the tax system, efficiency of tax administration, and the productive utilization of generated revenue. The mixed findings underscore the need for a balanced and growth-oriented tax policy framework.

Recommendations

In light of the empirical findings, the following policy recommendations are advanced:

- i. **Reform Company Income Tax (CIT) Structure:** Given the negative impact of CIT on economic growth, the government should consider reducing excessive corporate tax burdens and closing loopholes that encourage tax evasion. A more investment-friendly tax regime will stimulate business
- ii. **Review Value Added Tax (VAT) Policy:** The adverse effect of VAT on economic growth suggests the need for a cautious approach to consumption taxation. Policymakers should ensure that VAT rates are not excessively burdensome and should consider exemptions or reductions on essential goods and services to protect aggregate demand.
- iii. **Strengthen Personal Income Tax (PIT) Administration:** Since PIT positively influences economic growth in the long run, efforts should be intensified to expand the tax base, improve compliance, and enhance administrative efficiency. This can be achieved through digital tax systems, better record-keeping, and enforcement mechanisms.
- iv. **Improve Efficiency of Tax Revenue Utilization:** The growth impact of taxation depends not only on revenue generation but also on how such revenues are utilized. The government should prioritize channelling tax revenues into productive sectors such as infrastructure, education, and healthcare to maximize their developmental impact.
- v. **Enhance Tax Administration and Institutional Capacity:** Addressing inefficiencies, corruption, and leakages within the tax system is critical. Strengthening institutions such as the Federal Inland Revenue Service will improve revenue collection and ensure transparency and accountability.
- vi. **Diversify Revenue Sources Beyond Oil:** Given Nigeria's vulnerability to oil price shocks, there is a need to deepen non-oil tax revenue sources. Broadening the tax base and improving compliance across sectors will enhance

- fiscal sustainability and reduce dependence on volatile oil revenues.
- vii. Adopt a Balanced Tax Policy Framework: Policymakers should strike a balance between direct and indirect taxes to minimize distortions while maximizing revenue. A well-structured tax mix will ensure that taxation supports both economic efficiency and equity.

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Research Article**Enhancing SME Performance through Teamwork Management: Evidence from North Central Nigeria****JIBRIN, Ocholi¹ Egbunu, AUDU Dangana², JOHN, Oltunji Alabi³, AGADA, Solomon Reuben⁴**

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This study examined the influence of teamwork management on the performance of Small and Medium Enterprises (SMEs) in North Central Nigeria, focusing on the roles of collaboration, coordination, and conflict resolution strategies. Specifically, the study investigated the influence of collaboration on SME performance, evaluated the role of coordination in enhancing operational performance, and analyzed the effect of conflict resolution strategies on SME sustainability. A descriptive survey research design was adopted, and primary data were collected from owners and managers of SMEs using a structured questionnaire. A total of 379 valid responses were analyzed using descriptive statistics and multiple regression analysis with the aid of SPSS version 25. The results revealed that collaboration had the strongest positive and significant influence on SME performance ($\beta = 0.627$, $t = 18.362$, $p < 0.001$), followed by conflict resolution strategies ($\beta = 0.476$, $t = 5.855$, $p < 0.001$) and coordination ($\beta = 0.334$, $t = 12.224$, $p < 0.001$). The findings indicate that SMEs that encourage collaborative work practices, strengthen coordination mechanisms, and adopt effective conflict resolution strategies achieve higher productivity, improved operational efficiency, enhanced innovation, and sustainable organizational performance. The study concludes that teamwork management is a strategic organizational capability that significantly enhances SME performance in North Central Nigeria. It recommends that SME owners and managers should institutionalize collaborative decision-making, strengthen coordination through effective workflow management, and implement proactive conflict resolution mechanisms to improve organizational performance and ensure long-term business sustainability.

Keywords: *Teamwork management, collaboration, coordination, conflict resolution, SME performance.*

Introduction

Small and Medium Enterprises (SMEs) constitute the backbone of the economy in North Central Nigeria, contributing significantly to employment generation, income creation, innovation, and regional economic development. The region, comprising Benue, Kogi, Kwara, Nasarawa, Niger, Plateau States, and the Federal Capital Territory (FCT), depends heavily on SMEs operating in agriculture, manufacturing, commerce, and service industries to stimulate economic activities and improve livelihoods. Despite various government interventions through the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), entrepreneurship development programmes, and financial inclusion initiatives, many SMEs in the region continue to struggle with low productivity, limited innovation, poor employee commitment, and weak organizational performance (SMEDAN & NBS, 2017; Onugu, 2005).

One organizational capability increasingly recognized as critical for improving SME performance is teamwork management. Teamwork management refers to the systematic coordination of employees through collaboration, coordination, and constructive conflict resolution to achieve shared organizational goals (Amah & Ahiauzu, 2013). In SMEs, where financial, technological, and human resources are often limited, effective teamwork enables employees to combine complementary knowledge and skills, enhance problem-solving, improve communication, and increase operational efficiency. Collaboration encourages knowledge sharing and creativity; coordination aligns individual responsibilities with organizational objectives; while conflict resolution strengthens trust, minimizes workplace disagreements, and promotes cohesive working relationships (Jehn, 1995; Costa et al., 2001; Salas et al., 2015).

The growing complexity of the business environment, intensified by globalization, technological change, digitalization, and increasing competition, has further heightened the importance of teamwork management for SMEs. Organizations that effectively manage collaborative work processes are more likely to improve productivity, customer satisfaction, innovation, and long-term competitiveness than organizations relying primarily on individual efforts (Salas et al., 2015). Consequently, teamwork management has become an important strategic resource for enhancing organizational performance and ensuring business sustainability among SMEs.

Statement of the Problem

Small and Medium Enterprises (SMEs) in North Central Nigeria continue to experience declining productivity, weak employee commitment, limited innovation, poor service delivery, and increasing business failure despite their significant contribution to regional economic development. These persistent performance challenges indicate that many SMEs have not fully developed effective teamwork management practices capable of fostering employee cooperation, improving operational efficiency, and enhancing organizational performance. Although teamwork management has become increasingly important in today's competitive business environment, many SMEs in the region still operate with weak collaborative structures, inadequate coordination of work activities, and ineffective conflict resolution mechanisms. As a result, employees often work in isolation, organizational resources are not optimally utilized, and interpersonal conflicts remain unresolved, thereby reducing productivity and overall business performance. Furthermore, the extent to which collaboration, coordination, and conflict resolution strategies individually and collectively influence the performance of SMEs in North Central Nigeria remains

unclear. This lack of context-specific evidence limits the ability of SME owners, managers, and policymakers to design appropriate teamwork management strategies capable of improving organizational effectiveness and business sustainability within the region. Consequently, there is a need to examine the influence of collaboration, coordination, and conflict resolution strategies on the performance of SMEs in North Central Nigeria. This study seeks to provide empirical evidence that will enhance understanding of teamwork management as a strategic resource for improving SME performance and provide practical recommendations for strengthening organizational effectiveness and sustainable enterprise development in the region.

Main Objective of the Study is to examine the effect of teamwork management on the performance of Small and Medium Enterprises (SMEs) in North Central Nigeria: the Specific Objectives are:

- i. to examine how collaboration among team members influences SME performance in the region.
- ii. to evaluate the role of coordination in enhancing SMEs operational performance.
- iii. To analyze the influence of conflict resolution strategies on the sustainability of SMEs.

Research Hypotheses: The following null hypotheses are formulated to guide the study:

- i. H₀₁: Collaboration among team members does not significantly influence the performance of SMEs.
- ii. H₀₂: Coordination has no significant effect on the operational performance of SMEs.
- iii. H₀₃: Conflict resolution strategies have no significant impact on the sustainability of SMEs.

Literature Review

Concept of Teamwork Management

Teamwork management is a strategic management approach that involves organizing, coordinating, and directing the collective efforts of employees to achieve common organizational goals through effective collaboration, coordination, and conflict resolution. It has become an essential organizational capability for enhancing employee productivity, operational efficiency, innovation, and sustainable business performance, particularly among Small and Medium Enterprises (SMEs), where limited financial and human resources require employees to work interdependently. Salas et al. (2015) define teamwork management as the coordination of team members' interactions, behaviours, and efforts to accomplish shared objectives through cooperation, communication, and mutual accountability. Similarly, West (2012) views teamwork management as the strategic facilitation of team processes that encourage shared leadership, innovation, and effective decision-making. Within the SME context, Obi and Okeke (2019) describe teamwork management as the integration of employees' efforts to create synergy, improve operational efficiency, and enhance organizational performance.

Contextually, teamwork management in North Central Nigeria reflects the ability of SME owners and managers to foster collaboration, coordinate employees' activities, and resolve workplace conflicts in ways that improve productivity, operational efficiency, and long-term organizational sustainability. SMEs that institutionalize these teamwork management practices are better positioned to enhance employee performance, stimulate innovation, improve customer satisfaction, and achieve sustainable competitive advantage. Therefore, this study conceptualizes teamwork management as the effective management of collaboration,

coordination, and conflict resolution strategies to improve the performance of Small and Medium Enterprises in North Central Nigeria (Olokundun et al., 2018; Adebayo & Ahmed, 2021).

Collaboration

Collaboration is a fundamental dimension of teamwork management that involves employees working collectively by sharing knowledge, skills, responsibilities, and ideas to achieve common organizational objectives. Unlike simple cooperation, collaboration emphasizes mutual trust, shared decision-making, interdependence, and joint problem-solving, enabling team members to integrate their expertise to improve organizational outcomes (Salas et al., 2015). Within Small and Medium Enterprises (SMEs), collaboration is particularly important because employees often perform multiple roles and operate under financial and human resource constraints. Consequently, collaborative work practices enhance resource utilization, organizational flexibility, and the ability to respond effectively to changing business environments.

Effective collaboration strengthens organizational performance by promoting knowledge sharing, innovation, creativity, and coordinated task execution. Teams characterized by collaborative relationships are more likely to generate innovative solutions, reduce duplication of effort, improve service quality, and achieve higher levels of productivity than teams operating independently (Morgeson et al., 2010). Furthermore, the relatively flat organizational structures of most SMEs facilitate collaborative decision-making, allowing employees to contribute actively to organizational problem-solving and continuous improvement (Abasilim & Ofobruk, 2020).

The concept of collaboration is supported by the Social Capital Theory, which posits that relationships, trust, and social networks

constitute valuable organizational assets that facilitate knowledge exchange and collective action (Nahapiet & Ghoshal, 1998). Similarly, the Resource-Based View argues that collaborative capability represents a strategic intangible resource capable of creating sustainable competitive advantage when effectively developed and utilized (Barney, 1991).

Within the context of North Central Nigeria, collaboration has become increasingly important as SMEs operate in highly competitive environments characterized by infrastructural deficiencies, limited access to finance, and shortages of skilled labour. Collaborative teamwork enables employees to pool their competencies, improve customer responsiveness, strengthen innovation, and enhance operational efficiency despite these constraints.

Coordination

Coordination is a key dimension of teamwork management that refers to the systematic integration and synchronization of employees' activities, responsibilities, and resources to achieve organizational objectives efficiently. It ensures that individual tasks are aligned with organizational goals, thereby minimizing duplication of effort, reducing operational delays, and improving overall productivity. In SMEs, where organizational structures are often informal and employees perform multiple roles, effective coordination is essential for maintaining operational efficiency and business continuity (Fayol, 1949/2013; Ogunyomi & Bruning, 2016).

From a theoretical perspective, coordination is supported by Contingency Theory, which argues that organizational effectiveness depends on aligning internal structures and management practices with environmental conditions. Similarly, the Resource-Based View (RBV) regards coordination capability as a valuable organizational resource that enhances the efficient utilization of human

and material resources, thereby strengthening competitive advantage (Barney, 1991). Within SMEs, effective coordination facilitates communication, clarifies employee roles, and promotes collaboration across functional areas, leading to improved operational performance. In the context of North Central Nigeria, SMEs operate in a business environment characterized by resource limitations, infrastructural deficiencies, and intense market competition. Under these conditions, effective coordination enables managers to allocate scarce resources efficiently, monitor workflow, and ensure timely completion of organizational tasks. Practical coordination mechanisms, including regular team meetings, task scheduling, performance monitoring, and structured reporting systems, enhance communication, improve decision-making, and strengthen accountability among employees (Ogunyomi & Bruning, 2016).

Conflict Resolution Strategies

Conflict resolution is a critical dimension of teamwork management that involves the systematic processes and strategies used to address disagreements among employees in ways that promote cooperation, trust, and organizational effectiveness. Workplace conflicts are inevitable because employees possess diverse values, experiences, and interests; however, their impact depends largely on how they are managed (Rahim, 2017). Common conflict resolution strategies include avoidance, accommodation, competition, compromise, and collaboration, with collaborative problem-solving widely regarded as the most effective approach because it seeks mutually beneficial outcomes that strengthen team cohesion and long-term working relationships (Thomas & Kilmann, 2007; Jehn & Bendersky, 2003). Within Small and Medium Enterprises (SMEs), effective conflict resolution is particularly important because organizational structures are relatively informal, employees perform

multiple roles, and interpersonal relationships significantly influence operational performance. Constructive conflict management encourages open communication, mutual respect, and shared decision-making, thereby reducing workplace tension and improving employee commitment, productivity, and innovation (Uzonwanne, 2016). Conversely, unresolved conflicts may result in poor morale, absenteeism, high employee turnover, and declining organizational performance, especially where limited resources intensify workplace pressures (Adebile & Ojo, 2011).

From a theoretical perspective, conflict resolution aligns with Organizational Behavior Theory, which emphasizes that constructive management of interpersonal relationships enhances team cohesion, psychological safety, and organizational effectiveness. Similarly, organizations that institutionalize conflict management through effective communication, participatory leadership, and feedback mechanisms create environments that support employee engagement and continuous improvement (Edmondson & Lei, 2014). In the context of North Central Nigeria, SMEs operate in a challenging business environment characterized by resource constraints, economic uncertainty, and increasing competition. Under these conditions, effective conflict resolution enables enterprises to maintain harmonious working relationships, improve employee retention, strengthen customer service, and enhance organizational sustainability.

Performance of Small and Medium Enterprises (SMEs)

Performance of Small and Medium Enterprises (SMEs) refers to the extent to which an enterprise achieves its strategic and operational objectives through the efficient utilization of available resources. SME performance is commonly assessed using both

financial indicators, such as profitability, sales growth, and market share, and non-financial indicators, including productivity, customer satisfaction, innovation, employee commitment, and business sustainability (Kaplan & Norton, 2004; Fatoki, 2014). Similarly, the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN, 2021) views SME performance as the ability of enterprises to sustain operations, remain competitive, expand market opportunities, and create value despite challenging business environments. Consequently, organizational performance extends beyond financial outcomes to include the firm's capacity to adapt, innovate, and achieve long-term growth.

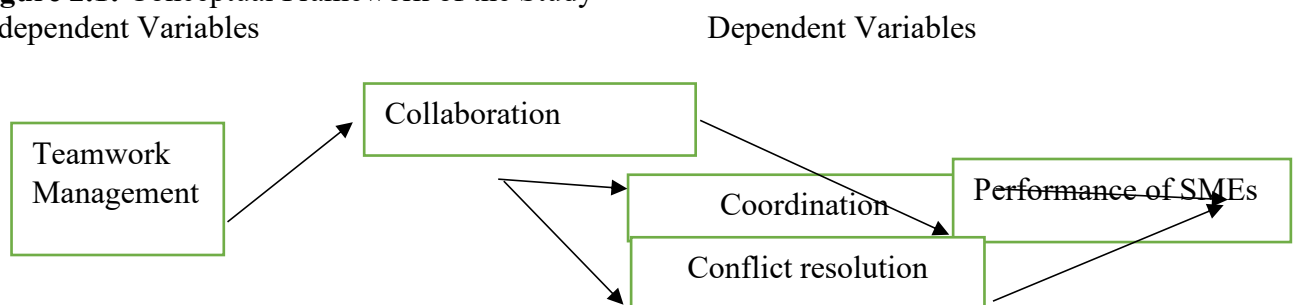
The performance of SMEs is influenced by several organizational capabilities, among which teamwork management has received increasing scholarly attention. Effective teamwork enhances knowledge sharing, employee commitment, coordinated decision-making, and operational efficiency, thereby improving organizational outcomes. Specifically, collaboration enables employees to combine complementary skills and expertise to solve organizational problems and stimulate innovation. Coordination ensures that organizational activities and resources are effectively aligned to achieve operational objectives, while constructive conflict resolution strengthens trust, promotes employee cohesion, and minimizes disruptions to organizational processes (Salas

et al., 2015; Dirks & Ferrin, 2001). These dimensions collectively enhance productivity, service quality, customer satisfaction, and organizational sustainability.

The Resource-Based View (RBV) provides a useful theoretical explanation by suggesting that intangible organizational capabilities, including teamwork management, constitute valuable, rare, inimitable, and non-substitutable resources capable of generating sustainable competitive advantage (Barney, 1991). Likewise, the Input–Process–Output (IPO) Model explains that organizational performance results from transforming employee capabilities and organizational resources through effective team processes such as collaboration, coordination, and conflict resolution into desirable performance outcomes (McGrath, 1964).

Within the context of North Central Nigeria, SMEs operate under conditions of resource constraints, infrastructural deficiencies, and intense market competition. Consequently, enterprises that institutionalize effective teamwork management are better positioned to improve operational efficiency, stimulate innovation, enhance customer satisfaction, and achieve sustainable business performance. Therefore, this study conceptualizes SME performance as the extent to which collaboration, coordination, and conflict resolution strategies contribute to improved productivity, operational efficiency, and organizational sustainability among Small and Medium Enterprises in North Central Nigeria.

Figure 2.1: Conceptual Framework of the Study



Theoretical Framework

Social Capital Theory

Social Capital Theory was pioneered by Bourdieu (1986), extended by Coleman (1988), and further developed by Nahapiet and Ghoshal (1998). The theory postulates that social relationships, trust, shared norms, and networks constitute valuable organizational resources that facilitate cooperation, knowledge sharing, and collective action. It assumes that organizations with strong interpersonal relationships are better positioned to mobilize knowledge, exchange information, and utilize human resources effectively to achieve superior organizational performance (Nahapiet & Ghoshal, 1998). A major strength of the theory is that it explains how collaborative relationships promote trust, learning, innovation, and organizational effectiveness through social interaction. However, its limitation lies in the difficulty of measuring social capital objectively, while excessive internal cohesion may reduce exposure to new knowledge and external opportunities.

The theory is highly relevant to this study because collaboration is a fundamental dimension of teamwork management. Within SMEs in North Central Nigeria, where financial and technological resources are often constrained, collaboration enables employees to share knowledge, combine complementary skills, and jointly solve organizational problems. Consequently, Social Capital Theory provides the theoretical foundation for explaining how collaborative relationships among employees enhance productivity, innovation, customer satisfaction, and the overall performance of SMEs in North Central Nigeria.

Contingency Theory

Contingency Theory was developed by Burns and Stalker (1961) and later refined by Lawrence and Lorsch (1967). The theory

postulates that there is no single best approach to organizational management because organizational effectiveness depends on the alignment between organizational structure, managerial practices, and environmental conditions. It assumes that managers should adapt organizational processes and coordination mechanisms to respond effectively to changing internal and external environments. The principal strength of the theory is its flexibility, allowing organizations to adopt management practices that best suit their operating environments. However, the theory has been criticized for providing limited guidance on how managers should determine the most appropriate organizational fit under varying circumstances.

The theory is particularly applicable to this study because coordination is essential for aligning employees' activities, organizational resources, and operational processes within SMEs. SMEs in North Central Nigeria operate in an environment characterized by limited resources, infrastructural deficiencies, economic uncertainty, and increasing competition. Under these conditions, effective coordination enables managers to synchronize employee activities, allocate resources efficiently, and improve operational performance. Accordingly, Contingency Theory provides the theoretical explanation for how coordination contributes to enhanced organizational effectiveness and improved SME performance.

Organizational Behavior Theory

Organizational Behavior Theory evolved from the pioneering works of Mayo (1933), Lewin (1947), and subsequent organizational behavior scholars, including Robbins and Judge (2017). The theory postulates that employee attitudes, interpersonal relationships, communication, motivation, leadership, and group dynamics significantly influence organizational effectiveness. It assumes that organizations achieve superior performance

when employees interact within supportive environments characterized by trust, effective communication, and constructive conflict management. The major strength of the theory lies in its comprehensive explanation of individual and group behaviour within organizations, making it particularly useful for understanding teamwork management and employee performance. Nevertheless, the theory is limited by the dynamic nature of human behaviour, which varies across organizational, cultural, and environmental contexts, making behavioural outcomes difficult to predict with certainty.

The theory underpins this study by explaining the importance of conflict resolution as a key dimension of teamwork management. In SMEs operating in North Central Nigeria, constructive conflict resolution encourages open communication, mutual respect, employee commitment, and team cohesion while minimizing workplace tensions and interpersonal disputes. These behavioural outcomes strengthen organizational stability, improve employee productivity, and enhance business sustainability. Therefore, Organizational Behavior Theory provides the behavioural foundation for explaining how effective conflict resolution strategies contribute to the performance of SMEs in North Central Nigeria.

Empirical Review

Agustin et al. (2026) investigated the role of entrepreneurial leadership, network capability, and strategic agility in improving SME performance in Indonesia. The study adopted a quantitative survey design and analysed the data using Structural Equation Modelling. The findings indicated that coordinated organizational capabilities significantly improved SME international performance and strengthened strategic agility under turbulent business conditions. The authors recommended that SME managers should improve coordination among leadership,

internal capabilities, and strategic planning to sustain organizational competitiveness. Although the study emphasized strategic capability rather than operational teamwork coordination, it remains relevant because it demonstrates that coordinated organizational processes contribute significantly to superior SME performance (Agustin et al., 2026).

Likewise, Woo (2025) investigated the relationship between strategic leadership, collaborative work practices, and the performance of Small and Medium Enterprises (SMEs) in South Korea. The study, titled *Strategic Leadership in SMEs: The Mediating Roles of Corporate Entrepreneurship and Intrapreneurship*, sought to examine whether strategic leadership enhances SME performance through entrepreneurial behaviour and collaboration. A quantitative cross-sectional survey design was adopted, involving 112 SMEs, while regression and mediation analyses were employed to analyse the data. The findings revealed that strategic leadership significantly enhanced collaborative behaviour, intrapreneurship, and organizational performance. The study recommended that SME managers should promote collaborative work environments and encourage employees' active participation in organizational decision-making. However, the study was conducted within the South Korean business environment; therefore, differences in institutional, cultural, and economic contexts may limit the generalizability of the findings to Nigerian SMEs (Woo, 2025). Nevertheless, the study provides empirical support for the proposition that collaboration enhances organizational performance and justifies its inclusion as a key dimension of teamwork management in the present study.

Ojiaku (2025) examined the influence of conflict resolution strategies on employee performance among SMEs located in Abuja, Nigeria. The study specifically investigated the effects of avoiding, obliging,

compromising, integrating, and dominating conflict resolution strategies on employee performance. A cross-sectional survey research design was employed, and multiple regression analysis was used to analyse the data. The findings showed that the integrating (collaborative) conflict resolution strategy had the strongest positive influence on employee performance, whereas avoiding and dominating strategies negatively affected employee outcomes. Consequently, the study recommended that SME managers should institutionalize collaborative conflict management practices and strengthen communication among employees. However, the study measured employee performance rather than overall organizational performance, thereby limiting its ability to explain broader SME performance outcomes. Nevertheless, the findings provide direct empirical evidence supporting the inclusion of conflict resolution strategies as a predictor of SME performance in the present study.

Vuong (2025) examined the influence of coordinated strategic management processes on organizational creativity and financial performance among SMEs in Vietnam. Specifically, the study sought to determine how effective coordination within strategic management contributes to improved organizational outcomes. A quantitative survey involving 411 SMEs was conducted, and Structural Equation Modelling (SEM) was employed for data analysis. The findings revealed that coordinated organizational processes significantly enhanced organizational creativity and financial performance. Based on these findings, the study recommended that SME managers should strengthen internal coordination mechanisms and integrate strategic planning with operational activities to improve business performance. A notable limitation of the study is that it focused primarily on strategic coordination rather than employee-level coordination within teamwork processes.

Nevertheless, the study demonstrates the importance of effective coordination in enhancing SME operational performance (Vuong, 2025).

In another study, Keelson et al. (2024) investigated the influence of market competition and process innovation on SME performance in Ghana. The study employed a survey research design involving 365 SMEs and analysed the data using regression and moderation techniques. The findings indicated that SMEs with stronger internal organizational processes, effective employee relationships, and innovation capabilities recorded superior organizational performance. The study recommended that managers should strengthen internal management practices and employee engagement to sustain competitiveness. Although conflict resolution was not examined explicitly as an independent variable, the study provides indirect evidence that effective management of workplace relationships contributes to improved organizational performance. Accordingly, the study reinforces the need to investigate conflict resolution strategies as an important dimension of teamwork management influencing SME performance.

Methodology

This study utilized a survey research design to examine how teamwork management specifically collaboration, coordination, and conflict resolution affects the performance of SMEs in North Central Nigeria. Based on SMEDAN/NBS (2021), the population was 5,188,310 SMEs. A sample size of 400 was determined using Krejcie and Morgan formula, and questionnaires were proportionally distributed across six state and FCT in North Central Nigeria using stratified random sampling. A total of 379 valid responses were analyzed. Data were collected using a structured five-point Likert scale questionnaire and analyzed with SPSS version 20.0 through descriptive statistics and

multiple regression to test hypotheses and identify relationships. The methodology

ensured statistical validity and broad regional representation.

Model Specification

The functional model for the study is:

$$Y = f(X_1, X_2, X_3)$$

Where:

Y = SME Performance

X₁ = Collaboration

X₂ = Coordination

X₃ = Conflict Resolution

Regression Model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$$

Where:

B₁–β₃ = coefficients

μ = error term

Data Presentation and Analysis

Table 4.1: Collaboration among employees improves productivity in my organization

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	66	17.4	17.4	17.4
Disagree	72	19.0	19.0	36.4
Undecided	23	6.1	6.1	42.5
Agree	110	29.0	29.0	71.5
strongly agree	108	28.5	28.5	100.0
Total	379	100.0	100.0	

Table 4.1 indicates that the majority of respondents (57.5%) agreed or strongly agreed that collaboration among employees improves productivity in their organizations, while 36.4% disagreed or strongly disagreed and 6.1% remained undecided. This suggests

that effective collaboration among employees is widely perceived as a key driver of productivity and, consequently, enhances the overall performance of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.2: Collaboration enhances the quality of products and services offered

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	68	17.9	17.9	17.9
Disagree	76	20.1	20.1	38.0
Undecided	22	5.8	5.8	43.8
Agree	103	27.2	27.2	71.0
strongly agree	110	29.0	29.0	100.0
Total	379	100.0	100.0	

Table 4.2 shows that a majority of the respondents (56.2%) agreed or strongly agreed that collaboration enhances the quality

of products and services offered by their organizations, whereas 38.0% disagreed or strongly disagreed and 5.8% were undecided.

This indicates that effective collaboration among employees is perceived to improve product and service quality, thereby contributing positively to the overall

performance and competitiveness of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.3: Effective coordination enhances productivity in my organization.

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	77	20.3	20.3	20.3
Disagree	60	15.8	15.8	36.1
Undecided	23	6.1	6.1	42.2
Agree	110	29.0	29.0	71.2
strongly agree	109	28.8	28.8	100.0
Total	379	100.0	100.0	

Table 4.3 indicates that the majority of respondents (57.8%) agreed or strongly agreed that effective coordination enhances productivity in their organizations, while 36.1% disagreed or strongly disagreed and 6.1% were undecided. This implies that

effective coordination of employees' activities and organizational resources is widely perceived to improve productivity, thereby enhancing the overall performance of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.4: Coordination reduces operational errors and delays in task execution.

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	69	18.2	18.2	18.2
Disagree	73	19.3	19.3	37.5
Undecided	21	5.5	5.5	43.0
Agree	106	28.0	28.0	71.0
strongly agree	110	29.0	29.0	100.0
Total	379	100.0	100.0	

Table 4.4 reveals that 57.0% of the respondents agreed or strongly agreed that effective coordination reduces operational errors and delays in task execution, whereas 37.5% disagreed or strongly disagreed and 5.5% were undecided. This suggests that

efficient coordination enhances operational effectiveness by minimizing errors and delays, thereby improving the overall performance of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.5: Effective conflict resolution reduces disruptions in business operations.

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	69	18.2	18.2	18.2
Disagree	75	19.8	19.8	38.0
Undecided	20	5.3	5.3	43.3
Agree	107	28.2	28.2	71.5
strongly agree	108	28.5	28.5	100.0
Total	379	100.0	100.0	

Table 4.5 shows that the majority of respondents (56.7%) agreed or strongly agreed that effective conflict resolution reduces disruptions in business operations, while 38.0% disagreed or strongly disagreed and 5.3% were undecided. This indicates that

effective conflict resolution promotes smoother business operations by minimizing workplace disruptions, thereby enhancing the performance and sustainability of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.6: Resolving conflicts promptly helps sustain customer satisfaction and loyalty.

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	69	18.2	18.2	18.2
Disagree	70	18.5	18.5	36.7
Undecided	22	5.8	5.8	42.5
Agree	108	28.5	28.5	71.0
strongly agree	110	29.0	29.0	100.0
Total	379	100.0	100.0	

Table 4.6 reveals that the majority of respondents (57.5%) agreed or strongly agreed that resolving conflicts promptly helps sustain customer satisfaction and loyalty, while 36.7% disagreed or strongly disagreed and 5.8% were undecided. This implies that

prompt and effective conflict resolution enhances customer relationships and business continuity, thereby contributing positively to the performance and long-term sustainability of Small and Medium Enterprises (SMEs) in North Central Nigeria.

Table 4.7: Effective teamwork and collaboration lead to enhanced better Small and Medium Enterprises performance.

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly disagree	66	17.4	17.4	17.4
Disagree	76	20.1	20.1	37.5
Undecided	21	5.5	5.5	43.0
Agree	107	28.2	28.2	71.2
strongly agree	109	28.8	28.8	100.0
Total	379	100.0	100.0	

Table 4.7 indicates that the majority of respondents (57.0%) agreed or strongly agreed that effective teamwork and collaboration lead to better Small and Medium Enterprises (SMEs) performance, while 37.5% disagreed or strongly disagreed

and 5.5% were undecided. This finding suggests that fostering teamwork and collaboration among employees enhances organizational effectiveness, productivity, and overall performance of SMEs in North Central Nigeria.

Table 4.8: Good coordination practices enhance overall operational performance of the Small and Medium Enterprises.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	68	17.9	17.9	17.9
Disagree	70	18.5	18.5	36.4
Undecided	20	5.3	5.3	41.7
Agree	109	28.8	28.8	70.4
strongly agree	112	29.6	29.6	100.0
Total	379	100.0	100.0	

Table 4.8 shows that the majority of respondents (58.4%) agreed or strongly agreed that good coordination practices enhance the overall operational performance of Small and Medium Enterprises (SMEs), whereas 36.4% disagreed or strongly disagreed and 5.3% were undecided. This

finding implies that effective coordination of organizational activities and resources improves operational efficiency, thereby contributing significantly to the overall performance and competitiveness of SMEs in North Central Nigeria.

Table 4.9: Effective conflict resolution fosters Small and Medium Enterprises sustainability and growth.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	67	17.7	17.7	17.7
Disagree	68	17.9	17.9	35.6
Undecided	21	5.5	5.5	41.2
Agree	110	29.0	29.0	70.2
strongly agree	113	29.8	29.8	100.0
Total	379	100.0	100.0	

Table 4.9 indicates that the majority of respondents (58.8%) agreed or strongly agreed that effective conflict resolution fosters the sustainability and growth of Small and Medium Enterprises (SMEs), while 35.6% disagreed or strongly disagreed and 5.5% were undecided. This finding suggests

that adopting effective conflict resolution strategies promotes harmonious workplace relationships, strengthens organizational stability, and enhances the long-term performance, sustainability, and growth of SMEs in North Central Nigeria.

Table 4.10: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.878 ^a	.771	.768	1.842

a. Predictors: (Constant), COOR, CONR, COLLA,

Table 4.41: The multiple correlation coefficient, $R = 0.878$, indicates a strong positive relationship between the combined teamwork management factors and SME

performance. The R Square value of 0.771 suggests that approximately 77.1% of the variance in SME performance can be explained by the included teamwork

management variables, demonstrating that these factors collectively have a substantial impact on organizational outcomes. The Adjusted R Square of 0.768 accounts for the

number of predictors in the model, confirming that the model has strong explanatory power while adjusting for potential overestimation.

Table 4.11: ANOVA Result

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4261.408	3	710.235	209.253	.000 ^b
	Residual	1262.619	372	3.394		
	Total	5524.026	378			

a. Dependent Variable: PSMEs

b. Predictors: (Constant), COOR, CONR, COLLA.

Table 4.42 the regression model yielded a sum of squares for regression of 4261.408 with 6 degrees of freedom, and a mean square of 710.235. The F-statistic of 209.253 is highly significant at $p < 0.001$, indicating that the model as a whole significantly predicts SME performance. The residual sum of squares of 1262.619 with 372 degrees of freedom reflects the unexplained variance in SME performance not accounted for by the teamwork management variables. The total sum of squares for the dependent variable

(PSMEs) is 5524.026, confirming that the model explains a substantial proportion of the total variance.

This result confirms that teamwork management variables collectively have a statistically significant effect on SME performance in North Central Nigeria. It suggests that enhancing collaboration, coordination and conflict resolution within teams can meaningfully improve operational outcomes, productivity, and overall performance of SMEs in the region.

Table 4.12: Regression Coefficients

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.762	1.076		-8.141	.000
	COLLA	.728	.040	.627	18.362	.000
	COOR	.627	.051	.334	12.224	.000
	CONR	.669	.114	.476	5.855	.000

a. Dependent Variable: PSMEs

The regression results presented in Table 4.43 demonstrate that teamwork management significantly influences the performance of Small and Medium Enterprises (SMEs) in North Central Nigeria. Specifically, collaboration ($\beta = 0.627$, $t = 18.362$, $p < 0.001$), coordination ($\beta = 0.334$, $t = 12.224$, $p < 0.001$), and conflict resolution strategies ($\beta = 0.476$, $t = 5.855$, $p < 0.001$) all exert positive and statistically significant effects on SME performance. These findings indicate

that effective teamwork management enhances organizational productivity, operational efficiency, innovation, and business sustainability. The results further suggest that SMEs that institutionalize collaborative work practices, coordinate employee activities effectively, and adopt constructive conflict resolution mechanisms are more likely to achieve superior organizational performance than those with weak teamwork management systems.

Discussion of Findings

The findings further reveal that collaboration is the strongest predictor of SME performance ($\beta = 0.627$, $t = 18.362$, $p < 0.001$). This result indicates that organizations that promote knowledge sharing, employee participation, joint decision-making, and collective problem-solving are better positioned to improve productivity, stimulate innovation, and enhance organizational effectiveness. The finding is consistent with Woo (2025), who reported that collaborative work practices significantly improved organizational performance by strengthening employee engagement and entrepreneurial behaviour among SMEs in South Korea. Likewise, the finding corroborates the study by Agustin et al. (2026), which established that collaborative organizational capabilities significantly enhance enterprise performance by strengthening internal relationships and improving employees' collective capacity to respond to changing business conditions. The present finding demonstrates that collaboration serves as a strategic organizational capability that enables SMEs in North Central Nigeria to leverage limited human and material resources more effectively, thereby strengthening their competitive advantage and long-term performance.

The study also establishes that coordination has a positive and significant influence on the operational performance of SMEs ($\beta = 0.334$, $t = 12.224$, $p < 0.001$). This finding implies that effective synchronization of employee responsibilities, workflow, resource allocation, and organizational processes enhances operational efficiency and overall business performance. SMEs that coordinate activities effectively are more capable of minimizing duplication of effort, reducing operational delays, and responding promptly to customer demands. This result is consistent with the findings of Vuong (2025), who reported that coordinated organizational processes significantly improved organizational creativity and financial performance among Vietnamese SMEs.

Similarly, Agustin et al. (2026) found that coordinated organizational capabilities and strategic agility significantly enhance SME performance under dynamic and competitive business conditions. The current finding reinforces the importance of coordination as a critical managerial capability that strengthens operational effectiveness and improves organizational performance among SMEs in North Central Nigeria.

Furthermore, the findings indicate that conflict resolution strategies positively and significantly influence the sustainability of SMEs ($\beta = 0.476$, $t = 5.855$, $p < 0.001$). This result suggests that SMEs that manage workplace conflicts constructively are more likely to strengthen employee commitment, improve teamwork, foster trust, and sustain long-term organizational performance. Effective conflict resolution creates a supportive organizational climate that encourages open communication, mutual respect, and collective responsibility, thereby enhancing organizational resilience and employee satisfaction. This finding is consistent with Ojiaku (2025), who found that integrating and collaborative conflict resolution strategies significantly improved employee performance among Nigerian SMEs, whereas avoidance and dominating strategies adversely affected performance. The result also aligns with Keelson et al. (2024), who concluded that organizations characterized by strong internal management practices and positive employee relationships achieved higher organizational performance and sustained competitiveness. Consequently, the present finding confirms that effective conflict resolution is an indispensable component of teamwork management that contributes significantly to the sustainability and long-term success of SMEs in North Central Nigeria.

The findings of this study provide strong empirical support for Organizational Behavior Theory, which posits that employee attitudes, interpersonal relationships, communication patterns, and group dynamics are fundamental determinants of organizational effectiveness (Mayo, 1933;

Lewin, 1947; Robbins & Judge, 2017). The theory argues that organizations achieve superior performance when employees operate within a supportive environment characterized by collaboration, effective coordination, mutual trust, and constructive conflict management. The positive and statistically significant effects of collaboration, coordination, and conflict resolution observed in this study validate these theoretical assumptions. Within the context of SMEs in North Central Nigeria, effective teamwork management strengthens team cohesion, improves employee behaviour, enhances operational efficiency, and promotes sustainable organizational performance. Therefore, the findings affirm the explanatory relevance of Organizational Behavior Theory in understanding how teamwork management influences the performance of SMEs and provide empirical evidence that investments in collaborative work practices, coordinated organizational processes, and effective conflict management constitute important strategic mechanisms for enhancing SME competitiveness and sustainability.

Conclusion

This study concludes that teamwork management significantly enhances the performance of Small and Medium Enterprises (SMEs) in North Central Nigeria, with collaboration exerting the strongest influence, followed by conflict resolution strategies and coordination. SMEs that institutionalize these teamwork practices are better positioned to improve productivity, operational efficiency, innovation, and long-term sustainability.

The findings further affirm the relevance of Organizational Behavior Theory by demonstrating that effective collaboration, coordination, and conflict resolution strengthen employee relationships, organizational effectiveness, and sustainable competitive performance. Consequently, teamwork management should be recognized as a strategic organizational capability for

improving the performance and sustainability of SMEs in North Central Nigeria.

Recommendations

- i. SME owners and managers in North Central Nigeria should institutionalize collaborative work practices that promote employee participation, knowledge sharing, and joint decision-making to enhance organizational performance and competitiveness.
- ii. SME managers should strengthen coordination through clear role definition, effective workflow management, and structured monitoring systems to improve operational efficiency and resource utilization.
- iii. SME owners and managers should implement proactive and collaborative conflict resolution mechanisms that foster trust, open communication, and teamwork to enhance employee commitment and ensure the long-term sustainability of their enterprises.

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Dynamic Effects of Government Capital Expenditure and Domestic Private Investment on Employment Generation in Nigeria

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Abstract

The study explored the dynamic effects of government capital expenditure and domestic private investment on employment generation from 1986 to 2023. The objectives of the study were to examine the effects of changes in government capital expenditure and domestic private investment on employment both in the short-run and long-run. Obtaining time-series data and estimating with the ARDL technique, it was found that government capital expenditure and domestic private investment exerted positive effects on employment both in the short-run and long-run, suggesting that both variables have immediate and long-lasting effects in Nigeria. Real GDP was also found to have effect on employment while interest rate and inflation exerted negative effects. The study recommended more budgetary allocation for capital projects to promote ease of doing business and expand productive capacity, expansion of credit and low interest loans to entrepreneurs and SMEs, and targeting for inflation and stabilization of interest rates for stable macroeconomic environment.

Keywords: *Government capital expenditure; Domestic private investment; Employment; Inflation targeting; Interest rate stabilization.*

Introduction

Employment generation has been a fundamental macroeconomic necessity antagonizing the Nigerian economy. Nigeria, despite being recognized as the largest economy in Africa given her level of gross domestic product, continues to evidence deeply troubling labour market outcomes. From the National Bureau of Statistics (NBS), unemployment rate of 5.3% in the first quarter of 2024 was reported, as youth unemployment rate stood at 8.4% within the ages of 15-25 years, while that of the classified proportion of Not in Education,

Employment or Training (NEET) is 14.4% (NBS, 2024). To worsen this is the increasing informal employment rate, which is approximately 92%. This implies that majority of Nigerian population are grossly engaged in low-productivity and precarious economical activities (NBS, 2023). These figures simply highlight the structural fragility of the Nigerian labour market and how cogent it is to understand the fiscal and investment determinants of employment generation.

Government capital expenditure from theoretical view point, stimulates

employment via two broad means. The first is that jobs are created directly in public works, construction, and related sectors in the economy. The second is via complementarity hypothesis, where investment in public infrastructure lowers production costs, crowds in private investment and stimulate additional employment across the larger economy (Aschauer, 1989). But on the contrary, crowding-out hypothesis argues that expansionary public spending, however, competes strongly with private investment particularly for loanable funds, stimulates interest rates, and suppresses activity of the private sector and creation of job (Friedman, 1978). In Nigeria, this theoretical vagueness is compelling, from the raising experience of Nigerian fiscal deficits, public debt and factually low capital budget implementation processes. The actual relationship between domestic private investment and employment is however, questioned.

The domestic private investment and employment nexus is equally contested. Private investment, which constitutes as primary driver of job creation, has been constrained in Nigeria given increasingly infrastructural deficits, foreign exchange volatility, policy inconsistency and as well as higher lending rates (Afolabi & Raifu, 2025). Edet et al. (2024) and Ukoh and Nwaoha (2024) among other extant studies have examined the growth effects of capital expenditure, while others equally explored the relationship between fiscal deficit and private investment (Jato & Nwankwo, 2024). Most studies, however, focus on output implications of fiscal policy with relatively scanty attention to the direct and dynamic employment consequences of government capital expenditure and domestic private investment as variables modelled jointly and the estimation frameworks apply mostly are unable to capture temporal dynamics and feedback effects.

These gaps identified are addressed in this study by exploring the dynamic effects of government capital expenditure and domestic private investment on employment generation in Nigeria, using a dynamic time

series approach that is capable of capturing both the short-run impulse responses and long-run equilibrium adjustments within empirical context of Nigeria.

Literature Review

Theoretical Foundations

The government capital expenditure, domestic private investment and employment generation nexus is multifaceted and has been explained by several economic theories that are complementary and competing.

Keynesian Theory of Public Expenditure and Employment

This study is rooted primarily in the Keynesian macroeconomic theoretical framework, which is known as the John Maynard Keynes (1936) in the analysis of *The General Theory of Employment, Interest and Money*. The classical assumptions were challenged by Keynes that markets are self-correcting and that full employment equilibrium is the natural state of an economy, but Keynes argued that economies can experience prolonged periods of underemployment equilibrium given the presence of aggregate demand deficit.

The Keynesian fundamental theory is that government expenditure serves as a powerful instrument that stimulates economic activities and promote employment. Increasing insufficiency in the private sector demands to absorb productive capacity, fiscal intervention can bridge the gap through rounds of successive government spending leading to fiscal multiplier effect by raising output and employment ultimately. From the Nigerian experience, the private sector has been constrained by increasing infrastructure deficits, weak institutional frameworks, and restricted access to credit. Government capital expenditure on power, roads, health and education assumes significance particularly, creating jobs directly while stimulating the productive environment for private enterprise. The post-Keynesian further argued that aggregate demand as influenced by significant fiscal policy will determines labour employment. This

perspective is relevant for Nigeria, a situation where surplus labour is more abundant and demand-side constraints are binding.

The Crowding-In and Crowding-Out Hypothesis

The traditional crowding-in hypothesis holds that government borrowing stimulates the increase in the level of interest rates, which affect the availability of credit to the investors in the private sector and reduces the level of net employment effect of public expenditure. Crowding-in hypothesis from the literature is however, mostly supported theoretically and empirically in developing economies. Strong argument from Aschauer (1989) and Blejer and Khan (1984) support the fact that productive government capital expenditure improves the additional productivity of private capital, enhancing rather than displacing private investment. This implies that government decision to invest on roads construction, electricity infrastructure, and telecommunications, will reduce the costs of business, improve market access and increase expected returns on private investment, which leads to the expansion of private sector activity and employment level.

The challenge of infrastructural deficit in Nigeria brings about the plausibility of the crowding-in effect, since the costs of the provision of infrastructure is borne by the private firms. The expansion of capital expenditure as a means to address these gaps brings about reduction in operation costs, increases profitability and encourages capacity growth, that stimulates labour demand. In this study, crowding-in hypothesis is adopted as the theoretical basis for the expected complementary nexus between government capital expenditure and domestic private investment, while noting that the direction of the crowding effect depends strongly on the nature the expenditure, conditions of the financial market, and the monetization of fiscal deficit.

The Accelerator Theory of Investment

The accelerator theory of investment following the work of Clark (1917), which was later reshaped by Samuelson (1939) and Hicks (1950), argues that private investment is determined by changes in aggregate demand. When there is expansion of aggregate demand, existing stock of capital becomes insufficient for the firms and firms undertake new investment in order to expand productive capacity and generate additional labour demand. In line with this study, accelerator theory is linked based on the fact that government capital spending promotes aggregate demand and improves national output, bringing about increasing demand to private investors and stimulating investment expansion with consequent employment effects. The dynamic accelerator model, which emphasis on the adjustment of costs and gradual capital stock is relevant particularly the uncertain nature of Nigeria's investment environment and it is also consistent with the distributed lag structure of the autoregressive distributed lag (ARDL) framework adopted in this study.

Endogenous Growth Theory

Romer (1986), Lucas (1988), and Barro (1990) who pioneered the endogenous growth model suggests that within an economic system, long-run growth and employment are determined. Government spending was incorporated into the model of production function by Barro as a complement to private capital, which shows that productive public expenditure raises the marginal product of private capital and sustains long-run growth, leading to continuous increase in labour demand beyond the Keynesian short-run demand-side effects. Endogenous growth model further highlights on human capital accumulation, which is stimulated through government expenditure on education and health leading to labour force quality and productivity. Romer and Lucas who respectively emphasis on increasing return and on human capital externalities noted that private investment in knowledge-intensive sectors stimulates

positive spillovers that generate new employments beyond its direct effects.

Synthesis and Theoretical Model

The theoretical models so far reviewed are complementary and mutually supporting. The four models are operating through two major interrelated channels, which are direct effect and indirect dynamic effect.

Channel One: Direct Effect

This channel expresses the fact that capital government expenditure is linked to aggregate demand, which stimulate output and employment. This is in line with Keynesian theory.

Channel Two: Indirect Dynamic Effect

This channel also expresses that capital government expenditure brings about increase in infrastructure, which leads to the growth of private investment, productive capacity and employment. This is in consonance with Crowding-In, Accelerator and Endogenous growth theories.

Combining these four models, the two channels suggest that the effect of capital government expenditure on employment exhibit both direct and indirect, short-run and long-run and demand-side and supply side effects. The dynamic nature of these channels justifies the adoption of ARDL bounds testing approach to capture dynamism of the short-run and long-run nexus between government capital expenditure, domestic private investment and employment generation in Nigeria.

Empirical Literature

Government Capital Expenditure and Employment Generation

The empirical connection between government expenditure and employment have been examined by a number of studies, with most finding showing consistency with the Keynesian fiscal multiplier framework, although with great regards concerning the composition of spending, efficiency and financing.

Aschauer (1989) found that in the United States that output elasticity was about 0.39 to non-military spending on critical infrastructures, suggestive of significant effects on productivity and employment. Nevertheless, the study's outcome attracted criticisms from Tatom (1991) and Evans and Karras (1994) on the ground that study suffered omitted variable bias and estimates obtained were spurious which are core violations of econometric analysis. This study addressed this shortcoming by employing the ARDL bounds testing technique.

Nurudeen and Usman (2010) examined the relationship between capital expenditure and economic growth with annual data from 1970 to 2008 in Nigeria and found that capital expenditure significantly enhanced economic growth while recurrent expenditure showed a negative effect. Although this study emphasis was on growth, not directly on employment, the findings obtained are relevant based on theoretical connection with the accelerator principle.

Critically, the study did not incorporate private investment as a transmission variable, which is a gap this study seeks to address. Also, Aigheyisi (2013) examined the connection between capital expenditure and growth using the ARDL approach and revealed that capital expenditure exerted positive but insignificant effect in the short-run while it has positive and statistically significant effect in the long-run. This finding is ascribed to negligible short-run outcome due to lags in implementation, padding of budget, systemic poor project execution and misuse of public funds. Recent evidence reinforces these findings, mainly in the sub-Saharan Africa context. In Guinea, Aboubacar and Xu (2017), examined the connection between government expenditure and economic growth and found that the effect of capital expenditure was stronger on growth in the long-run than recurrent expenditure. This finding corroborates the endogenous growth model.

In Nigeria, Muritala and Taiwo (2011) also found that capital expenditure has positive

influence on output growth, employing institutional inefficiencies in budget execution as moderating variable. This was further demonstrated by Ogbole, Amadi, and Essi (2011) during the periods of structural reforms where capital expenditure was found to exhibit more significant effect on growth, indicating that that nexus between the fiscal variable and employment was significantly moderated by the institutional and policy environment. This a perspective that aggregate economic studies may not fully account for.

Concerning the contribution of growth to employment intensity in Nigeria, Ajakaiye et al. (2016) found that “jobless growth” between 2000 and 2014 because growth was mainly driven by the oil sector. They noted that Capital expenditure on agriculture, manufacturing, and small and medium enterprise development exhibited substantial employment intensity, underscoring heterogeneity in the sectors of the economy that aggregate time-series study cannot fully account for and thus the need for future research efforts.

Domestic Private Investment and Employment Generation

In Nigeria, Adelowokan (2012) explored the relationship between investment and employment from 1970 to 2010 using the ARDL technique and discovered that a 10 percent increase in investment triggered about 4.3 percent increase in employment, suggesting that gross fixed capital formation promoted employment in the long-run. The study found short-run relationship to be insignificant, which is traceable to structural challenge associated with Nigeria’s oil sector capital-intensiveness that aggregate investment cannot sufficiently capture.

Employing the Johansen cointegration technique, Ugochukwu and Chinyere (2013) found that domestic private investment had positive and statistically significant effect on GDP growth rate than foreign direct investment in Nigeria. This suggest that local entrepreneurs generated more employment per unit of investment than foreign investors

since local investors are more integrated into local labour markets and supply chains. This is the distinction that this study clearly spelt out by drawing distinctions between domestic and foreign investment both in theory and policy. In corroboration with this, Anyanwu (2014) found in a study in the African context that foreign investments employ few labour because their production functions are usually capital intensive as against the domestic investment that employ larger share of labour force traceable to labour-intensive production function.

Bakare (2011) employed OLS technique and found that gross capital formation significantly reduced unemployment, spanning 1980 to 2009 in Nigeria. This finding is consistent with the theoretical expectation that investment improves capacity to produce and job creation ability. However, the reliability of estimates obtained were limited by the use of OLS as estimation technique due to its inability to address endogeneity problem between investment and employment. Thus, the study addresses this by employing ARDL technique, which accounts for dynamic feedback relationships among variables.

Utilising vector autoregressive approach, Nwosu and Okafor (2014) further broadened investigation by accessing private investment-employment nexus in Nigeria between 1985 to 2012 and found that domestic private investment significantly promoted employment in the manufacturing and services sectors. The impulse response function disclosed that employment gradually and persistently responded to employment shocks, which align with the flexible accelerator model.

On the whole, there are evidence to institutional constraints militating employment generation. As noted by Ugwu (2008) and Okonjo-Iweala and Osafo-Kwaako (2007), implementation of the budgetary allocation on capital items was below 60 percent on the average from 1999 to 2007, with adverse effect on the capacity of public spending to generate meaningful employment, manifesting in the forms of

corruption, abandonment of projects, capital budget misallocations, presenting a key gap expectations from theory and fiscal outcomes observed in Nigeria.

Methodology and Model Specification

A major shortfall associated with the Johansen and Juselius (1990) cointegration approach is that it cannot be used when there is just one cointegrating vector. Therefore, regardless of whether the underlying variables are $I(0)$, $I(1)$, or a combination of both, it is essential to employ the Autoregressive Distributed Lag (ARDL) approach to cointegration or bound technique for a long-run connection, as presented by Pesaran

and Shin (1995) and Pesaran et al (1996b). The ARDL approach to cointegration (Bound Test) provides accurate and effective estimates in this scenario.

However, the ARDL suffers limitations such as lag selection sensitivity, small sample bias, structural breaks and limited applications with $I(2)$ variables, over-parameterization risks in case of too many lags and potential for spurious regression if the cointegration status of variables is not verified. This study addresses these limitations by carrying preliminary tests, robustness and stability tests and found that the ARDL can yield estimates that are consistent, stable and fit for inference making.

Model Specification

Drawing the theoretical foundation, the model for the study is thus specified.

$$EMP = f(CAXP, DPINV) \quad (3.1)$$

EMP = Employment

CAXP = Government Capital Expenditure

DPINV = Domestic Private Investment

Other macroeconomic variables such as real GDP, interest rate and inflation rate enter the function due to their bearings on employment generation. These variables serve as control variables in the function.

Thus, equation 3.1 yields:

$$EMP = f(CAXP, DPINV, RGDP, INT, INF) \quad (3.2)$$

RGDP = Real Gross Domestic Product

INT = Interest Rate

INF = Inflation Rate

From equation 3.2, the baseline function is specified below

$$EMP_t = C + Z_1 CAXP_t + Z_2 DPINV_t + Z_3 RGDP_t + Z_4 INT_t + Z_5 INF_t + \mu_t \quad (3.3)$$

Where:

All variables are previously defined

C is the intercept, $Z_1, \dots, Z_5$ are the coefficients

μ = Stochastic Term

t = Time (Assessment Periods); 1986-2023

From equation 3.3, the dynamic ARDL model is presented below

Short-Run and Long-Run Dynamics

The short-run and long-run effects are presented in the ARDL model below.

$$\begin{aligned} \Delta EMP_t = & c_0 + \sum_{j=1}^p (\alpha_j \Delta EMP_{t-j}) + \sum_{i=0}^m (\lambda_i \Delta CAXP_{t-i}) + \sum_{i=0}^n (\gamma_i \Delta DPINV_{t-i}) \\ & + \sum_{i=0}^f (x_i \Delta RGDP_{t-i}) + \sum_{i=0}^e (\hbar_i \Delta INT_{t-i}) + \sum_{i=0}^j (\check{j}_i \Delta INF_{t-i}) + Z_1 EMP_{t-1} \\ & + Z_2 CAXP_{t-1} + Z_3 DPINV_{t-1} + Z_4 RGDP_{t-1} + Z_5 INT_{t-1} \\ & + Z_6 INF_{t-1} + \mu_t \end{aligned} \quad (3.4)$$

Error-Correction Model

In order to combine the short-run dynamics with the long-run equilibrium relationship, the ARDL model is re-specified as an error correction model (ECM):

$$\begin{aligned} \Delta EMP_t = & \sum_{j=1}^p (\alpha_j \Delta EMP_{t-j}) + \sum_{i=0}^m (\lambda_i \Delta CAXP_{t-i}) + \sum_{i=0}^n (\gamma_i \Delta DPINV_{t-i}) \\ & + \sum_{i=0}^f (x_i \Delta RGDP_{t-i}) + \sum_{i=0}^e (h_i \Delta INT_{t-i}) + \sum_{i=0}^j (\check{\gamma}_i \Delta INF_{t-i}) \\ & + \psi ECT_{t-1} \end{aligned} \quad (3.5)$$

$Z_1, \dots, Z_5$ are the long-run coefficients, $\alpha_j, \lambda_i, \gamma_i, x_i, h_i, \check{\gamma}_i$ are representatives of short run coefficients, p, m, n, f, v, e, j and c capture the lags of variable in the dynamic model, Δ is the represents the difference operator, and ψ captures the speed of adjustment while μ represents the disturbance terms.

Table 3.1: A priori signs and data sources

Variables	A priori sign with EMP	Data Sources
EMP	(Dependent Variable)	Nigerian Bureau of Statistics
CAPEX	> 0	CBN Statistical Bulletin
DPINV	> 0	CBN Statistical Bulletin
RGDP	> 0	CBN Statistical Bulletin
INT	< 0	CBN Statistical Bulletin
INF	< 0	WDI Data

Source: Author's (2026)

Presentation of Results and Discussion

The presentation and analysis of empirical results include the preliminary tests, model estimation, post-estimation (diagnostics) tests.

The pre-estimation tests utilised in this study include the descriptive statistics, the unit root test, lag length selection and the autoregressive test for lag selection, the ARDL Bound Test for Cointegration.

Preliminary Tests

Descriptive Statistics

The descriptive statistics for the variables employed are presented in Table 5.1.

Table 5.1: Descriptive Statistics

Variables	Mean	Max.	Min.	Std. Dev.	Skew.	Kurt.	J-B	Prob.	Obs.
EMP _t	45.265	84.83	25.51	19.32	-0.02	2.28	0.80	0.66	38
CAXP _t	795.13	4,486.20	6.37	962.25	2.07	7.59	60.64	0.00	38
DPINV _t	12,865.10	84,561.30	108.87	19,813.18	2.24	7.39	62.64	0.00	38
RGDP	42,865	77,936	17,180	21,389	0.31	1.46	4.37	0.11	38
INT _t	13.84	26.00	6.00	3.77	0.66	4.66	7.21	0.02	38
INF _t	20.01	72.84	5.72	17.74	1.78	5.20	27.83	0.00	38

Source: Author's Computation (2026) from EViews 14

Table 4.1 shows that mean value are all non-zero. Average employment for the period was over 45 million people, with maximum and minimum of about 85 million and 26 million respectively. With the standard deviation of ₦19.32, employment exhibited considerable fluctuations linked to instability in macroeconomic environment. Capital expenditure showed averages of ₦795 and deviation of ₦795 billion respectively. The high deviation points to inconsistency in infrastructure spending. DPINV and RGDP exhibited averages of ₦12.68 trillion and ₦42.86 trillion and respective deviation of ₦21.38 trillion and ₦12.68. These deviations are reflection of instability in real growth and high volatility in capital formation of private sector. INT has mean of ₦20.00, and INF with mean of

about ₦14. Both variables exhibited high standard deviations which can affect firm's employment decisions. The distribution is positively skewed and leptokurtic, except for EMP and RGDP. The non-normality in distribution is confirmed by the J-B Statistic and P-values lower than 0.05. This reflects structural breaks and policy shocks in the system. Therefore, non-normality in distribution is corrected with log-transformation.

Unit Root Test

The determine the stationarity status of the variables involved two distinct stationarity tests: The Augmented Dickey Fuller (ADF) and Phillip-Perron (PP) Test Statistics. The outcomes from the unit roots tests are shown in Table 5.3

Table 4.2: ADF and PP Unit Test Results

Variable	ADF Statistic			PP Test		
	ADF t-Statistic	Prob*	Remark	Adj t-Statistic	Prob*	Remark
EMP _t	-4.559724*	0.0009	Stationary	-8.841854*	0.0000	Stationary
CAXP _t	-1.474704	0.5351	Not Stationary	-1.539527	0.5029	Not Stationary
D(CAXP _t)	-6.891725*	0.0000	Stationary	-6.831432*	0.0000	Stationary
DPINV _t	-1.251749	0.6413	Not Stationary	-1.132954	0.6923	Not Stationary
D(DPINV _t)	-4.740060*	0.005	Stationary	-4.817138*	0.0004	Stationary
RGDP	-3.870019*	0.0250	Stationary	-3.914061*	0.0003	Stationary
INT _t	-3.250917**	0.0248	Stationary	-3.304753**	0.0218	Stationary
INF _t	-2.914974***	0.0532	Stationary	-2.964096***	0.0478	Stationary

Source: Author's Computation (2026) from EViews 14

Note: Prefix D represents first differencing of variable, (*) (**) (***) indicate significance at the 1%, 5% and 10% levels of significance respectively. Prob* represents Mac Kinnon One-Sided P-values.

The examination of unit root was done using the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests. The results reveal a mixed order of integration among the series. Employment (EMP), RGDP, interest rate (INT) and inflation rate (INF) were stationary at levels, with test statistics significant at 1%, 5% and 10% respectively, indicating rejection of the null hypothesis of a unit root, thus integrated of order zero, I(0). Conversely, CAXP and DPINV were non-stationary at level but became stationary after first differencing at 1% and 5% respectively, indicating integration of order one, I(1), with

shocks having persistent long-run effects. The consistency of results across both tests strengthens reliability of the inference. =Overall, the mixture of I(0) and I(1) variables justifies adoption of the ARDL modelling framework, further necessitating a bounds cointegration test to determine whether a stable long-run equilibrium relationship exists among the variables.

Selection of Lag Length

The lag structure of the autoregressive estimator frequently affects a cointegration-based analysis

such as the ARDL. The lag selection test is employed to obtain the maximum lag that can

produce reliable and consistent estimates (Greene, 2011).

Table 4.3: Lag Length Selection Criteria

Lag Length	FPE	AIC	SC	HQ
0	3.887	4.187	4.542	4.310
1	0.391*	1.888*	4.626*	4.044*
2	0.415	1.942	2.836	2.096
3	0.434	1.982	2.471	2.151

Source: Author's Computation (2026) from EViews 14

Note: * indicates significant at 5 percent and acceptance of lag length.

Table 5.5 shows that lag length from lag order 0 to lag order 3. Given that every lag selection test identifies lag 1 as the ideal lag length, this suggests that a one-lag is the optimal lag for the ARDL estimation. Based on the FPE, AIC, SC,

and HQ criteria in the ARDL model, a lag structure of one period is chosen to reflect the structure that would provide more stable coefficient estimations.

ARDL Bound Test for Cointegration

The Bound test result is thus presented below in a tabular form.

Table 4.4: ARDL Bound Test for Cointegration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significant	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic K	24.70	10%	1.92	2.89
	5	5%	2.17	3.21
		1%	2.73	3.90

Source: Author's Computation (2026) from EViews 14

Note: k= number of explanatory variables.

Table 5.7 reveals the long run inter-relationship between variables employed in the study. This means that the ARDL bound test for cointegration test shows that variables are co-integrated owing to the fact that the F-statistic

value of about 25. This is highly statistically significant at 1% far higher than the upper bound I(I) critical values. Against this backdrop, it is sufficient to conclude that a long-run equilibrium relationship exists among the variables.

ARDL Results

The Autoregressive Distributed Lag Result is presented below

Table 4.5: ARDL Results

Dependent Variable: EMP

Long Run Relationship				
Variable	Coefficient	Std. Error	t-Statistics	Probability
CAXP _t	0.26	0.04	6.50	0.00
DPINV _t	0.57	0.08	7.12	0.00
RGDP _t	0.04	0.01	4.00	0.00
INT _t	-0.07	0.02	-3.50	0.00
INF _t	-0.03	0.01	-3.00	0.01
Short Run Relationship				
Variable	Coefficient	Std. Error	t-Statistic	Probability
D(EMP _t (-1))	0.48	0.08	6.00	0.00
D(CAXP _t (-1))	0.21	0.09	2.33	0.03
D(DPINV _t (-1))	0.37	0.12	3.08	0.00
D(RGDP _t (-1))	0.29	0.11	2.63	0.03
D(INT _t (-1))	-0.02	0.02	-1.00	0.32
D(INF _t (-1))	-0.03	0.02	-1.50	0.16
CointEq(-1)	-0.47	0.06	-7.83	0.00
R-squared	0.67	Mean depend var		20.02
Adjusted R-squared	0.62	S.D. dependent var		5.51
S.E. of regression	2.08	Akaike info criterion		6.18
Sum squared resid	21.58	Schwarz criterion		5.71
Log likelihood	-51.87	Hannan-Quinn criterion		5.77
F-statistic	27.33			
Prob (F-Statistics)	0.00			

Source: Author's Computation (2026) from EViews 14

Table 4.5 exhibits R^2 of 0.67, indicating that about 67% of the system variation in employment is captured by the independent variables. The F-statistic of 27.33 and corresponding P-value of 0.00 confirm that the overall model is effortlessly significant at 1% level.

In the short-run, capital government expenditure (CAXP) has a positive coefficient of 0.21 and T-value of 2.33, indicating that a one percent rise in capital expenditure generated employment by 0.21 percent at 5% significance level, corroborating outcome from Nurudeen and Usman (2010). DPINV has a positive short-run coefficient of 0.37 and T-statistic of 3.08, significant at 5%, indicating that domestic investment had short-run positive effect on employment. This is consistent with the Keynesian multiplier effect (Corchón, 2003). RGDP was positive and significant at 5%, while

INT and INF portrayed negative but statistically insignificant coefficients, suggesting that immediate effects of interest rate and inflation on employment are negligible.

In the long-run, CAXP has a positive coefficient of 0.26 and significant T-value of 6.50, indicating that it is significant driver of employment. This is consistent with Aboubacar and Xu (2017) and Ajakaiye et al. (2016). DPINV has a coefficient of 0.57 and T-statistic of 7.12, passing the significance test at 1% level. This suggests that employment is highly sensitive to cumulative changes in private capital formation (Ugochukwu and Chinyere, 2013). Interest rate and inflation were negative and significant, indicating that they adversely affected employment. This validates the hypothesis that both variables discourage firm production and labour demand. The cointegration coefficient of -0.47, significant at

1%, indicates a speed of adjustment of 47 percent toward long-run equilibrium following short-run disequilibrium.

Diagnostics Tests

For robustness and validity of estimates, the serial correlation and homoscedasticity tests were conducted.

Serial Correlation and Heteroskedasticity Results

Table 4.6: Serial correlation and Heteroscedasticity Tests

Tests	Statistics
Breusch-Godfrey Serial Correlation LM Test	1.64 (p = 0.21)
Breusch-Pagan-Godfrey Heteroskedasticity Test	1.02(p = 0.53)

Source: Authors' Computation (2026) from Eviews14

Table 5.9 shows the F-statistic of 1.64 and corresponding probability of 0.21. Since this probability value outweighs the significance level at 0.05 it can be said that the hypothesis the null hypothesis of no serial correlation in the residual is validated.

Stability Tests

The stability test utilised is the Cumulative Sum of Recursive Residuals (CUSUM). The CUSUM test is delayed below.

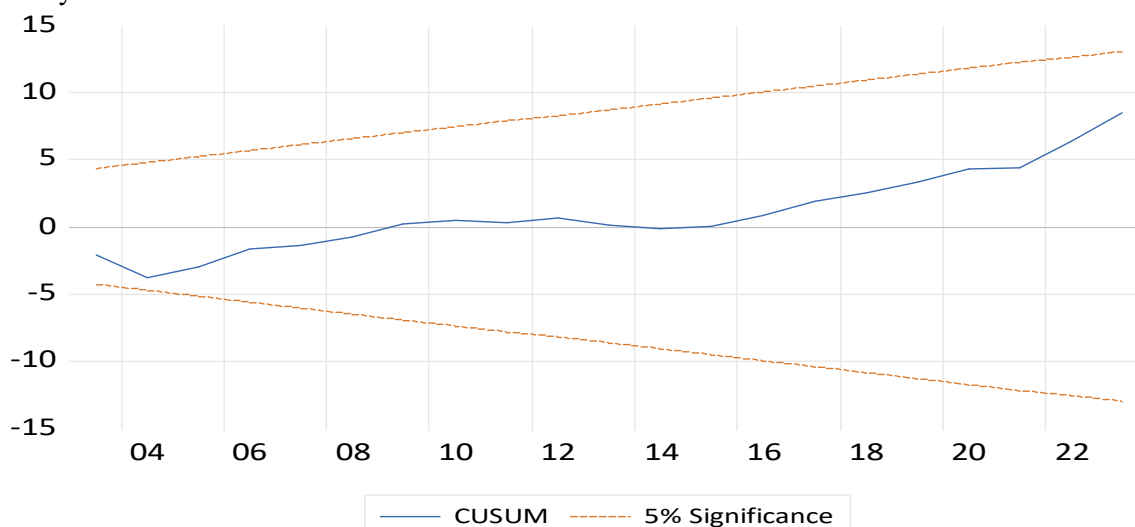


Figure 4.1: Structural Stability Test; Cumulative Sum of Recursive Residuals (CUSUM)

Source: Author's (2026) from EViews 14

Figure 4.1 exhibits the structural stability of short-run and long-run coefficients. It shows that the CUSUM plots passed the significant test at 5% since it lies within the critical boundaries. This indicates that the model is stable and policy prescriptions originating from estimates are reliable.

Conclusion and Policy Recommendations

This study employed the ARDL bounds tests approach and utilised annual time-series data from 1986 to 2023 to examine the dynamic effects of government capital expenditure and domestic private investment on employment generation in Nigeria. Findings revealed that

The Breusch-Pagan-Godfrey (B-P-G) Heteroskedasticity Test with F-statistic of 1.02 and tallying probability value of 0.53 shows the absence of heteroskedasticity. Therefore, the estimated model is deemed to be reliable and effective for long term prediction and analysis.

capital government expenditure and domestic investment exerted positive effects on employment generation both in the short-run and long-run, which corroborated the Keynesian theory of employment, crowd-in hypothesis and the endogenous theory. Also, real GDP was found to positively influence employment generation in both the short and long-run. Conversely, interest rate and inflation were found to have negative effect on employment, thus reflecting the labour absorption constraint imposed by both variables. The magnitude of speed of adjustment confirms the existence of long-run equilibrium relationship. Drawing from

the findings, the study recommends the allocation of more resources to capital projects and cut back excessive expenditures on recurrent items. This is to improve the ease of doing business and enhance employment capability of private firms. This study also calls for expansion of access to low-interest financing, grants, and entrepreneurial training for domestic firms, especially the small and medium-sized enterprises (SMEs). Emphasis on inflation targeting and interest rate stabilization by the CBN for stable macroeconomic environment.

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**Firms' Attributes and Earnings Persistence of Listed Industrial Goods Companies in Nigeria****OBIEKEA Ogechukwuka Precious¹, OKOLIE Augustine Oke², OKORO Godsdai Edesiri³**

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Publication Date: 2026/06/22**Abstract**

The study examined the relationship between firms' attributes and earnings persistence in listed Nigerian firms. The objectives of the study are to examine the financial growth and governance attributes of firms and their influence on the consistency in their earnings. The study employed the use of ex-post facto research design and the purposive sampling techniques, sourcing data via secondary means from published financials of listed firms in Nigeria. The data were analyzed using a combination of descriptive and inferential statistical tools, while the hypotheses were tested using the robust regression analysis. The findings revealed that financial leverage and financial growth rate have a significant negative impact on earnings persistence, while governance structure plays a more moderate role in enhancing earnings stability. The study recommended that firms should carefully manage their financial leverage to avoid excessive debt that can reduce earnings persistence. Companies are encouraged to balance their debt levels with equity financing to ensure financial stability and reduce the risk of financial distress. By maintaining a manageable debt load, firms can improve the predictability and sustainability of their earnings over the long term.

Keywords: *Firm attributes; Earnings persistence; Financial growth rate; Governance structure*

Introduction

The concept of earnings persistence is critical in evaluating the sustainability of a firm's financial performance over time. It refers to the ability of a company to maintain stable earnings across different periods, a key indicator of the quality and reliability of its financial reporting. In the context of industrial goods firms in Nigeria, the persistence of earnings is influenced by various firm-specific attributes such as size, age, leverage, liquidity, and profitability (Johnson et al., 2023). These attributes determine not only the financial health of a company but also the degree of its earnings management practices, which in turn affect

earnings persistence. According to Nangih and Wali (2022), firms with higher earnings persistence are better positioned to reflect true financial performance, which is crucial for attracting investors and ensuring long-term growth. This makes understanding the role of firm attributes in shaping earnings persistence particularly relevant for Nigerian listed firms, where accounting and governance structures can significantly influence financial outcomes.

In recent years, Nigerian companies have faced growing challenges related to corporate governance, regulatory changes, and economic volatility. Studies show that governance mechanisms, including board

composition, audit quality, and ownership concentration, play a significant role in determining the accuracy and persistence of reported earnings (Mohammed & Kurawa, 2021). As noted by Ibrahim et al. (2025), corporate governance practices, such as the presence of independent directors and quality audits, are essential in ensuring that earnings are not subject to manipulation, thus affecting their persistence. For instance, the influence of firm size and board attributes has been shown to significantly impact the ability of firms to manage their earnings in a manner that reflects their true economic performance (Araoye, 2025). Therefore, a thorough analysis of these factors within the Nigerian industrial goods sector is crucial for understanding how these elements contribute to earnings persistence. Another critical factor influencing earnings persistence is the use of accrual accounting. The manipulation of accrual estimates, including depreciation and tax estimates, has been linked to lower earnings persistence, particularly in the Nigerian context (Nangih & Wali, 2022). These accounting choices can distort the financial performance reflected in earnings reports, reducing the reliability of reported figures over time. As emphasized by Johnson et al. (2023), earnings quality, which is closely related to persistence, can be undermined by high levels of accrual-based earnings management, particularly in firms with weak internal controls and poor governance structures. As Nigerian companies face increasing pressure to improve financial transparency, the impact of such manipulations on earnings persistence remains a vital area of research.

Furthermore, institutional and financial factors such as leverage, liquidity, and firm growth have been identified as key determinants of earnings persistence. Research by Maigoshi and Tanko (2023) suggests that financial attributes like leverage significantly influence a firm's earnings quality, as highly leveraged firms may be more inclined to engage in earnings management to meet debt covenants. Similarly, liquidity can affect a firm's ability to sustain earnings without resorting to aggressive financial reporting practices. As shown by Onoyenure and Ebiaghan (2023),

firm growth is another attribute that can significantly impact the long-term sustainability of earnings, as rapidly expanding companies often face pressures to meet market expectations, which may lead to earnings smoothing or manipulation.

Given the above, this study analyzed the effect of attributes such as size, age, liquidity, and leverage on the earnings persistence of listed industrial goods companies in Nigeria. The findings of this study are expected to offer valuable insights into the financial practices of Nigerian firms, guiding policymakers, investors, and regulators in improving financial reporting standards and governance practices. By addressing the gap in the literature concerning the relationship between firm attributes and earnings persistence in Nigerian industrial goods firms, this study contributed significantly to the understanding of corporate performance in emerging markets.

Hypotheses of the Study

H₀₁: There is no significant effect of financial leverage on the earnings persistence of quoted firms in Nigeria;

H₀₂: There is no significant effect of financial growth rate on the earnings persistence of quoted firms in Nigeria;

H₀₃: There is no significant effect of governance structure on the earnings persistence of quoted firms in Nigeria.

Review of Related Literature

Earnings Persistence

Earnings persistence refers to the ability of a firm's earnings to remain stable and predictable over time, which is crucial for assessing the sustainability of its financial performance. In the context of Nigerian listed firms, earnings persistence is an essential factor that influences investment decisions and market perceptions. Studies have shown that the persistence of earnings in Nigerian firms, particularly banks, tends to be lower compared to their counterparts in more developed markets. For instance, a study found that despite reporting substantial profits, these earnings were not sustainable, as evidenced by the banks'

failure to maintain capital adequacy (Abogun et al., 2020). This lack of earnings persistence poses a risk to investors, who might be misled by high reported profits, but the underlying financial health remains weak. Therefore, understanding the factors that influence earnings persistence, such as financial leverage, growth rate, and governance structures, becomes crucial for both investors and regulators.

Further research indicates that firm attributes, including governance structure, also play a significant role in determining earnings persistence. A study by Orilonise et al. (2024) on Nigerian listed firms revealed that corporate structure directly impacts earnings persistence, with stronger governance structures leading to more consistent earnings over time. The study highlighted that board independence, audit committee effectiveness, and transparent reporting contribute to the long-term stability of earnings, suggesting that firms with robust governance structure are better positioned to sustain earnings over multiple periods. On the other hand, the earnings persistence of firms with weak governance structures is often compromised, as the potential for earnings manipulation increases. This finding is consistent with the broader literature on governance structure, where the quality of financial reporting and the oversight of boards are critical determinants of earnings reliability (Olaoye & Adewumi, 2020). Hence, Nigerian firms aiming to enhance earnings persistence must invest in improving governance practices.

Despite these insights, several gaps remain in understanding the factors driving earnings persistence in Nigerian firms, especially outside the financial sector. While some studies focus on banks and manufacturing companies, there is limited research addressing the industrial goods sector, which is pivotal to the Nigerian economy. A study by Nangih and Wali (2022) explored the role of accrual estimates on earnings persistence in Nigerian listed firms, showing that manipulations of estimates such as depreciation and taxes can distort earnings persistence. However, more sector-specific research is needed to fully understand the dynamics of earnings persistence across various industries in Nigeria. Additionally,

the impact of economic volatility and external market factors on the persistence of earnings remains an under-researched area. As the Nigerian market is prone to instability, further studies could investigate how macroeconomic factors influence the stability of earnings across different sectors. Overall, this study aims to fill these gaps by examining the relationship between firm attributes and earnings persistence across a broader spectrum of Nigerian firms.

Firms Attributes

Firm attributes are crucial in determining the operational efficiency, financial stability, and long-term success of listed firms. Key attributes such as firm size, ownership structure, financial leverage, and liquidity play a significant role in shaping the financial outcomes of Nigerian firms. For example, a study by Quadri et al. (2025) on non-financial firms found that foreign ownership, institutional ownership, and managerial ownership all positively impacted firm value. This suggests that firms with diversified ownership structures tend to exhibit greater financial robustness and higher valuation in the market. Additionally, the study highlights the importance of ownership concentration, indicating that firms with concentrated ownership may experience higher governance challenges, but can also enhance strategic decision-making processes (Quadri et al., 2025). Furthermore, research by Razaq et al. (2023) found that firm size and profitability were significantly associated with sustainability reporting, underlining the importance of firm-specific attributes in enhancing transparency and accountability in corporate disclosures. These findings demonstrate how firm attributes directly influence financial performance and sustainability practices among Nigerian firms.

In addition to ownership structure and size, other firm-specific characteristics such as audit quality and financial distress also significantly impact corporate governance and performance. Yusuf et al. (2022) observed that financial distress, surplus cash flows, and audit remuneration strongly affected the creative accounting practices of listed consumer firms in Nigeria. The study

further suggested that better management of surplus cash flows and audit expenses could enhance the financial reporting quality of Nigerian firms. Similarly, the work by Terkende and Karim (2023) on listed consumer goods companies demonstrated that financial leverage and firm size had significant effects on financial reporting timeliness. This highlights the importance of having a well-balanced capital structure to ensure timely and accurate financial reporting, which in turn enhances investor confidence. These studies collectively emphasize the significant role of firm attributes, such as governance mechanisms, financial stability, and audit quality, in driving performance outcomes and shaping the corporate landscape in Nigeria.

Financial Leverage and Earnings Persistence

Financial leverage plays a pivotal role in determining the financial stability and earnings persistence of listed Nigerian firms. Leverage, commonly referred to as the use of debt in a firm's capital structure, can either enhance returns or amplify risks, which ultimately influences the sustainability of earnings over time. A study by Nwanyanwu and Jonah (2023) on listed industrial goods firms in Nigeria highlighted that firms with higher financial leverage tend to experience higher volatility in their earnings, reducing earnings persistence. This volatility is primarily driven by the fixed nature of debt obligations, which pressure firms to generate consistent income to meet interest payments. The study found that while leverage can provide capital for growth, it also exposes firms to financial distress, especially in periods of economic downturns, affecting the stability and predictability of earnings. Additionally, Chukwuma et al. (2023) observed that in Nigerian consumer firms, excessive reliance on debt has been correlated with lower earnings persistence, as firms struggle to maintain consistent profits amidst high debt servicing costs. Therefore, the relationship between financial leverage and earnings persistence remains critical for understanding how leverage strategies affect long-term financial sustainability in Nigeria.

On the other hand, appropriate management of financial leverage can support long-term earnings stability if a firm uses debt strategically to fund productive investments without overburdening its capital structure. According to the study by Abogun et al. (2020), although Nigerian banks showed lower earnings persistence due to high leverage, firms that maintained optimal leverage ratios, balancing debt and equity, demonstrated more consistent earnings. This study found that leveraging debt to fund expansion, while keeping an eye on capital adequacy ratios, allowed firms to maintain earnings stability over time. In contrast, excessive debt levels without corresponding increases in revenue led to poor earnings persistence, as seen in several Nigerian banks. These findings underline the importance of leveraging debt judiciously to foster growth while preserving earnings consistency. Therefore, Nigerian firms must carefully manage their financial leverage to enhance earnings persistence, ensuring that debt financing contributes positively to financial performance without undermining long-term sustainability.

Financial Growth Rate and Earnings Persistence

The financial growth rate of listed firms in Nigeria is a critical determinant of earnings persistence, as it reflects the ability of firms to expand revenue and maintain sustainable performance. A study by Naburgi et al. (2025) on listed insurance firms in Nigeria suggests that high growth rates tend to be associated with increased earnings volatility, which can undermine the persistence of earnings. Firms experiencing rapid growth may prioritize short-term expansion over long-term stability, potentially leading to more inconsistent earnings patterns. Similarly, Shittu et al. (2023) explored the relationship between firm growth and earnings management in non-financial firms, revealing that firms with higher growth rates often engage in aggressive earnings management to meet market expectations. This behavior can negatively affect earnings persistence, as it masks the true financial performance of the firm. Therefore, while financial growth is essential for corporate success, it can simultaneously challenge the

sustainability of earnings, particularly in sectors where growth is driven by external factors such as market conditions or debt financing.

Conversely, firms that can effectively manage their growth while maintaining sound financial practices are likely to achieve higher earnings persistence. For instance, research by Johnson et al. (2023) on listed manufacturing firms in Nigeria indicated that firms with stable growth rates, characterized by consistent revenue increases and strategic investments, tend to exhibit more predictable and sustainable earnings. This finding underscores the importance of balancing growth with careful financial management to ensure that earnings growth translates into long-term stability. Furthermore, Tella et al. (2023) emphasized the role of financial strategies, such as reinvestment of profits and optimal capital structure, in supporting sustainable growth rates that contribute to earnings persistence. Thus, firms that focus on maintaining stable growth trajectories, supported by effective governance and financial planning, are better positioned to sustain earnings over time, benefiting both investors and the broader economy.

Governance Structure and Earnings Persistence

The governance structure of firms plays a crucial role in determining their financial performance and, by extension, the persistence of their earnings. Research on Nigerian firms indicates that robust governance structure such as independent boards, effective audit committees, and gender diversity on boards, significantly influence earnings persistence. For instance, a study by Orilonise et al. (2024) examined the effect of governance structure on earnings persistence of Nigerian listed firms and found that governance structures had a significant negative influence on earnings volatility. This suggests that firms with strong governance structure, such as independent directors and transparent internal controls, tend to exhibit more stable earnings over time. The study highlighted that independent boards and well-structured audit committees foster accountability and reduce managerial discretion, which is

crucial for ensuring that earnings reflect the true performance of the firm, thus enhancing earnings persistence. Similarly, Olaoye and Adewumi (2020) found that board independence and gender diversity positively affected earnings quality, further supporting the argument that governance structures are integral to ensuring long-term financial stability.

Moreover, a study by Oyebamiji (2021) highlighted the impact of ownership structure on the earnings quality of Nigerian financial firms. It was found that institutional ownership, which is often associated with stronger oversight, had a positive and significant effect on earnings quality. This, in turn, supports the persistence of earnings, as institutional investors are typically more active in monitoring management practices and ensuring that earnings are sustainable and not subject to manipulation. Conversely, ownership concentration was found to have a negative effect on earnings quality, as dominant shareholders may engage in earnings management to maximize their short-term interests. This relationship underscores the importance of governance structures not only in mitigating earnings manipulation but also in fostering the conditions necessary for earnings sustainability. Thus, improving governance practices, such as increasing board independence and institutional ownership, is essential for enhancing earnings persistence in Nigerian listed firms.

Theoretical Framework

The theoretical framework for this study on firms' attributes and earnings persistence is grounded in agency theory. Agency theory posits that there is a potential conflict of interest between shareholders and managers, as managers may act in their own self-interest rather than in the interest of the shareholders (Jensen & Meckling, 1976). In the context of earnings persistence, this theory is relevant because it explains how independent board, audit committees, and ownership structure, can mitigate the agency problem and reduce earnings manipulation, thereby enhancing the sustainability of reported earnings. A study by Orilonise et al. (2024) supports this, highlighting that board

independence and internal controls, directly affect the persistence of earnings in Nigerian firms. Agency Theory suggests that strong governance structure reduces the likelihood of earnings manipulation and increases the accuracy and stability of earnings reports, which is vital for investors making long-term decisions based on consistent financial data.

Furthermore, agency theory underscores the role of monitoring mechanisms in ensuring that managers' actions align with the long-term interests of shareholders. The theory emphasizes the importance of transparent financial reporting and the oversight of management decisions. As observed in the work of Agustina et al. (2021), firms' attributes such as governance structure, financial growth and financial leverage significantly influence earnings persistence by reducing managerial discretion and ensuring more accurate financial disclosures. Similarly, Oyebamiji (2021) showed that institutional ownership, which aligns shareholders' interests with firm performance, positively impacts earnings quality and persistence. This reinforces the notion that effective governance structures, as advocated by agency theory, ensure that financial reports reflect the true and sustainable performance of a firm, enhancing the reliability of earnings over time. Hence, the Agency Theory provides a robust framework for understanding how firms' attributes can influence earnings persistence by curbing managerial opportunism and ensuring that financial reporting remains consistent and reliable.

Empirical Studies

Quadri et al. (2025) examined the relationship between foreign and institutional ownership and managerial and firm value of non-financial firms. The findings indicated that foreign ownership, institutional ownership, and managerial ownership all positively impacted firm value. This suggests that firms with diversified ownership structures tend to exhibit greater financial robustness and higher valuation in the market. Additionally, the study highlights the importance of ownership concentration, indicating that firms with concentrated ownership may experience

higher governance challenges, but can also enhance strategic decision-making processes. Saputera, Wijaya, Ichsani and Kaulika (2024) aimed to identify the factors influencing earnings persistence in companies listed on the Financial Times Stock Exchange (FTSE) ASEAN Star during the 2021-2022 period. The sample consists of 30 companies, with three companies selected from each of Indonesia, Malaysia, Singapore, Thailand, and the Philippines. The study examines the impact of variables such as Accrual Reliability, Cash Flow Volatility, Sales Volatility, Firm Size, and Debt Level on earnings persistence. The findings reveal that Accrual Reliability, Cash Flow Volatility, Sales Volatility, and Firm Size have a partial effect on earnings persistence, while Leverage does not have a significant impact. Additionally, the simultaneous test results show that, collectively, Accrual Reliability, Cash Flow Volatility, Sales Volatility, Firm Size, and Debt Level significantly influence earnings persistence.

Orilonise, Segun, Dauda and Kasum (2024) investigated the impact of corporate governance on earnings persistence among Nigerian listed firms, utilizing an explanatory research design. The research focused on a sample of 51 companies listed from 2002 to 2021, selected using a census sampling technique. Secondary data was collected from the audited annual reports of these firms and analyzed using a dynamic panel regression model. The findings indicate that (i) previous year earnings significantly influence current year earnings, (ii) corporate governance has a significant negative impact on earnings, and (iii) current year earnings are significantly affected by the interaction between corporate governance and past year earnings. Based on these results, the study recommends that Nigerian listed firms should enhance their governance structures by appointing independent directors to their boards, establishing robust internal control systems, and aligning executive compensation with long-term performance objectives.

Terkende and Karim (2023) explored the impact of firm attributes on the financial reporting timeliness of listed consumer

goods companies in Nigeria from 2017 to 2021. The study focuses on the entire population of consumer goods firms listed on the Nigerian Exchange Group (NGX) during this period. Secondary data was collected from the annual reports of the sampled firms, and the Generalized Least Squares (GLS) regression technique was employed to analyze the data and test the hypotheses. The results of the regression analysis indicate that firm size and financial leverage have a negative and significant effect on financial reporting timeliness. Based on these findings, the study recommends that listed consumer goods firms should focus on increasing their size, as this could lead to faster publication of their financial reports.

Shittu, Alagbe, Oke and Fadipe (2023) investigated the impact of Earnings Management (EM) on the performance of Non-Financial Listed Firms (NFLF) in Nigeria. EM is measured using Discretionary Accruals (DA) and Real Earnings Management (REM), based on the models proposed by Raman and Shahrur (2008) and Roychowdhury (2006), respectively, with firm performance assessed through Return on Capital Employed (ROCE). A purposive sampling technique was used to select 76 NFLFs, from a total of 113 as of December 31, 2020, that had the required secondary data for the study covering the period from 2010 to 2020. The data were analyzed using the Generalized Method of Moments (GMM) estimator and Dumitrescu and Hurlin's panel causality test. The findings indicate that DA has a positive and significant effect on ROCE, while REM negatively and significantly affects ROCE. Additionally, ROCE was found to Granger cause both DA and REM. The study concludes that EM significantly influences the performance of NFLFs in Nigeria, and also finds that firm size and firm age positively impact the performance of these firms.

Johnson, Uwah and Udoh (2023) examined the relationship between firm attributes and earnings predictability of quoted manufacturing companies in Nigeria. The population consisted of all listed manufacturing firms in Nigeria for the year ending 2021. Using purposive sampling, 12

manufacturing firms were selected that were continuously listed and actively traded on the Nigerian Exchange Group (NXG) Ltd. between 2017 and 2021, and whose financial statements were consistently available and submitted to NXG during the study period. The ex post facto research design was adopted to analyse the effect of firm attributes—such as firm size, age, leverage, and liquidity—on earnings predictability, measured by operational cash flows as a percentage of total assets. Panel regression analysis, using the pooled ordinary least squares method, was employed to analyse the data. The results revealed that firm age, size, leverage, and liquidity all have weak effects on earnings predictability.

Chukwuma, Emeka and Nnamani (2023) examined the impact of earnings persistence, financial leverage, and foreign ownership on company reputation and value. Using multiple regression models, secondary data from the annual reports of consumer firms listed on the Nigerian Stock Exchange for the period 2012-2021 were analyzed. The findings reveal that earnings before interest and tax (EBIT) and market capitalization (MCAP) are positively correlated, but the relationship is not statistically significant. Additionally, while market capitalization shows a positive but insignificant sensitivity to asset tangibility, it significantly affects financial leverage. The study also finds a perfect correlation between asset tangibility, financial leverage, and the natural logarithm of total assets, indicating multicollinearity. The results suggest that EBIT and MCAP are useful for predicting the movement of financial leverage, EBIT, and foreign ownership, but caution should be taken regarding the multicollinearity issue when interpreting the findings.

Razaq, Alhassan and Ame (2023) investigated the effect of corporate attributes on sustainability reporting among listed non-financial firms in Nigeria. Corporate attributes were measured using firm characteristics (firm size, profitability, leverage, liquidity), board characteristics (board size, board independence, board gender diversity, board financial expertise), and ownership characteristics (foreign ownership, managerial ownership,

institutional ownership, ownership concentration). Sustainability reporting was assessed based on sustainability disclosures in line with the Global Reporting Initiative (GRI) standards. The study adopted an ex-post facto research design and used secondary data from the annual reports of 116 non-financial firms listed on the Nigerian Exchange Group (NGX) as of December 31, 2020, with a sample size of 51 firms covering the period from 2011 to 2020. The data were analyzed using a multiple regression panel model with the E-view 10 statistical tool. The results from the random effect regression indicate that profitability, liquidity, leverage, institutional ownership, firm size, foreign ownership, board size, and board financial expertise all have a positive and significant effect on sustainability reporting.

Tella, Olaleye, Olorunsola, Babatunde and Akanbi (2023) examined the period from 2010 to 2022 to assess how different types of financing—equity, debt, and retained earnings—affected asset growth opportunities for production-based businesses in Nigeria. Using panel regression analysis on data collected from the financial statements of 15 production-based companies, the study found that total equity had a positive and statistically significant impact on the asset growth rate. In contrast, total debt and retained earnings had a negative and insignificant effect on asset growth. The findings suggest that external financing, particularly equity, is more effective in accelerating asset expansion for Nigerian production-based companies compared to internal financing through retained earnings.

A study by Nangih and Wali (2022) explored the role of accrual estimates on earnings persistence in Nigerian listed firms, showing that manipulations of estimates such as depreciation and taxes can distort earnings persistence. However, more sector-specific research is needed to fully understand the dynamics of earnings persistence across various industries in Nigeria. Additionally, the impact of economic volatility and external market factors on the persistence of earnings remains an under-researched area. As the Nigerian market is prone to instability,

further studies could investigate how macroeconomic factors influence the stability of earnings across different sectors. Overall, this study aims to fill these gaps by examining the relationship between firm attributes and earnings persistence across a broader spectrum of Nigerian firms.

The work by Terkende and Karim (2023) on listed consumer goods companies demonstrated that financial leverage and firm size had significant effects on financial reporting timeliness. This highlights the importance of having a well-balanced capital structure to ensure timely and accurate financial reporting, which in turn enhances investor confidence. These studies collectively emphasize the significant role of firm attributes, such as governance mechanisms, financial stability, and audit quality, in driving performance outcomes and shaping the corporate landscape in Nigeria. Yusuf et al. (2022) observed that financial distress, surplus cash flows, and audit remuneration strongly affected the creative accounting practices of listed consumer firms in Nigeria. The study further suggested that better management of surplus cash flows and audit expenses could enhance the financial reporting quality of Nigerian firms.

Sabila, Evana and Septiyanti (2021) aimed to provide empirical evidence on the impact of operating cash flow, leverage, and firm size on earnings persistence. The study uses historical secondary data obtained from website, focusing on companies listed in the food and beverage sector of the Indonesia Stock Exchange (IDX) between 2015 and 2019. A purposive sampling method was employed, selecting a sample of 33 companies. The findings indicate that both operating cash flow and firm size have a positive effect on earnings persistence, while leverage does not have a significant impact on earnings persistence.

Abogun, Olaniyi, Ijaiya and Fagbemi (2020) examined the earnings persistence of Nigerian listed banks. An explanatory research design was employed, with data collected from secondary sources, specifically the financial statements of Nigerian quoted banks. The study analyzed all fifteen (15) quoted deposit money banks, which constitute the entire population, over

an eleven-year period from 2005 to 2015. The Generalized Method of Moments (GMM) dynamic panel estimation technique was used for data analysis. The findings reveal that the earnings of Nigerian listed banks are less persistent, meaning they are less sustainable over time. Based on these results, the study recommends that investors should exercise caution by focusing less on reported earnings and instead assess the sustainability of earnings to make informed investment decisions and avoid potential risks.

Olaoye and Adewumi (2020) examined the impact of corporate governance on earnings quality in listed firms in Nigeria. Specifically, it aims to investigate how board size, board independence, and board gender diversity affect earnings quality. The study uses secondary data, sourced from the corporate annual reports of the sampled companies, and employs panel regression analysis on a sample of 37 listed manufacturing companies for the period 2011-2017. The findings reveal that board size, board independence, and board gender diversity significantly impact earnings quality. Additionally, the study shows that corporate governance variables are highly sensitive to the specific measure of earnings quality used. Based on these findings, the study recommends a comprehensive evaluation of the corporate governance systems of companies to enhance earnings quality.

Methodology

This study adopted an *ex-post facto* research design, which is commonly used to examine the relationships between variables where the researcher has no control over the independent variables. In this design, data were collected from past events or conditions to assess their effect on the dependent variables. The *ex-post facto* design allowed the study to analyze existing data from the financial statements of listed firms over a specified period, providing insights into the effect of integrated reporting on firm performance without manipulating the variables. This approach is particularly useful for evaluating causal relationships in situations where controlled experiments are not feasible.

The study population comprises of non-financial firms that are listed on the Nigerian Exchange Group (NGX). Specifically, the population includes all non-financial companies that are publicly traded, which ensures that the firms in question are subject to regulatory oversight and financial transparency requirements. The focus on listed nonfinancial firms is crucial because these companies are required to disclose detailed financial reports and adhere to strict corporate governance standards, providing a robust dataset for analysis. By concentrating on this sector, the study aims to capture the dynamics of firms that have access to capital markets and are involved in large-scale production processes, thus reflecting the broader landscape in Nigeria. This study adopted the purposive sampling technique to determine the sample size, addressing potential issues with missing data and ensuring that reliable and valid data are collected. Specific criteria were established to guide the inclusion of companies in the study sample:

- The company must be listed on the Nigerian Exchange Group (NGX).
- The company must be in operation throughout the study period.
- The company must have consistently published annual reports during the study period, providing a complete data set for all relevant variables.

Only firms meeting these criteria will be selected for inclusion in the sample. As a result, the study will focus on a sample of 70 listed companies on the NGX, ensuring the data is comprehensive and applicable for the study.

The empirical model for this study is based on the firms' attributes and earnings persistence of listed firms in Nigeria; the model was adopted from the empirical works of Saputera, et al (2024); Orilonise, et al (2024) with a modification by introducing governance structure and financial growth rate in the current model of study. The statistical tests of hypotheses were based on the following models which were developed

in line with the specific objectives and hypotheses.

Earnings Persistence = $f(\text{Firms' Attributes})$

$$\text{ERP}_{it} = a_0 + a_1\text{FINL}_{it} + a_2\text{FGR}_{it} + a_3\text{GST}_{it} + \mu_{it}$$

FINL = Financial leverage is measured as the debt-to-equity ratio of the company.

FGR = Financial growth rate is measured the market to book value ratio of the company.

GST = Governance structure is measured the percentage of the board member who are independent directors to the company.

ERP = Earnings persistence is calculated using the discretionary accruals.

This study employed a combination of descriptive and inferential statistics to analyse the data and test the hypotheses. The inferential statistical techniques utilized in this study include correlation analysis, which examines the relationship between variables; the Variance Inflation Factors (VIF) test, used to assess multicollinearity among the independent variables; the Hausman test, which helps in selecting between fixed or random effects models; the Breusch-Pagan LM test, used to detect the presence of random effects; and Ordinary Least Squares (OLS) regression, employed to estimate the relationships between variables and test the hypotheses. These statistical methods were carefully selected to ensure robust and reliable results in analysing the data and drawing meaningful conclusions about the relationships between the variables under investigation. A-priori expectation is that the firms' attributes will significantly influence earnings persistence.

Results

Table 1: Summary of Descriptive Statistics

Variable	Mean	Std.	Min	Max	Skewness	Kurtosis
ERP	0.5101	3.1721	0.000	54.8446	14.8571	232.2689

FINL	-2.6485	115.6195	-312.3057	202.9019	-26.2673	708.4827
FGR	-0.2769	53.1554	-117.619	103.9037	-19.2908	393.9769
GST	67.5299	14.7557	16.6667	94.4444	-0.5633	3.0678

Source: Researchers' Computation, 2026.

The table presents the descriptive statistics for the variables used in the study, where Earnings Persistence (ERP) is the dependent variable, and Financial Leverage (FINL), Financial Growth Rate (FGR), and Governance Structure (GST) are the independent variables. The mean of ERP is 0.5101, indicating that, on average, earnings persistence for the sample firms is slightly positive. However, the standard deviation (Std.) of 3.1721 suggests significant variability in earnings persistence, with values ranging widely between a minimum of 0 and a maximum of 54.8446. The skewness of 14.8571 and kurtosis of 232.2689 indicate that the distribution of ERP is highly skewed to the right, meaning there are a few extreme observations (outliers) significantly higher than most values. This implies that while most firms have lower earnings persistence, a small number of firms exhibit extremely high persistence, which significantly affects the overall distribution.

For the independent variables, Financial Leverage (FINL) has a mean of -2.6485, indicating that, on average, the firms in the sample have negative financial leverage, though the standard deviation of 115.6195 indicates high variability in the data. The minimum value of -3123.057 and the maximum of 202.9019 suggest a wide range of leverage levels across firms, including extreme negative and positive values. The skewness of -26.2673 indicates a significant leftward skew, meaning that most firms have low to negative leverage, with a few firms showing extremely high leverage. Financial Growth Rate (FGR) has a mean of -0.2769, indicating that, on average, the firms are experiencing negative growth.

The standard deviation of 53.1554, with a minimum of -1176.19 and a maximum of 103.9037, also points to large variation in financial growth among the firms. The negative skewness of -19.2908 suggests that most firms have low growth, with a small number of firms showing very high growth. Lastly, Governance Structure (GST) has a mean of 67.5299 and a standard deviation of

14.7557, reflecting moderate variation in governance structures across firms. The values range from 16.6667 to 94.4444, with a skewness of -0.5633 and kurtosis of 3.0678, indicating that the distribution of governance structures is relatively symmetric and moderately peaked, with most firms showing a governance structure closer to the mean.

Table 2 Result of Correlation Analysis

Variable	ERP	FINL	FGR	GST
ERP	1.0000			
FINL	-0.0144	1.0000		
FGR	-0.0181	0.6298	1.0000	
GST	-0.0934	-0.0316	-0.0206	1.0000

Source: Researchers' Computation, 2026.

The correlation analysis reveals the relationships between Earnings Persistence (ERP) and the independent variables: Financial Leverage (FINL), Financial Growth Rate (FGR), and Governance Structure (GST). There is a very weak negative correlation between ERP and FINL (-0.0144), indicating that financial leverage has almost no linear relationship with earnings persistence. Similarly, the correlation between ERP and FGR is also very weak and negative (-0.0181), suggesting that financial growth rate does not significantly affect earnings persistence in the sample firms.

The relationship between ERP and GST is slightly stronger but still weakly negative (-0.0934), indicating that governance structure has a marginal negative association with earnings persistence. Among the independent variables, FGR and FINL are positively correlated (0.6298), implying a moderate positive relationship between financial growth and financial leverage. GST has very weak correlations with the other variables, indicating that governance structure does not strongly interact with financial leverage or growth in the sample.

Table 3: Variance Inflation Factor (VIF) Test

Variable	VIF	1/VIF
FINL	1.66	0.603012
FGR	1.66	0.603359
GST	1.00	0.999001
Mean VIF		1.44

Source: Researchers' Computation, 2026.

The Variance Inflation Factor (VIF) test results suggest that there is no significant multicollinearity among the variables in the model. The VIF values for Financial Leverage (FINL) and Financial Growth Rate (FGR) are both 1.66, which is well below the commonly accepted threshold of 5 or 10, indicating that these variables do not exhibit high multicollinearity with each other. The

VIF for Governance Structure (GST) is 1.00, which suggests that it is perfectly independent of the other variables. The mean VIF of 1.44 further confirms that, overall, the model does not suffer from multicollinearity, allowing for reliable estimation of the regression coefficients without significant inflation of standard errors.

Table 4: Breusch Pagan Test

Breusch Pagan Cooke/Weisberg Test for Heteroskedasticity	Chi2(1) = 548.19; Prob>chi2= 0.0000

Source: Researchers' Computation, 2026.

The Breusch-Pagan test for heteroskedasticity indicates the presence of heteroskedasticity in the data, as evidenced by the Chi-squared statistic (Chi2) of 548.19 and a p-value of 0.0000. Since the p-value is significantly less than the common significance level of 0.05, we reject the null hypothesis of homoskedasticity, suggesting that the variance of the error terms is not constant across observations. Heteroskedasticity can lead to inefficient

estimates and biased standard errors, which may affect the reliability of hypothesis tests. Given this issue, robust regression is suitable for the study as it adjusts for heteroskedasticity by providing consistent standard errors, ensuring more reliable coefficient estimates and valid statistical inferences. Robust regression methods, such as the use of heteroskedasticity-consistent standard errors, are particularly useful when the assumption of constant variance is violated, as it is in this case.

Table 5: Results of Model I and Test of Hypothesis I

Dependent Variable: Earnings Persistence (ERP)					
Variable	Symbols	Coefficient	Std. Err.	t-stat.	p-value
Financial Leverage	FINL	-0.00051	0.00005	-10.18	0.000
Constant	_cons	0.16364	0.00581	28.18	0.000
Prob > F					0.0000
F (1, 749)					103.72

Source: Researchers' Computation, 2026.

The results presented in Table 5 show the regression analysis for the relationship between Financial Leverage (FINL) and Earnings Persistence (ERP) in Nigerian quoted firms. The coefficient for financial leverage is -0.00051, indicating a very small but negative relationship between financial leverage and earnings persistence. This suggests that as financial leverage increases, earnings persistence slightly decreases. The standard error of 0.00005 is relatively small, indicating the coefficient estimate is precise. The t-statistic of -10.18 is highly significant, and the p-value of 0.000 confirms that the

relationship is statistically significant at any conventional significance level (e.g., 0.01, 0.05, or 0.10).

The F-statistic of 103.72 with a p-value of 0.0000 suggests that the overall model is highly significant, meaning that the independent variable (financial leverage) significantly explains the variation in earnings persistence. Given these findings, the null hypothesis (H_{01}) is rejected, indicating that financial leverage has a significant negative effect on the earnings persistence of quoted firms in Nigeria.

Table 6: Results of Model II and Test of Hypothesis II

Dependent Variable: Earnings Persistence (ERP)					
Variable	Symbols	Coefficient	Std. Err.	t-stat.	p-value
Financial Growth Rate	FGR	-0.00093	0.00010	-8.62	0.000
Constant	_cons	0.16375	0.00573	28.56	0.000
Prob > F					0.0000
F (1, 749)					74.35

Source: Researchers' Computation, 2026.

The regression results in Table 4.6 assess the relationship between Financial Growth Rate (FGR) and Earnings Persistence (ERP)

for Nigerian quoted firms. The coefficient for financial growth rate is -0.00093, indicating a negative relationship between

financial growth rate and earnings persistence. This suggests that as a firm's financial growth rate increases, its earnings persistence tends to decrease, although the effect is small. The standard error of 0.00010 reflects a precise estimate of the coefficient.

The t-statistic of -8.62 is highly significant, and the p-value of 0.000 confirms that the effect of financial growth rate on earnings persistence is statistically significant at the

1% level. Additionally, the F-statistic of 74.35, with a p-value of 0.0000, indicates that the overall model is highly significant, meaning that the financial growth rate is an important predictor of earnings persistence in the model. Based on these results, the null hypothesis (H_{02}) is rejected, implying that financial growth rate has a significant negative effect on earnings persistence in quoted firms in Nigeria.

Table 7: Results of Model III and Test of Hypothesis III

Dependent Variable: Earnings Persistence (ERP)					
Variable	Symbols	Coefficient	Std. Err.	t-stat.	p-value
Governance Structure	GST	0.00074	0.00039	1.90	0.058
Constant	_cons	0.11010	0.02707	4.07	0.000
Prob > F					0.0583
F (1, 749)					3.60

Source: Researchers' Computation, 2026.

The regression results presented in Table 4.7 explore the relationship between Governance Structure (GST) and Earnings Persistence (ERP) for Nigerian quoted firms. The coefficient for governance structure is 0.00074, indicating a positive but small relationship between governance structure and earnings persistence. This suggests that improvements in governance structure slightly enhance earnings persistence. The standard error of 0.00039 reflects a relatively precise estimate. The t-statistic of 1.90 is significant at the 10% level (with a p-value of 0.058), which is marginally above the conventional 5% significance threshold.

The p-value of 0.0583 indicates that the effect of governance structure on earnings persistence is weakly significant, suggesting a borderline relationship between these two variables. The F-statistic of 3.60, with a p-value of 0.0583, further supports the finding that the overall model is significant, but the strength of this relationship is somewhat limited. Given these results, the null hypothesis (H_{03}) is only weakly rejected, indicating that while there is some positive effect of governance structure on earnings persistence, it is not strong enough to be considered highly significant at traditional levels (e.g., 0.05).

Discussion

The findings of the study reveal significant relationships between the variables of interest (financial leverage, financial growth rate, and governance structure) and earnings persistence (ERP) in Nigerian quoted firms. The negative relationship between Financial Leverage (FINL) and earnings persistence aligns with prior studies that suggest that higher leverage can lead to reduced earnings sustainability. Specifically, Setiana and Hadianito (2023) found that financial leverage negatively impacts earnings persistence in Indonesian firms, corroborating the findings from Nigerian firms, where high debt levels tend to increase financial volatility, making earnings less predictable and stable. Similarly, Tang (2021) found that leverage was negatively associated with earnings predictability, which further supports the negative correlation observed in this study. The results suggest that as Nigerian firms rely more on debt financing, they may experience higher costs of debt servicing, leading to less persistent earnings over time. For Financial Growth Rate (FGR), the study also identifies a negative relationship with earnings persistence, indicating that firms with high growth rates tend to have less stable earnings. This result is consistent with Saputera et al. (2024), who found that while growth is crucial for business expansion, it

can also introduce volatility in earnings, making it harder to sustain earnings over time. Furthermore, Sabila et al. (2021) found that high growth firms often engage in earnings management practices to meet expectations, which undermines the persistence of reported earnings. These findings suggest that growth, while generally positive for a firm's financial performance, may have adverse effects on earnings persistence, especially if growth is driven by aggressive business expansion or external factors beyond the firm's control.

The relationship between Governance Structure (GST) and earnings persistence in the Nigerian context is somewhat weaker but still significant. The positive but weak effect observed in this study supports the notion that strong governance structures, such as independent boards and effective audit committees, can enhance the accuracy and stability of earnings, though the effect is not as pronounced as the effects of leverage and growth. Orilonise et al. (2024) highlighted that governance structures significantly impact earnings persistence by reducing managerial discretion and promoting transparency, which aligns with the findings of this study. However, Jao et al. (2020) and Sabila et al. (2021) found that the impact of governance on earnings persistence is often indirect and may be influenced by other factors like ownership structure and the presence of external monitoring, which may explain the relatively weaker effect observed in this study.

Conclusion and Recommendations

This study investigated the effect of financial leverage, financial growth rate, and governance structure on the earnings persistence of quoted firms in Nigeria. The findings reveal that financial leverage and financial growth rate both have significant negative effects on earnings persistence. Firms with higher leverage and those experiencing higher growth rates tend to exhibit more volatile earnings, reducing the sustainability and predictability of their financial performance. These results are consistent with global studies that suggest high debt levels increase financial risk, while rapid growth can lead to earnings

management practices that undermine the reliability of reported earnings. Specifically, the study highlights that leveraging debt and pursuing aggressive growth strategies, without careful management, can compromise the long-term stability of earnings, ultimately affecting the confidence of investors and other stakeholders in the firm's financial sustainability.

In contrast, governance structure has a positive but weak effect on earnings persistence, suggesting that while strong governance mechanisms, such as independent boards and effective audit committees, do contribute to the stability of earnings, their impact is less pronounced compared to financial leverage and growth. The findings imply that corporate governance practices, although crucial, may not be the sole determinant of earnings persistence, especially in an environment where financial leverage and growth dynamics dominate. This study underscores the importance of managing both financial leverage and growth strategically, ensuring that firms are not overly dependent on debt or excessively focused on short-term growth. For policymakers and regulators, the study recommends reinforcing governance practices while promoting financial prudence among firms to ensure the long-term sustainability of earnings and financial stability in Nigerian listed companies. On the basis of the findings, the following recommendations were given:

- (i) **Strategic Management of Financial Leverage:** Firms should carefully manage their financial leverage to avoid excessive debt that can reduce earnings persistence. Companies are encouraged to balance their debt levels with equity financing to ensure financial stability and reduce the risk of financial distress. By maintaining a manageable debt load, firms can improve the predictability and sustainability of their earnings over the long term.
- (ii) **Sustainable Growth Strategies:** The study highlights that rapid financial growth may introduce volatility in earnings. Firms should focus on sustainable growth strategies that prioritize long-term stability over

short-term expansion. This can be achieved through careful planning, reinvestment of profits, and organic growth, rather than relying on aggressive or external growth strategies that might compromise earnings persistence.

- (iii) **Strengthening Governance Structures:** While governance structures have a positive effect on earnings persistence, their impact is relatively moderate. Therefore, firms should invest in strengthening their corporate governance practices, including improving board independence, enhancing the effectiveness of audit committees, and ensuring transparent financial reporting. This will foster greater trust among investors and contribute to the long-term stability of earnings.

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Human Capital Efficiency and Firm Value: An Empirical Study of Listed Manufacturing Firms in Nigeria

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Abstract

This paper investigated the effect of human capital efficiency on firm value of listed manufacturing firms in Nigeria. Human capital has increasingly been recognized as strategic asset for firm sustainability and competitive advantage in a knowledge economy. Despite the rise in investment in employee development, empirical evidence remains contradictory regarding the relationship between human capital efficiency and market valuation in emerging markets. This study uses an ex-post facto research design to investigate the relationship using panel data extracted from the annual reports and financial statements of 44 listed manufacturing firms in Nigerian Stock Exchange (NGX) for 2015-2024. The indicators used for measuring human capital efficiency were earnings per employee (EPE), value added per employee (VAE) and human capital return on investment (HCROI) respectively and the indicators of firm value include Tobin's Q. Descriptive statistical, correlation analysis, diagnostic tests, Levin-Lin-Chu unit root tests and Panel-Corrected Standard Error (PCSE) regression were used in the analysis. The results show that none of the measures of human capital efficiency, namely earnings per employee, value added per employee and human capital return on investment, has a statistically significant impact on firm value. This imply that even though human capital efficiency has impact on operating performance but not on market value of listed manufacturing firms in Nigeria. Based on the finding that market value creation is the interplay between other complementary organizational resources, such as innovation ability, technological advancement, structural capital and strategic management practice. In conclusion, the findings advise the manufacturing firms to combine employee efficiency in workforce with technology innovation, organization innovation and transformation to create share value for the owners. Keywords: human capital efficiency, firm value, Tobin's Q, manufacturing sector, Nigeria, intellectual capital

Introduction

The value of a firm today is derived significantly from the contribution of human capital in our knowledge-based economy. Human Capital Efficiency (HCE), one component of intellectual capital (Sulaiman, Olamide & Adeyemo, 2021) signifies the

firm's ability to transform employees' capabilities into high-value output. Given the intense competitive environment and rapid technological advancement in the manufacturing industry, effective management of human capital would lead to

significant operational and financial efficiency.

The manufacturing industry, a bedrock of Nigeria's economy has been hampered by under-utilization of resources, low efficiency, and low value-added products (Anosa 2021). It is acknowledged by researchers that not only tangible resources like physical and financial capital impact positively on firms' performance and value, but also the quality and productivity of human capital (Odogu & Obalakumo, 2023). In the face of this revelation, understanding human capital efficiency's impact on value of listed manufacturing firms in Nigeria would be of immense benefit.

Empirical evidence supports the positive influence of human capital efficiency on the organization's performance and competitiveness. Thus Odogu & Obalakumo (2023) found a strong positive impact of human capital efficiency on financial performance of listed manufacturing firms in Nigeria and therefore suggested that firms need to invest more in employee training and development. Similarly, Anosa (2021) proposed that effective human capital leads to more productivity and innovation in the manufacturing sector.

These results were buttressed by Nneji, Amahalu and Ndubuisi-Okolo (2024) who reported that the efficiency of the intellectual capital where human capital is a critical variable has a significant positive effect on the financial performance of listed manufacturing firms. This finding aligns with the Resource Based View of the firm which advocates that intangible resources are source of sustainable competitive advantage in firm if they are effectively exploited.

Moreover, Okoye and Emeneka (2021) linked human capital efficiency with an

increase in the Economic Value Added (EVA), suggesting that more efficient human capital generates economic value beyond profit. Also Agbomah & Aniefor (2020) argued that the role of human capital is often underestimated and neglected in conventional financial accounting systems and therefore recommended for human capital accounting system in order to capture the value of human capital properly. Even with this increase in awareness, measurement of human capital remain a challenge. While Egolum (2021) stress the need for a systematic assessment of human capital efficiency in all industries, Sulaiman, Olamide and Adeyemo (2021) proposed integration of human capital efficiency indicators in the governance structure of organizations and management decision making.

Some previous research indicate that the efficiency of human capital utilization by firms has a significant impact on firm's performance outcome and firm value (Nneji, Amahalu, & Ndubuisi-Okolo, 2024).

In measuring human capital efficiency three key variables were chosen as surrogates: Earnings per employee (EPE), Value added per employee (VAE) and Human Capital Return on Investment (HCROI). These variables measure income efficiency, value efficiency and financial return on human capital investment, respectively.

Considering the views mentioned above, this study seeks to identify the influence of human capital efficiency on value of listed manufacturing firms in Nigeria, with the objective to add to the existing literature in a way that would enable improved organizational performance and value creation.

Problem Statement

In recent years, the strategic importance of human capital has gained attention worldwide as a major driver of firm performance and value. However, in Nigeria, the manufacturing sector is constrained by an underdeveloped, underutilized resource, low productivity, and intensely competitive environment in which efficient employment of human capital still remains a key concern.

The literature has revealed that investment in, and effective management of, human capital results in a better performance and value of organizations (Odogu & Obalakumo, 2023; Anosa, 2021); nonetheless many listed manufacturing firms in Nigeria are focusing their resources primarily on physical and financial capital while neglecting human capital.

While studies on intellectual capital such as those carried out by Odogu & Obalakumo (2023), Ndubuisi-Okolo (2024), Egolum (2021) has examined the impact on firm performance, only few studies on human capital efficiency (HCE) have actually evaluated the role it play in determining the value of the firms. In addition, there is dearth of literature on Human Capital Return on Investment (HCROI) in relation to the value of listed manufacturing firms in Nigeria (Tobin's Q) (Nneji, Amahalu, & Ndubuisi-Okolo, 2024; Okoye & Emeneka, 2021). There is still no consensus and concrete empirical evidence to prove the extent of HCE impact on firm value in Nigeria manufacturing industry using proxy variables of Earnings per employee, Value added per employee and Human Capital Return on Investment. Therefore the questions that arises are; do manufacturing firms in Nigeria utilized their human capital efficiently? And Does human capital efficiency increase market value?

This study endeavors to fill this gap by examining the influence of Human Capital Efficiency on firm value of listed manufacturing firms in Nigeria, for the policy makers, investors and management of corporations, with a view to improving organization's performance and sustained competitiveness.

Study Questions

I. How does human capital efficiency as proxied by earnings per employee influence the market value of listed manufacturing firms in Nigeria?

Ii. What is the influence of human capital efficiency as proxied by value added per employee on the value of listed manufacturing firms in Nigeria?

iii. What is the influence of human capital efficiency as proxied by human capital return on investment on the value of listed manufacturing firms in Nigeria?

1.4 Research Objectives

The primary objective of this study was to investigate the effect of Human Capital Efficiency on the market value of listed manufacturing firms in Nigeria.

The specific objectives of the study are as follows:

- i. To investigate the effect of Earnings Per Employee on Value of listed manufacturing firms in Nigeria
- ii. To Evaluate the effect of Value added per employee on Value of listed manufacturing firms in Nigeria
- iii. To examine the effect of Human Capital Return on Investment on value of listed manufacturing firms in Nigeria.

Research Hypotheses The study tested the following hypotheses stated in the null form:

Ho1: Earnings Per Employee (EPE) has no significant effect on the market Value of Listed Manufacturing Firms in Nigeria.

Ho2: Value Added Per Employee (VAE) has no significant effect on the market Value of Listed Manufacturing Firms in Nigeria.

Ho3: Human Capital Return on Investment (HCROI) has no significant effect on the market Value of Listed Manufacturing Firms in Nigeria.

Scope of the Study

The research focuses on 44 manufacturing firms listed on the Nigerian Exchange Group (NGX) from 2015 to 2024. It examines HCE using EPE, VAE, and HCROI as proxies and measures firm value via Tobin's Q. The study concentrates solely on the manufacturing sector to maintain analytical focus and draws data exclusively from publicly available annual reports.

Empirical Review

Many empirical research papers were conducted during the past years to test the relationship between Human Capital Efficiency (HCE) and firm performance measures like profitability, productivity, market valuation etc. And most of the findings are consistent that HCE does matter regardless of sector and contexts of countries particularly in Nigeria.

However most of them did not specifically test the relationship between HCE and firm value using Tobin's Q as a measure and a market-based one, in a manufacturing industry. In this research, we make a novel contribution by empirically test the effect of human capital efficiency proxied by Earnings Per Employee, Value Added Per

Employee and HCROI on market value measured by Tobin's Q of manufacturing firms listed on the Nigeria stock market from 2015-2024.

Research Gap

Despite a growing interest among researchers in the impact of Human Capital Efficiency (HCE) on firm performance, there exist a gap in terms of methodology and scope in Nigeria. Most prior researches tested HCE's impact on the accounting based measures of firm performance such as Return on Asset (ROA) and Earnings per Share (EPS) (e.g. Ezeagba, 2016; Anosa, 2021; Agbomah & Aniefor, 2020) and ignored market-based firm valuation measures like Tobin's Q, which reflects better the investor perception and long-run firm value. Secondly, while previous researchers had used individual measure such as earnings per employee (EPE) or value added per employee (VAE) to measure HCE (Odogu & Obalakumo, 2023; Okoye & Emeneka, 2021) few studied had been conducted to consider Human Capital Return on Investment (HCROI) as another measure to capture the financial return generated on the spending for human capital. Further the studies were widely conducted for other sectors rather than manufacturing sector, such as banking, insurance and oil and gas sector (Enekwe, Udeh & Akpan, 2023; Alade & Olayiwola, 2021). Based on researcher's knowledge few studies had tested simultaneously EPE, VAE and HCROI on the market value (Tobin's Q) over 10 years data. This study aims to bridge this gap and examine the combined impact of EPE, VAE and HCROI on firm value using Tobin's Q for manufacturing listed firms on Nigerian stock market from 2015-2024.

Methodology

Research Design

$$FV_{it} = \beta_0 + \beta_1 EPE_{it} + \beta_2 VAE_{it} + \beta_3 HCROI_{it} + \beta_4 FSIZE_{it} + \varepsilon_{it}$$

Where:

FV = Firm Value (proxied by Tobin's Q)

EPE = Earnings per Employee

VAE = Value Added per Employee

HCROI = Human Capital Return on Investment

This research study applied an ex-post facto research design methodology. Ex-post facto is appropriate in this case because the researcher makes no manipulation or intervention, but is studying pre-existing secondary data. The design allows researchers to examine casual relationships in natural settings, such as market performance data derived from publicly listed firms on the Nigeria Stock Exchange.

Population of the Study

The population under study consist of all 44 manufacturing listed companies on the Nigeria Stock Exchange Group as at 31 st December, 2024. This includes firms listed in the industrial sector and consumer goods sectors that have been consistently traded for the study period of 10 years (2015-2024).

Sample Size and Sampling Technique

The sample consists of all 44 manufacturing listed firms that have data on all the variables that would be included in the study for the entire study period (2015-2024). Firm with missing data or inconsistent reporting are excluded. Thus, 44 Manufacturing Listed Companies in Nigeria Stock Exchange Group as at 31 st December, 2024 was used as the sample for the study.

Sources and Method of Data Collection

The data for this study are secondary data which were collected from annual reports and financial statement of the sample firms.

Model Specification

This study aims to examine the impact of human capital efficiency on firm value. The study adapts the Value Added Intellectual Coefficient (VAIC) framework developed by Pulic (2000) and modification the model for the purpose of measuring the impact of human capital efficiency variables. The adapted model is specified as:

FSIZE = Firm Size

i = firm index

t = time (year)

β_0 = constant

$\beta_1 - \beta_3$ = coefficients of the independent variables

ε = error term

Method of Data Analysis

The study employed descriptive statistics (mean, standard deviation, minimum and maximum values) to summarize the characteristics of the data. The inferential

analysis was conducted using panel regression techniques. Other diagnostic tests such as multicollinearity, heteroskedasticity, and serial correlation was also be conducted to validate the robustness of the model.

4.0 Analysis And Discussion Of Results

Table 4.1 Descriptive Statistics Analysis and Discussion

Summary of Descriptive for TOBINSQ EPE VAPEREMPL HCROI FSIZE

VARIABLES	OBS	MEAN	STD. DEV	MIN	MAX
TOBINSQ	440	.9358636	1.473686	.001	18.692
EPE	440	4249.106	34180.13	-274752.8	276347.3
VAPEREMPL	440	15901.8	66842.84	-189310.8	725322.5
HCROI	440	28919.79	88084.18	-182558.4	732233.5
FSIZE	440	16.59313	2.178038	12.064	22.094

Source: Regression Output, 2025.

Table 4.1 shows the descriptive statistics for the variables used to explain the impact of HCE on firm value of listed manufacturing firms in Nigeria. It represents firm-year observations (440) on five variables: Tobin's Q (firm value), Earnings Per Employee (EPE), Value Added Per Employee (VAPEREMPL), Human Capital Return on Investment (HCROI), and Firm Size (FSIZE).

As seen in the Table, Tobin's Q, the measure of firm value, has a mean of 0.94, a standard deviation of 1.47, minimum of 0.001 and maximum of 18.69. Tobin's Q for firms of market value is relatively lower with an average of 0.94 while a few firms are relatively better with a very high market value. Many of the firms are valued below their replacement cost, indicated by Q values close to zero. This may imply that listed manufacturing firms are relatively under-valued in the stock market.

The mean EPE is 4,249.11 but shows a huge standard deviation of 34,180.13, the minimum value is -274,752.8 and maximum is 276,347.3. The huge difference implies heterogeneity in the distribution of EPE. Negative values are typical of loss-making firms where the loss is accounted for at the employee level, and high values imply large

positive profits, hence there are variations in the level of efficiency and human capital return on a per-employee level.

Similarly, VAPEREMPL has a mean of 15,901.8, with a large standard deviation of 66,842.84, minimum of -189,310.8, and maximum of 725,322.5. Again there is a wide range in value added per employee among the listed manufacturing firms; high negative and positive values illustrate disparities among firms in their ability to create value through their workforce. This may relate to differences in technology usage and productivity among firms in Nigeria.

HCROI has a mean value of 28,919.79, standard deviation of 88,084.18, minimum value of -182,558.4 and maximum value of 732,233.5. This also shows that there is large variations in the returns generated from human capital investment in the sample of firms, indicating that some firms utilize the investment made in human capital far better than others.

For FSIZE, with mean of 16.59, and a smaller standard deviation of 2.18 (natural logarithm of total assets), the minimum and maximum values are 12.06 and 22.09. This variable is relatively less volatile than the other variables used in the regression model,

implying a somewhat consistent distribution of sizes of listed manufacturing firms. On the whole, the descriptive statistics confirm that there is a high level of variability in the measures of human capital efficiency. Given the wide range and

significant outliers in these measures of human capital, these statistics will guide the empirical investigation of how these different aspects of HCE influence firm value.

Normality Test

Table 4. 2: Shapiro-Wilk W test for normal data for TOBINSQ, EPE, VAPEREMPL, HCROI and FSIZE

VARIABLES	OBS	W	V	Z	PROB>Z
TOBINSQ	440	0.52409	142.705	11.856	0.00000
EPE	440	0.54133	137.536	11.768	0.00000
VAPEREMPL	440	0.35418	193.654	12.586	0.00000
HCROI	440	0.41158	176.441	12.363	0.00000
FSIZE	440	0.98379	4.860	3.778	0.00008

Source: Regression Output, 2025.

For all the variables used in the analysis, tests were run to determine the normal distribution of the data. Table 4.2 shows the Shapiro-Wilk W test which assesses the null hypothesis of normality. When the probability (Prob > Z) is less than 0.05 then there is a deviation from normality. The results illustrate that Tobins' Q had a W statistic of 0.52409 with a p-value of 0.0000 which demonstrates high non-normality. EPE had a W statistic of 0.54133 with a p-value of 0.0000 whereas VAPEREMPL (W statistic 0.35418) and HCROI (W statistic 0.41158) had equally low W statistics and p-values of 0.0000. This indicates that human capital efficiency variables as well as firm value show strong non-normality due to the occurrence of extreme values or skewed distributions apparent from the descriptive

statistics. The FSIZE variable was found to have a higher W statistic 0.98379 with a p-value of 0.00008 which was found to be more normal than all the other variables although still below 1 and therefore it is statistically significant and does not represent a normal distribution perfectly.

In conclusion the Shapiro-Wilk test proves that there are non-normal distributions for all the variables used in this study. This is a relatively common occurrence when analysing accounting and financial data especially at firm level which tends to produce more variability and potentially outliers than any other sample. This therefore shows that if parametric methods are to be used they will need some transformation (e.g. Log) or non-parametric tests will have to be applied.

Correlation Analysis

Table 4.3: Summary of Spearman Correlation Matrix for TOBINSQ EPE VAPEREMPL HCROI FSIZE, stats(rho p) star(0.05)

	TOBINSQ	EPE	VAPEREMPL	HCROI	FSIZE
TOBINSQ	1.0000				
EPE	-0.1509*	1.0000			
	0.0015				
VAPEREMPL	-0.1343*	0.6389*	1.0000		
	0.0048	0.0000			
HCROI	-0.0939*	0.5641*	0.8803*	1.0000	
	0.0489	0.0000	0.0000		
FSIZE	-0.2923*	0.3240*	0.4770*	0.4038*	1.0000
	0.0000	0.0000	0.0000	0.0000	

Source: Regression Output, 2025.

The Spearman correlation of the various human capital efficiency measures and firm size in relation to firm value (Tobin's Q) is depicted in Table 4.3. This non-parametric method was employed since the variables do not follow normal distribution.

The Tobin's Q is found to be negatively related with all measures of human capital efficiency and size of the firm. The value of correlation coefficient with EPE, VAPEREMPL and HCROI are -0.1509 ($p=0.0015$), -0.1343 ($p=0.0048$), and -0.0939 ($p=0.0489$) respectively, though significant, the correlation are relatively weak. It implies that the higher is the earning, value added or human capital return per employee, the lower is the market valuation. The negative relationship indicates that firms with high per employee returns are not sufficiently rewarded by the market in terms of market valuation. It is possible that there are other aspects which influence firm value, although other factor affect the market value. Similarly the value

of correlation coefficient between Q and FSIZE is -0.2923 ($p < 0.001$), which implies larger firm is undervalued. This might be because larger companies, being mature, have poor capacity to scale or grow and are perceived negatively by the market.

There exist high correlations between all the human capital measures, the value of correlation coefficient between EPE and VAPEREMPL is 0.6389 ($p < 0.001$), between VAPEREMPL and HCROI is 0.8803 ($p < 0.001$), and between EPE and HCROI is 0.5641 ($p < 0.001$), which is indicative of high correlation between them, reflecting some common dimensions of human capital efficiency. The firm size also positively relates with all the three human capital measures (EPE 0.3240; VAPEREMPL 0.4770 and HCROI 0.4038), that implies that human capital efficiency generally rises with firm size. The correlation between human capital efficiency measures, are correlated between each other but negatively with market value.

Result for Multicollinearity Test

Table 4.4: VIF Test Result

VARIABLE	VIF	1/VIF
VAPEREMPL	2.77	0.360981
HCROI	2.43	0.412110
EPE	1.21	0.823288
FSIZE	1.11	0.898655
Mean VIF	1.88	

Source: Regression Output, 2025.

In Table 4.4 the Variance Inflation Factor (VIF) test is conducted to determine the extent of multicollinearity among the independent variables. Multicollinearity is the degree of correlation among the explanatory variables, and it can skew the regression estimates by inflating the standard errors.

From the table it is observed that VAPEREMPL has the largest VIF with 2.77. HCROI is second highest with VIF 2.43. EPE has the VIF 1.21, and FSIZE has the VIF 1.11. The mean VIF is 1.88. A VIF value over 10 usually represents severe multicollinearity, whereas a VIF between 5 and 10 signals a need for more caution. All

VIF values are comfortably below these figures and thus it can be concluded that multicollinearity does not pose a major threat to this analysis. This finding is also confirmed by tolerance values (1/VIF), which range from 0.36 (VAPEREMPL) upwards. These figures are all above the typical cutoff 0.10 value that is indicative of significant multicollinearity.

In conclusion, there are no grounds to exclude the independent variables from the regression, because multicollinearity does not seem to undermine the estimated coefficients, reinforcing the robustness of further regressions on the impact of human capital efficiency on firm value.

Other Diagnostic Tests

Table 4.5: Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of TOBINSQ

Decision rule If p-value is statistically significant, then reject Ho and accept HA

Result $\chi^2(1) = 134.22$; Prob> $\chi^2 = 0.0000$

Source: Regression Output, 2025

To check for heteroskedasticity, the Breusch-Pagan/Cook-Weisberg test that is shown in Table 4.5. The null hypothesis (Ho) stated here is that the error variance is constant, and the alternative hypothesis (HA) stated is that the error variance is not constant, hence heteroskedasticity. The value of the statistic is 134.22 and the p-value is 0.0000. The p-value is significantly below the 5% confidence level, so Ho can

be rejected. We have conclusive evidence of heteroskedasticity. An assumption of OLS is that error variance is constant, and when it is not we obtain biased standard errors which have implications for hypothesis tests and confidence intervals. The actual coefficient estimates are not biased but the standard errors are and further analysis should be performed with robust standard errors.

Hypotheses Testing

Table 4.7: Summary PCSE for DTOBINSQ DEPE DVAPEREMPL DHCROI DFSIZE

Panel-Corrected

D.TOBINSQ	COEF.	STD. ERR.	z	P> z
D.EPE	6.51	9.02	0.72	0.470
D.VAPEREMPL	-1.83	1.12	-1.63	0.103
D.HCROI	1.69	1.06	1.59	0.111
D.FSIZE	.091	.296	0.31	0.760
_CONS	-.004	.075	-0.05	0.961
N				396
R-squared				0.0018
Wald $\chi^2(4)$				3.53
Prob > χ^2				0.4732

Source: Regression Output, 2025

The regression results obtained from the Panel-Corrected Standard Errors (PCSE) model as presented in Table 4.7 indicates that none of the human capital efficiency variables significantly affect the value of Nigerian listed manufacturing firms. The coefficient of determination (R-squared) is at 0.0018 and the Wald chi-square value is at 3.53 ($p=0.4732$), this reveals that the overall fit of the model is poor.

The coefficient of EPE is positive (6.51) but not significant ($p=0.470$), this shows that increases in earnings per employee did not directly increase firm value. Profit per employee was considered a key indicator of corporate performance by McKinsey, et al. (2018), however, this study concludes that human capital efficiency in terms of profit per employee is not a driver of market value,

this is consistent with the study of Egolum (2021) and Okoro and Igba (2023) who investigated Nigerian listed companies.

The coefficient for Value Added Per Employee (VAPEREMPL) is negative (-1.83) and insignificant ($p=0.103$). This could imply that increasing VAPEREMPL reduces firm value, however the significance levels are low and Tran and Vo (2020) have found that the role of human capital efficiency depends on sector context and manufacturing firms may exhibit diminishing returns due to process inefficiencies. Rabid, et al. (2024) found that structural capital efficiency may overshadow human capital efficiency for Nigerian manufacturing firms.

HCROI has a positive coefficient (1.69) but is not statistically significant ($p=0.111$), this

confirms the arguments of AIHR (2020) and Criterion HCM (2022) that although the calculation of HCROI may serve to gauge the productivity and capability of an organisation's workforce, the direct impact on the market value may not be statistically evident, or is achieved indirectly. Eneh and Anyanhara (2025) noted that economic and institutional constraints prevent market responsiveness to human capital investment. Firm size (FSIZE) was not found to significantly affect the market value ($p=0.760$), consistent with Nneji, et al. (2024) who revealed that a larger firm size does not necessarily yield greater market value for Nigerian manufacturing companies in the absence of efficiently utilized intellectual capital.

The results presented in the table concur with the findings of Emeka, et al. (2022) and Kwarbai and Akinpelu (2016), that there are weak or no significant links between human capital efficiency and firm value for Nigerian listed manufacturing companies. The findings indicated that human capital efficiency did not make a difference in market valuation in the manufacturing sector of Nigeria. Therefore, in order to realize value creation through human capital, the management must have to complement its strategies in the development of human capital with that in technological innovation, structural capital and efficient resource utilization. Dynamic model can be developed to investigate the effect of lagged human capital investment on market value.

Discussion of Results

The results obtained from the Panel-Corrected Standard Errors (PCSE) regression analysis show that human capital efficiency measures (Earnings Per Employee (EPE), Value Added Per Employee (VAPEREMPL) and Human Capital Return on Investment (HCROI)) and firm size (FSIZE) have no significant impact on market value of the listed manufacturing firms in Nigeria. This results have supported and contrasted previous research works in this field, thus highlighting the unique role of human capital on corporate performance.

The coefficient on EPE is positive but insignificant ($p=0.470$), this signifies that higher profits earned per employee does not directly lead to higher firm value. Profit per employee, as indicated by McKinsey & Company (2018), is modern measurement of corporate performance, however, it appears not to have a direct relationship with Tobin's Q for the Nigerian manufacturing firms, similar findings were reported by Kwarbai and Akinpelu (2016), in that they found inconsistent results when measuring human capital efficiency in Nigerian corporations depending on sector and managerial discretion.

VAPEREMPL shows a negative but insignificant coefficient ($p=0.103$), which concur with the findings of Tran and Vo (2020), who found human capital efficiency positively affects firm performance in Vietnam and its effect is likely to be sector-specific and higher labor costs, without complementary innovation or distinctiveness, may inhibit market appreciation. Similar results were found by Rabid et al. (2024) where it is argued that human capital efficiency is outweighed by structural capital efficiency for the Nigerian manufacturing firm.

HCROI has a positive coefficient but insignificant effect ($p=0.111$). This supports the findings of AIHR (2020) and Criterion HCM (2022) that while the calculation of HCROI allows companies to evaluate productivity, the effect on the market value of the firm is not always direct and can depend on factors such as the firm's adaptation of technologies, the intensity of capital, etc. Okoro and Igba (2023) similarly found that investments in human capital in the Nigerian manufacturing firms benefit in the long run rather than in market value terms.

The results obtained for human capital efficiency is also consistent with Egolum (2021) and Emeka et al. (2022) findings of weak or insignificant links between human capital efficiency and firm value in both the service and industrial sector of Nigerian economies. Eneh and Anyanhara (2025) further maintained that economic and institutional environment in Nigeria diminished the desired impact from human capital investments.

In conclusion, evidence from the current study is conclusive that although human capital is fundamental in determining operational performance, it does not directly have a significant impact on market value (Tobin's Q) in Nigerian manufacturing sector. Hence, intellectual capital components of human capital are likely to outweigh each other like that presented by Nneji et al. (2024), that is structural and relational capital should not be ignored. Further strategies should be made on linking human capital to both technological innovation, structural capital efficiency, and resource allocation to affect market value.

Summary, Conclusion And Recommendations

Summary

This study was conducted to examine the effect of human capital efficiency on market value of Nigerian listed manufacturing firms using a panel of 440 firm-year observations, with a focus on three human capital efficiency variables and Tobin's Q as proxy for market value. Descriptive statistics show a disparity among human capital efficiency variables across firms. The diagnostic test results showed the variables are not normally distributed, without extreme multicollinearity, presence of heteroskedasticity and panel effects that necessitates using the Random effects model with PCSEs. It was established using unit root testing that most of the variables are stationary after first differencing. From the regression, none of the human capital efficiency measures or firm size produced statistically significant effect on Tobin's Q and the R-squared is small. The analysis concluded that there is no direct market valuation on the Nigerian manufacturing companies with measures of human capital efficiency.

Conclusion

This study was undertaken to find the influence of three different human capital efficiency variables (EPE, VAPEREMPL, HCRROI) and firm size on the value of listed manufacturing firms in Nigeria. Tobin's Q, the result indicated that:

(i) There is no statistical significance between human capital efficiency measures

and Tobin's Q; firm size was also found to have insignificant effect.

(ii) The overall model fit was weak and has insignificant contribution to the variation in firm value.

(iii) Workforce efficiency was found not to directly relate with market value of listed manufacturing firms in Nigeria.

Recommendations

i. Investment in human capital: Firms should enhance long term value by investing in organized employee development plans that are aligned with technological innovation and strategic market goals.

ii. Linking human capital to innovation: To ensure a market value response, companies should combine human capital investments with improvement in structural and relational capital, through adaptation of technology, improvement in processes, and stakeholder relationships.

iii. Improvement in performance measurement: Firms should go beyond conventional earnings and return measures when determining how human capital adds value; they should incorporate metrics for employee engagement, innovation capacity, intellectual capital efficiency, and other key elements to better gauge contribution to firm value.

Contributions to Knowledge

The study offers the following relevant contributions to literature in human capital efficiency and firm value in the case of the Nigerian manufacturing industries.

i. The study has provided current and sector-specific empirical evidence that the three human capital efficiency metrics (Earnings Per Employee, Value Added Per Employee, and Human Capital Return on Investment) do not significantly explain market value of listed manufacturing firms in Nigeria. This supports previous studies such as; Egolum (2021) and Emeka et al. (2022) on service firms, indicating that the operational efficiency metrics alone may not adequately increase firm valuation in developing economies.

ii. In a bid to further enrich human capital literature, where studies had mostly concentrated on service firms or mixed industrial samples, this study focused only

on manufacturing firms alone and thus provides nuanced findings in understanding the role of human capital efficiency in the labor-intensive manufacturing sector with unique characteristics. The result confirms Tran and Vo's (2020) finding on the limitations of human capital efficiency alone contributing to firm value and on the impact of diminishing returns and structural inefficiencies.

iii. It emphasizes the combined use of human capital, technology and structure capital to create market recognized value similar to what is happening in manufacturing industries. This goes a step beyond the previous studies (Rabid et al., 2024 and Nneji et al., 2024) on how the complementary factors are used to enhance firm value.

iv. Using PCSE model helps control for panel-level heteroskedasticity and contemporaneous correlation hence provided robust results that would assist subsequent intellectual capital and performance research.

Suggestions for Future Research

i. Extending to other industries: The findings of this research can be extended to other industries, such as; service, technology-based firms to examine if the same outcome would persist across other industries.

ii. Other human capital measures: future researches should try to incorporate other dimensions of human capital like: Employee Training Hours, Innovation Indices, Employee Engagement Level, and Intellectual Capital efficiency to determine their effect on market value.

iii. Temporal dimensions: A deeper insight into the temporal relationship between human capital efficiency and firm value may be achieved using dynamic panel models and lagged variables to capture possible lagged effect.

iv. Multi-countries study: a cross-country study comparing Nigerian manufacturing firms with firms in both emerging and developed economies may also yield valuable results regarding the role of institutional context and corporate governance structures.

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Impact of Students' Industrial Work Experience Scheme (SIWES) Participation on Entrepreneurial Skills Acquisition among Business Education Students in Delta State University, Abraka.**OKUDAYE, Israel Nnamdi**

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Publication Date: 2026/06/22**Abstract**

This study investigated the impact of Students' Industrial Work Experience Scheme (SIWES) participation on entrepreneurial skills acquisition among Business Education students in Delta State University, Abraka. The study was motivated by the increasing need to equip graduates with practical skills that can enhance employability, self-reliance, and entrepreneurial development. Specifically, the study examined the impact of SIWES participation on communication skills, managerial skills, and financial management skills acquisition among Business Education students. The study adopted a descriptive survey research design. The population consisted of 245 Business Education students in 200, 300, and 400 Levels of Delta State University, Abraka, and the entire population was used through a census sampling technique. Data were collected using a researcher-developed instrument titled SIWES Participation and Entrepreneurial Skills Acquisition Questionnaire (SPESAQ). The instrument was validated by experts and yielded a reliability coefficient of 0.82 using the Cronbach Alpha method. Mean and Standard Deviation were used to answer the research questions, while the One-Sample t-test was used to test the hypotheses at the 0.05 level of significance. The findings revealed that SIWES participation positively influenced communication skills acquisition (Grand Mean = 3.42), managerial skills acquisition (Grand Mean = 3.39), and financial management skills acquisition (Grand Mean = 3.39) among Business Education students. The hypotheses tested further showed that SIWES participation had a significant impact on all three entrepreneurial skill dimensions investigated. The study concluded that SIWES is an effective platform for developing entrepreneurial competencies among Business Education students. It was therefore recommended that universities, SIWES coordinators, and employers strengthen the implementation of the programme to maximize students' practical learning experiences.

Keywords: *SIWES Participation, Entrepreneurial Skills Acquisition, Business Education Students, Delta State University Abraka.*

Introduction

The rapid transformation of the global economy has increased the demand for graduates who possess not only academic knowledge but also practical and entrepreneurial competencies. In Nigeria, the persistent challenge of graduate unemployment has heightened concerns about the capacity of higher institutions to prepare students for self-reliance and sustainable employment. Consequently, universities are increasingly expected to produce graduates who can create jobs rather than depend solely on existing employment opportunities.

Business Education occupies a strategic position in achieving this objective because it is designed to equip students with business knowledge, occupational competencies, entrepreneurial skills, and managerial capabilities necessary for effective participation in the modern economy. The programme combines theoretical instruction with practical experiences that prepare graduates for employment, self-employment, and enterprise development. According to Oroka and Igberaharha (2024), Business Education promotes the acquisition of communication, interpersonal, and marketing skills that are essential for entrepreneurial success among students in tertiary institutions in Delta State.

Entrepreneurship has become a major policy focus in higher education due to its potential to stimulate economic growth, innovation, and job creation. Entrepreneurial skills refer to the competencies that enable individuals to identify opportunities, mobilize resources, solve problems creatively, manage risks, and establish viable enterprises. Such skills include communication, leadership, innovation, financial management, decision-making, business planning, and opportunity recognition skills. Studies conducted among Business Education students in Delta State have shown that entrepreneurship education significantly predicts managerial and financial

skills acquisition, thereby enhancing students' readiness for entrepreneurial ventures (Osiughwu & Oroka, 2023).

One of the major avenues through which Nigerian undergraduates acquire practical and entrepreneurial competencies is the Students Industrial Work Experience Scheme (SIWES). The programme was established by the Industrial Training Fund (ITF) to bridge the gap between theoretical classroom learning and practical workplace experience. SIWES provides students with opportunities to interact with professionals, apply classroom knowledge, acquire technical competencies, and develop workplace attitudes that are relevant to their future careers.

The philosophy behind SIWES is rooted in experiential learning, which emphasizes learning through direct participation and practical engagement. Experiential learning has been recognized as an effective strategy for enhancing entrepreneurial intentions and practical skill acquisition among Business Education students. Recent studies in Delta State-owned institutions revealed that practical learning experiences such as internships, industrial attachment, and business simulations significantly influence students' entrepreneurial development and willingness to establish businesses after graduation (Ito & Okudaye, 2025).

For Business Education students, SIWES serves as a platform for exposure to real business environments where entrepreneurial competencies can be developed. During industrial attachment, students participate in office administration, business communication, customer relationship management, financial record keeping, marketing activities, and other business operations. Through these activities, students are expected to develop entrepreneurial skills that will enhance their employability and self-employment prospects.

Furthermore, contemporary approaches to Business Education increasingly emphasize

active learning strategies that encourage creativity, innovation, and problem-solving. A recent study by Ito and Okpue (2025) found that problem-based learning significantly enhances entrepreneurial mindsets among Business Education students in Delta State University, Abraka, by fostering creativity, innovation, risk-taking, and critical thinking abilities. These findings suggest that practical experiences such as SIWES may similarly contribute to entrepreneurial skills acquisition. In Delta State University, Abraka, SIWES remains a compulsory component of the Business Education curriculum. However, there is limited empirical evidence specifically examining the extent to which participation in SIWES contributes to entrepreneurial skills acquisition among Business Education students. Given the increasing emphasis on entrepreneurship as a solution to graduate unemployment and economic development, it becomes necessary to investigate the impact of SIWES participation on entrepreneurial skills acquisition among Business Education students in Delta State University, Abraka.

Statement of the Problem

The increasing rate of graduate unemployment in Nigeria has raised concerns about whether university education is adequately equipping students with the practical and entrepreneurial skills needed for self-reliance. As a skill-oriented programme, Business Education is expected to produce graduates who can identify business opportunities, create employment, and contribute meaningfully to economic development. To support this goal, the Students Industrial Work Experience Scheme (SIWES) was introduced to expose students to real work environments where they can develop practical and entrepreneurial competencies beyond what is taught in the classroom.

Despite the importance of SIWES, there are growing concerns that some students may not be gaining the expected entrepreneurial benefits from the programme. Challenges such as inadequate supervision, limited exposure to entrepreneurial activities, inappropriate placement, and insufficient involvement in workplace tasks may affect the quality of learning experiences obtained during industrial attachment. As a result, many graduates still struggle to demonstrate the entrepreneurial skills required for self-employment and business creation after graduation.

Although studies have highlighted the importance of experiential learning and entrepreneurship education, there is limited empirical evidence on the extent to which SIWES participation contributes to entrepreneurial skills acquisition among Business Education students in Delta State University, Abraka. It is against this backdrop that this study seeks to investigate the impact of SIWES participation on the entrepreneurial skills acquisition of Business Education students in Delta State University, Abraka.

Purpose of the Study

The purpose of this study is to examine the impact of SIWES participation on entrepreneurial skills acquisition among Business Education students in Delta State University, Abraka.

Specifically, the study seeks to:

1. Determine the impact of SIWES participation on communication skills acquisition among Business Education students in Delta State University, Abraka.
2. Examine the impact of SIWES participation on managerial skills acquisition among Business Education students in Delta State University, Abraka.
3. Determine the impact of SIWES participation on financial management

skills acquisition among Business Education students in Delta State University, Abraka.

Research Questions

The following research questions guided the study:

1. What is the impact of SIWES participation on communication skills acquisition among Business Education students in Delta State University, Abraka?
2. What is the impact of SIWES participation on managerial skills acquisition among Business Education students in Delta State University, Abraka?
3. What is the impact of SIWES participation on financial management skills acquisition among Business Education students in Delta State University, Abraka?

Research Hypotheses

The following null hypotheses was tested at the 0.05 level of significance:

H1: SIWES participation has no significant impact on communication skills acquisition among Business Education students in Delta State University, Abraka.

H2: SIWES participation has no significant impact on managerial skills acquisition among Business Education students in Delta State University, Abraka.

H3: SIWES participation has no significant impact on financial management skills acquisition among Business Education students in Delta State University, Abraka.

Review of Related Literature

Conceptual Framework

Concept of Students Industrial Work Experience Scheme (SIWES)

The Students Industrial Work Experience Scheme (SIWES) is a structured industrial

training programme established by the Industrial Training Fund (ITF) in collaboration with tertiary institutions and industries to bridge the gap between classroom learning and practical work experience. The programme was introduced to provide students with opportunities to acquire occupational competencies, practical skills, and professional experiences relevant to their fields of study before graduation.

SIWES has become an integral component of vocational, technical, and professional education programmes in Nigeria because it exposes students to real workplace situations where they can apply theoretical knowledge acquired in the classroom. According to the Industrial Training Fund (2023), the programme is designed to equip students with practical competencies that enhance employability, productivity, and workplace adaptability. Through industrial attachment, students interact with professionals, use modern equipment and technologies, and develop work habits that prepare them for future careers.

Within the context of Business Education, SIWES provides students with opportunities to participate in office administration, business communication, customer relationship management, accounting procedures, marketing activities, and other organizational functions. These practical experiences enable students to understand workplace realities and develop entrepreneurial competencies that may not be fully acquired through classroom instruction alone.

Recent studies in Delta State have emphasized the importance of experiential learning in skill development among Business Education students. Ito and Okudaye (2025) found that experiential learning activities such as industrial attachment, internships, and practical business engagements significantly influence entrepreneurial intentions and practical skills acquisition among Business

Education students in Delta State-owned institutions. Similarly, Igberaharha (2024) observed that practical workplace exposure enhances students' readiness for employment and entrepreneurship by improving their professional competence and confidence. Beyond skill acquisition, SIWES serves as an important mechanism for socialization into the world of work. During industrial attachment, students are exposed to organizational culture, workplace ethics, teamwork, time management practices, and professional responsibilities. These experiences help students develop positive work attitudes, adaptability, and discipline, which are highly valued by employers and are equally important for entrepreneurial success. Studies have shown that students who participate actively in industrial training programmes often demonstrate higher levels of workplace confidence and career preparedness than those with limited practical exposure (Adeniyi, 2025).

Objectives of SIWES

The Students Industrial Work Experience Scheme was established to achieve several educational and professional objectives. According to the Industrial Training Fund (2023), the objectives of SIWES include:

1. Bridging the gap between theoretical knowledge and practical application.
2. Providing students with opportunities to acquire relevant work experience.
3. Exposing students to modern technologies, equipment, and workplace practices.
4. Developing occupational competencies and employability skills.
5. Enhancing entrepreneurial and self-employment capabilities.
6. Strengthening collaboration between educational institutions and industries.
7. Preparing students for the challenges of the labour market after graduation.

Through these objectives, SIWES contributes significantly to students' professional development and entrepreneurial growth.

Concept of Entrepreneurial Skills Acquisition

Entrepreneurial skills acquisition refers to the process through which individuals develop the competencies, attitudes, knowledge, and abilities necessary for identifying business opportunities, creating value, managing resources, and establishing sustainable ventures. Entrepreneurial skills are increasingly regarded as essential for graduates because they promote innovation, self-reliance, economic growth, and job creation.

Recent studies have also highlighted the growing importance of digital entrepreneurial competencies in the twenty-first century. As businesses increasingly rely on digital technologies, entrepreneurs are expected to possess competencies related to information technology, digital communication, online marketing, e-commerce, and data management. Enang (2023) emphasized that Business Education students require digital entrepreneurial skills and competencies to cope effectively with the demands of the modern business environment. The author maintained that digital competence has become a critical component of entrepreneurial success because it enhances innovation, competitiveness, and access to global markets.

Similarly, research conducted among Business Education undergraduates revealed that entrepreneurial digital skills significantly contribute to students' ability to identify business opportunities, utilize technological tools, and participate effectively in modern business operations. Osiesi, Adegboyega, Fadiya, and Blignaut (2024) found that entrepreneurial digital knowledge and skills improve students' readiness for self-

employment and enhance their capacity to adapt to emerging business trends.

Entrepreneurial skills acquisition is also closely associated with the development of entrepreneurial competencies required for the successful establishment and management of small business ventures. David and Adedeji (2024) identified managerial, marketing, communication, and information and communication technology (ICT) skills as critical competencies required by Business Education students for venture creation and business sustainability. According to the authors, the acquisition of these competencies increases graduates' ability to transform innovative ideas into profitable enterprises and respond effectively to business challenges. In addition, entrepreneurial skills acquisition contributes significantly to financial independence and wealth creation. Edokpolor, Imeokparia, and Osifo (2023) reported that entrepreneurial knowledge and skills acquisition positively influence students' intentions to establish businesses after graduation. Their study demonstrated that students who acquire entrepreneurial competencies are more likely to develop favourable attitudes towards self-employment and venture creation than those with limited entrepreneurial exposure.

Entrepreneurial skills commonly associated with Business Education include:

- Communication skills
- Managerial skills
- Financial management skills
- Marketing skills
- Leadership skills
- Negotiation skills
- Innovation and creativity skills
- Problem-solving skills
- Opportunity recognition skills

However, this study focuses specifically on communication skills, managerial skills, and financial management skills because of their direct relevance to Business Education and entrepreneurship development.

Communication Skills Acquisition

Communication skills refer to the ability to effectively transmit, receive, interpret, and respond to information through oral, written, visual, and digital channels. Communication remains one of the most important entrepreneurial competencies because business success depends largely on effective interaction with customers, employees, investors, suppliers, and other stakeholders.

Communication skills involve speaking, listening, writing, presentation, negotiation, and interpersonal interaction abilities. Entrepreneurs require effective communication skills to persuade customers, build professional relationships, negotiate contracts, manage employees, and market products or services successfully.

During SIWES participation, Business Education students engage in workplace communication activities such as report writing, customer service interactions, preparation of business correspondence, telephone communication, meetings, and presentations. These experiences provide opportunities for students to improve their communication competence in real organizational settings.

Oroka and Igberaharha (2024) reported that entrepreneurship education significantly predicts communication skills acquisition among Business Education students in Delta State. Their study revealed that students who participate actively in practical learning experiences demonstrate higher levels of communication competence, interpersonal effectiveness, and workplace confidence. Effective communication therefore serves as a critical foundation for entrepreneurial success and organizational performance.

Managerial Skills Acquisition

Managerial skills refer to the competencies required for planning, organizing, directing, coordinating, supervising, and controlling

organizational resources to achieve predetermined objectives. These skills are essential for entrepreneurship because entrepreneurs must perform management functions in order to ensure the growth and sustainability of their ventures.

Managerial skills include leadership, decision-making, delegation, conflict resolution, problem-solving, strategic planning, team management, and organizational skills. Entrepreneurs who possess strong managerial competencies are better positioned to utilize resources effectively, motivate employees, and respond to business challenges.

SIWES provides Business Education students with opportunities to observe and participate in management-related activities within organizations. Through workplace exposure, students learn how managers coordinate operations, make decisions, allocate resources, and address organizational problems. Such experiences contribute significantly to the development of managerial competence.

According to Osiughwu and Oroka (2023), entrepreneurship education significantly predicts managerial skills acquisition among Business Education students in Delta State tertiary institutions. The study concluded that managerial competencies are critical determinants of entrepreneurial effectiveness and business sustainability. Similarly, Ito and Okpue (2025) noted that active learning approaches that expose students to real-life business situations contribute significantly to the development of leadership and managerial capabilities.

Financial Management Skills Acquisition

Financial management skills refer to the competencies involved in planning, controlling, organizing, monitoring, and utilizing financial resources effectively to achieve organizational goals. Financial management is one of the most important aspects of entrepreneurship because poor

financial decisions often contribute to business failure.

Financial management skills include budgeting, bookkeeping, financial planning, cash flow management, cost control, investment analysis, inventory management, and financial record keeping. Entrepreneurs require these skills to ensure the efficient utilization of resources and long-term business sustainability.

Business Education students participating in SIWES are often exposed to accounting procedures, bookkeeping practices, payroll administration, budgeting processes, inventory management, and financial reporting systems. Such practical experiences enable students to understand the financial operations of organizations and improve their financial decision-making abilities.

Research conducted by Osiughwu and Oroka (2023) revealed that entrepreneurship education significantly predicts financial management skills acquisition among Business Education students in Delta State tertiary institutions. The authors argued that financial literacy and management competence are critical factors that determine entrepreneurial success and organizational survival.

Furthermore, practical learning experiences such as SIWES provide opportunities for students to apply financial concepts learned in the classroom to real business situations, thereby strengthening their understanding of financial management principles.

Relationship Between SIWES Participation and Entrepreneurial Skills Acquisition

The relationship between SIWES participation and entrepreneurial skills acquisition is grounded in the practical nature of industrial training. Through direct involvement in workplace activities, students acquire experiences that facilitate the development of entrepreneurial competencies required for business success.

SIWES exposes students to real business environments where they encounter workplace challenges, organizational decision-making processes, customer interactions, financial operations, and management practices. Such experiences enhance students' ability to communicate effectively, manage resources, solve problems, and make informed business decisions.

Beyond the acquisition of technical competencies, SIWES provides students with opportunities to develop entrepreneurial attitudes and behaviours that are essential for venture creation. During industrial attachment, students observe how entrepreneurs and managers identify opportunities, organize resources, manage risks, and respond to market demands. Such exposure helps students develop initiative, creativity, self-confidence, and a positive attitude towards entrepreneurship. According to Nwachuya and Imoke (2023), students who participate effectively in SIWES demonstrate greater entrepreneurial awareness and are more likely to consider self-employment as a viable career option after graduation.

Research Methodology

This study adopted the descriptive survey research design. The population of the study comprised 245 Business Education students in 200, 300, and 400 Levels of Delta State University, Abraka. The choice of 200, 300, and 400 Level students was based on the fact that they possess adequate knowledge of the Business Education programme and have had exposure to SIWES-related activities or are sufficiently aware of its relevance to entrepreneurial skills development. In contrast, 100 Level students were excluded because they are newly admitted students who may not have acquired enough academic and programme experience to provide reliable information on the variables under investigation. Since the population of the study was relatively small and manageable,

the researcher adopted a census sampling technique whereby the entire population of 245 students was used for the study. The instrument used for data collection was a structured questionnaire developed by the researcher and titled "SIWES Participation and Entrepreneurial Skills Acquisition Questionnaire (SPESAQ)." The questionnaire was structured using a four-point Likert rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with corresponding values of 4, 3, 2, and 1 respectively. The instrument was subjected to face and content validation by three experts. One expert was drawn from the Department of Business Education, while two experts were drawn from the Department of Measurement and Evaluation, Delta State University, Abraka. The reliability of the instrument was established through a pilot test conducted using 30 Business Education students from a university outside the study area who possessed characteristics similar to the respondents used for the study. The data obtained from the pilot study were analyzed using Cronbach Alpha Reliability Coefficient to determine the internal consistency of the instrument. A reliability coefficient of 0.82 was obtained, indicating that the instrument was reliable and suitable for data collection. The researcher personally administered the questionnaire to the respondents with the assistance of two research assistants. The data collected for this study were analyzed using Mean and Standard Deviation to answer the research questions. The Mean was used to determine the respondents' level of agreement with each questionnaire item, while the Standard Deviation was used to determine the degree of variation in their responses. A criterion mean of 2.50 was adopted as the benchmark for decision-making. Thus, any item with a mean score of 2.50 or above was regarded as agreed, whereas any item with a mean score below 2.50 was regarded as disagreed. The null hypotheses formulated for

the study were tested using the One-Sample t-test at the 0.05 level of significance.

Presentation, Analysis and Interpretation Of Data

Presentation of Data

Research Question One

What is the impact of SIWES participation on communication skills acquisition among Business Education students in Delta State University, Abraka?

Table 4.1

Mean and Standard Deviation on the Impact of SIWES Participation on Communication Skills Acquisition

S/N	Items	Mean	SD	Decision
1	SIWES participation improved my ability to communicate effectively with colleagues and supervisors.	3.48	0.72	Agree
2	Through SIWES, I developed better oral communication skills.	3.36	0.81	Agree
3	SIWES enhanced my business report writing skills.	3.29	0.83	Agree
4	My ability to interact confidently with customers improved during SIWES.	3.41	0.76	Agree
5	SIWES exposed me to professional communication practices in the workplace.	3.57	0.69	Agree
6	SIWES improved my listening and interpersonal communication skills.	3.38	0.79	Agree
7	I became more confident in presenting ideas after participating in SIWES.	3.31	0.82	Agree
8	SIWES enhanced my ability to prepare business correspondence and official documents.	3.34	0.78	Agree
9	SIWES improved my ability to work effectively in teams through communication.	3.45	0.74	Agree
10	The communication skills acquired through SIWES are useful for entrepreneurial activities.	3.63	0.67	Agree
Grand Mean		3.42	0.76	Agree

Table 4.1 shows that all the items recorded mean scores above the criterion mean of 2.50. The grand mean of 3.42 indicates that respondents agreed that SIWES participation has a positive impact on communication skills acquisition among Business Education students. This suggests that SIWES enhances students' oral communication, report writing, interpersonal relations, teamwork, and professional communication abilities.

Research Question Two

What is the impact of SIWES participation on managerial skills acquisition among Business Education students in Delta State University, Abraka?

Table 4.2

Mean and Standard Deviation on the Impact of SIWES Participation on Managerial Skills Acquisition

S/N	Items	Mean	SD	Decision
11	SIWES improved my ability to plan and organize tasks effectively.	3.44	0.75	Agree
12	Participation in SIWES enhanced my decision-making skills.	3.39	0.78	Agree
13	SIWES exposed me to managerial responsibilities in the workplace.	3.32	0.81	Agree
14	I learned how to coordinate activities efficiently during SIWES.	3.35	0.79	Agree
15	SIWES improved my leadership abilities.	3.28	0.84	Agree
16	My problem-solving skills improved through workplace experiences gained during SIWES.	3.41	0.76	Agree
17	SIWES enhanced my ability to supervise and guide others.	3.26	0.83	Agree
18	Through SIWES, I learned effective time-management techniques.	3.47	0.71	Agree
19	SIWES increased my ability to manage resources effectively.	3.37	0.80	Agree
20	The managerial skills acquired during SIWES can assist me in running a business successfully.	3.58	0.68	Agree
Grand Mean		3.39	0.78	Agree

The results in Table 4.2 reveal that all the items had mean scores above 2.50, with a grand mean of 3.39. This indicates that SIWES participation positively influences managerial skills acquisition among Business

Education students. The findings suggest that students acquired planning, leadership, coordination, decision-making, time management, and resource management skills through SIWES.

Research Question Three

What is the impact of SIWES participation on financial management skills acquisition among Business Education students in Delta State University, Abraka?

Table 4.3

Mean and Standard Deviation on the Impact of SIWES Participation on Financial Management Skills Acquisition

S/N	Items	Mean	SD	Decision
21	SIWES improved my understanding of budgeting procedures.	3.31	0.80	Agree
22	Through SIWES, I gained knowledge of financial record	3.42	0.74	Agree

	keeping.			
23	SIWES exposed me to basic accounting practices.	3.29	0.83	Agree
24	My ability to manage financial resources improved during SIWES.	3.37	0.77	Agree
25	SIWES enhanced my understanding of cash flow management.	3.34	0.79	Agree
26	I learned how organizations control and monitor expenditures through SIWES.	3.45	0.73	Agree
27	SIWES improved my ability to make sound financial decisions.	3.32	0.81	Agree
28	Participation in SIWES exposed me to inventory and cost management practices.	3.27	0.84	Agree
29	SIWES increased my awareness of the importance of financial planning in business.	3.51	0.69	Agree
30	The financial management skills acquired during SIWES will help me become self-employed in the future.	3.60	0.66	Agree
Grand Mean		3.39	0.77	Agree

Table 4.3 indicates that all the items had mean scores above the benchmark mean of 2.50. The grand mean of 3.39 shows that respondents agreed that SIWES participation positively impacts financial management

skills acquisition. This implies that SIWES contributes significantly to the development of budgeting, accounting, record-keeping, financial planning, and resource management skills.

Hypothesis One

H₁: SIWES participation has no significant impact on communication skills acquisition among Business Education students in Delta State University, Abraka.

Table 4.4

One-Sample t-test on Communication Skills Acquisition

Variable	N	Mean	Test Value	t-value	p-value	Decision
Communication Skills Acquisition	245	3.42	2.50	18.63	0.000	Reject H ₁

Since the p-value (0.000) is less than the 0.05 level of significance, the null hypothesis was rejected. Therefore, SIWES participation has a significant impact on communication skills acquisition among Business Education students in Delta State University, Abraka.

Hypothesis Two

H₂: SIWES participation has no significant impact on managerial skills acquisition among Business Education students in Delta State University, Abraka.

Table 4.5

One-Sample t-test on Managerial Skills Acquisition

Variable	N	Mean	Test Value	t-value	p-value	Decision
Managerial Skills Acquisition	245	3.39	2.50	17.94	0.000	Reject H ₂

The p-value of 0.000 is less than 0.05. Therefore, the null hypothesis was rejected. This implies that SIWES participation has a

significant impact on managerial skills acquisition among Business Education students in Delta State University, Abraka.

Hypothesis Three

H₃: SIWES participation has no significant impact on financial management skills

acquisition among Business Education students in Delta State University, Abraka.

Table 4.6

One-Sample t-test on Financial Management Skills Acquisition

Variable	N	Mean	Test Value	t-value	p-value	Decision
Financial Management Skills Acquisition	245	3.39	2.50	18.12	0.000	Reject H ₃

Since the p-value (0.000) is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that SIWES participation has a significant impact on financial management skills acquisition among Business Education students in Delta State University, Abraka.

Discussion of Findings

The findings of this study revealed that SIWES participation plays a significant role in enhancing entrepreneurial skills acquisition among Business Education students in Delta State University, Abraka. The discussion is presented based on the research questions and hypotheses that guided the study.

The findings from Research Question One showed that SIWES participation had a positive impact on communication skills acquisition among Business Education students, as evidenced by the grand mean score of 3.42. Respondents agreed that participation in SIWES improved their ability to communicate effectively with colleagues and supervisors, enhanced their oral communication and report-writing skills, strengthened their interpersonal relationships, and increased their confidence in interacting with customers and presenting ideas. The hypothesis test further confirmed that SIWES participation had a significant impact on

communication skills acquisition, leading to the rejection of the null hypothesis.

This finding is not surprising because industrial training exposes students to real workplace environments where effective communication is essential for daily operations. During SIWES, students interact with supervisors, co-workers, customers, and other stakeholders, thereby developing both verbal and written communication competencies. These experiences provide opportunities that are often unavailable within the traditional classroom setting.

The finding agrees with the study of Oroka and Igberaharha (2024), who reported that entrepreneurship-related practical experiences significantly predict communication skills acquisition among Business Education students in Delta State tertiary institutions. Their study emphasized that communication competence is one of the most important entrepreneurial skills required for successful business operations and customer relations.

The finding also supports the position of Obidile and Onyeneke (2023), who identified communication competence as one of the core entrepreneurial competencies required by Business Education graduates for entrepreneurial success. Effective communication enables entrepreneurs to negotiate, market products, build customer

relationships, and coordinate business activities efficiently.

Furthermore, the result aligns with the principles of Kolb's Experiential Learning Theory, which emphasizes that learning becomes more meaningful when students acquire knowledge through direct experience. The communication skills gained during SIWES therefore represent practical outcomes of experiential learning in workplace settings. The findings relating to Research Question Two revealed that SIWES participation positively influenced managerial skills acquisition among Business Education students, with a grand mean score of 3.39. Respondents agreed that SIWES enhanced their planning, organizing, decision-making, leadership, coordination, problem-solving, and time-management abilities. The corresponding hypothesis test also showed a statistically significant impact, resulting in the rejection of the null hypothesis.

This finding suggests that workplace exposure provides students with opportunities to observe and participate in managerial processes that contribute to their entrepreneurial development. Through practical involvement in organizational activities, students learn how resources are managed, tasks are coordinated, and decisions are made to achieve organizational goals. Such experiences help them develop competencies that are essential for managing future business ventures.

The finding corroborates the study of Nwachuya and Imoke (2023), who found that SIWES significantly enhances entrepreneurial competencies among Business Education students by exposing them to practical workplace responsibilities and management-related experiences. Their study concluded that industrial training serves as a bridge between theoretical knowledge and practical managerial competence.

Similarly, David and Adedeji (2025) reported that managerial competencies are among the most important entrepreneurial skills required by Business Education students for establishing and sustaining successful business ventures. According to the authors,

effective management skills enable entrepreneurs to coordinate resources, supervise workers, and make informed business decisions.

The result is also consistent with Human Capital Theory, which argues that investment in practical training and skill development enhances individuals' productivity and future economic performance. SIWES serves as an important investment in students' human capital by equipping them with managerial competencies required in the contemporary business environment.

The findings from Research Question Three indicated that SIWES participation had a positive impact on financial management skills acquisition among Business Education students, with a grand mean score of 3.39. The respondents agreed that SIWES improved their understanding of budgeting, financial record keeping, accounting practices, expenditure control, financial planning, inventory management, and financial decision-making. The hypothesis testing further established that SIWES participation significantly influenced financial management skills acquisition, leading to the rejection of the null hypothesis.

This finding highlights the importance of practical industrial experience in exposing students to financial operations within organizations. Through participation in SIWES, students become familiar with budgeting procedures, accounting records, cash flow management, and financial planning practices that are essential for entrepreneurial success. Such experiences contribute to the development of financial literacy and financial responsibility among future entrepreneurs.

The finding is in agreement with the study of Nwachuya and Imoke (2023), which reported that SIWES enhances entrepreneurship skills acquisition by providing students with opportunities to develop practical competencies in financial and business management. The authors noted that exposure to workplace financial practices strengthens students' entrepreneurial readiness and self-reliance.

The result also supports the findings of Oyinlana, Ojomo, Oluwalola, Sani, Iheagwam, and colleagues (2024), who found that accounting, record-keeping, problem-solving, and management skills acquired through business education programmes contribute significantly to business performance and entrepreneurial effectiveness. Financial management skills were identified as critical competencies for business survival and growth.

In the same vein, recent studies on entrepreneurial skills acquisition have emphasized that financial planning, budgeting, and resource management remain fundamental competencies required for successful entrepreneurial development among university graduates.

Overall, the findings of this study demonstrate that SIWES serves as an effective platform for developing communication, managerial, and financial management skills among Business Education students. The significant outcomes recorded across all the variables indicate that industrial work experience contributes meaningfully to entrepreneurial preparedness, employability, and self-reliance among undergraduates. These findings reinforce the continued relevance of SIWES as an essential component of Business Education programmes in Nigerian universities.

Conclusion

Based on the findings of this study, it was concluded that SIWES remains an essential component of Business Education programmes in Delta State University, Abraka. The programme provides students with opportunities to gain practical workplace experience that complements classroom instruction and exposes them to real-life business operations. The study established that participation in SIWES contributes significantly to the acquisition of communication skills, managerial skills, and financial management skills among Business Education students. Through industrial attachment, students are able to improve their ability to communicate effectively, manage

resources, make informed decisions, solve workplace problems, and handle financial responsibilities. The positive responses obtained from the respondents indicate that SIWES not only bridges the gap between theory and practice but also prepares students for entrepreneurial ventures and future career opportunities. Therefore, SIWES can be regarded as a valuable platform for developing the entrepreneurial competencies required for success in today's competitive business environment.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are made:

1. Delta State University should strengthen the implementation and monitoring of SIWES to ensure that students are attached to organizations where they can acquire relevant entrepreneurial and business-related skills.
2. Employers and industrial supervisors should provide meaningful responsibilities and practical learning opportunities that will enable students to develop communication, managerial, and financial management competencies.
3. The Department of Business Education should establish stronger partnerships with reputable organizations and industries to improve the quality of industrial placements available to students.

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Relationship Between Business Educators' Emotional Intelligence, Self-Motivation, Instructional Resources, and Job Performance in Delta State Tertiary Institutions

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Abstract

This study examined the relationship between Business Educators emotional intelligence, self-motivation, instructional resources, and job performance in Delta State tertiary institutions. Four research questions and four research hypotheses guided the study. Four validated instruments were used for data collection on self-motivation, instructional resources, and job performance. A correlational research design was adopted, targeting a population of 145 Business Education lecturers. The analysis involved Pearson Product-Moment Correlation (PPMCC), which was used to test hypotheses one to three on the relationship between emotional intelligence, self-motivation, instructional resources, and job performance of business education lecturers. Multiple Regression Analysis was employed to test hypothesis four on the joint relationship with job performance. All hypotheses were tested at the 0.05 level of significance using the statistical package for the social sciences (SPSS). Findings revealed significant positive correlations between each independent variable (emotional intelligence, self-motivation, instructional resources) and job performance. Furthermore, the combined variables significantly predicted job performance, with self-motivation emerging as the strongest predictor. The study concluded that non-cognitive factors and resource availability are critical for lecturer effectiveness and recommended targeted professional development and improved resource funding.

Introduction

The evolving demands of 21st-century business education roles in accounting, marketing, and management are aimed at producing competent graduates for the economy. Traditional focus on cognitive skills vs. growing importance of emotional and motivational factors. The specific context of Delta State, Nigeria: challenges of funding, infrastructure, and lecturer welfare.

Business Education lecturers are the dynamic force of the programme. The future of any country depends largely on the quality of the teaching workforce; they are considered social engineers who act as catalysts to socialize and humanize the young minds by their masculine and feminine qualities. The academic standard and quality of any educational institution depend to a large extent on the potential, quality, competencies,

character, and virtues of lecturers in higher institutions. Individuals who really aspire to become lecturers in tertiary institutions should possess certain essential qualities, a contagious positive attitude, interest, healthy values, strong motivational power, adjustment qualities, love for students, empathy, and patience Akhtar, Manzoor, Shaih and Khan, 2020). The importance of lecturers in any educational institution of teaching-learning cannot be overemphasized. Lecturers play a central role as implementers of the curriculum at the classroom level. Owan and Agunwa (2019) clearly stated that for any curriculum to be effectively implemented, quality teachers are highly necessary. Hence, what they do or do not do could directly or indirectly affect the attainment of instructional objectives in the classroom.

Students' learning outcomes have often been attributed to certain teacher attributes such as their training, educational qualification, years of experience, classroom behavior and their job performance, among others. The success and failure of educational activities are also highly dependent on lecturers whose self-motivation and job performance may go a long way in affecting students' academic performance. Thus, teacher self-motivation and job performance are important aspects of education.

Business education Lecturers self-motivation is the internal drive that leads lecturers to take action towards an educational goal. It can be defined as the intrinsic drive and commitment that educators possess to continuously improve their teaching practices, engage students, and create a positive learning environment. It refers to the internal motivation and personal determination that propels lecturers to go above and beyond basic responsibilities and strive for excellence in their profession. At its core, self-motivation stems from a deep passion for teaching and a genuine desire to make a difference in students' lives. It is the fuel that ignites a lecturer's enthusiasm, perseverance, and dedication to continuously learn, grow, and adapt to the evolving needs of students and the education system. One key aspect of self-

motivation is the willingness to take initiative and be proactive in seeking out opportunities for professional development.

Self-motivated lecturers are driven to enhance knowledge and skills through attending workshops, conferences, and courses, as well as engaging in independent research and reflection. They understand ongoing learning is crucial to staying current with best practices and innovative teaching strategies. Furthermore, self-motivation involves setting high expectations for oneself and constantly striving for excellence. Self-motivated lecturers set goals and work diligently to achieve them, pushing themselves beyond comfort zones and embracing challenges as opportunities for growth. They are not content with mediocrity but rather consistently seek ways to improve instructional methods, classroom management techniques, and student engagement strategies. In addition, self-motivation encompasses a positive mindset and resilience in the face of obstacles or setbacks. Self-motivated lecturers view challenges as learning experiences and setbacks as opportunities for reflection and growth. They maintain a sense of optimism and perseverance, allowing to bounce back from difficult situations and continue to inspire and motivate their students.

Ultimately, self-motivation plays a vital role in fostering a positive and effective learning environment, provide students, instilling a love for learning, and creating a classroom atmosphere where students feel supported, engaged, and empowered. When lecturers are self-motivated, they are better equipped to meet diverse needs of their students, adapt to changes in the education landscape, and make a lasting impact on the lives of those they teach. Self-motivated lecturers tend to put more effort into their teaching roles. They are more likely to go the extra mile to create engaging lesson plans, seek out innovative teaching methods, and actively participate in professional development opportunities. This means that lecturer's level of self-motivation could have a significant impact on their job performance.

Lecturers' job performance refers to the duties performed by a lecturer at a particular period in the school system, including the discharge of their primary duty of teaching and learning, as well as their general attitude towards this process in order to achieve educational goals. Lecturers' job performance is duties performed by a lecturer at a particular period in the school system in achieving organizational goals. Lecturers' job performance could be measured by the accomplishment of an assigned task or through job satisfaction and job attitudes such as job commitment, feelings of job challenge, job meaningfulness and job responsibility Selamat, Sams & Kamalu, (2013). Job performance is important to ensure the quality of instruction taking place at school. It can be argued that good performance of students depends upon job performance of their lecturers.

Some reports have shown that lecturers' self-motivation and job performance is generally on the decline in the world all over, Selamat, Sams and Kamalu, (2013). The result is the concern and need to conduct studies about this phenomenon in the various regions around the globe. A number of variables including administrative support, working conditions, professional development opportunities, and recognition for their efforts have been identified as contributing factors to this decline. However, the researcher believes that psychological elements such as emotional intelligence could also have a positive or negative impact on lecturers' self-motivation and job performance. This is because the researcher, from personal experience, has seen lecturers who find it difficult to identify when they might be feeling demotivated or stressed and lack of this awareness prevents such lecturers from taking proactive steps to manage emotions and maintain their motivation.

Emotional intelligence (EI) refers to the ability of a person in understanding the emotions of one self and the people around them. It is a sort of self-awareness that enables us to understand our feelings and manage our emotions. Salovey and Mayer

(1990) defined emotional intelligence as a form of intelligence that involves the ability to promote one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. It is the ability to perceive emotions, integrate emotions, to facilitate thoughts, understand emotions, and to regulate emotions to promote personal growth. Exramera, MridaLopez, Sanchez and Quintanaorts, (2018). Emotional intelligence requires surveillance of feelings, learning to recognize, appreciate the feelings in themselves and others and responding appropriately and effectively to implement emotional energy in once life. Emotional intelligence makes a lecturers' effective because it is very vital for lecturers to understand the emotional sides of learning for students' success and achievement. Lecturers, therefore, need to use emotional intelligence in the classroom.

Regrettably many lecturers seem not to know the role of emotional intelligence in their lives and in academic life. The intelligence that involves the ability to understand the emotions of others, notice distinction in moods, temperaments, intentions and motivations is very crucial to every lecturer which eventually results in higher performance. High interpersonal intelligence is often found in lecturers. Emotional Intelligence helps an individual to build stronger relationships, succeed at school and work, and achieve career and personal goals. It can also help you to connect with your feelings, turn intention into action and make informed decision about what matters to you. It improves communication skills, enhances social skills and create positive environment. Emotional intelligence is very important to lecturers because it builds a sense of self awareness among the lecturers so that they can categorize emotions and that of others. This also facilitates the teaching professionals to be able to identify their own emotions and thoughts, to know their strength and weaknesses, and to build self-confidence. Highly, emotional intelligent lecturers tend to motivate students better and understands

students' behaviour and psychological well-being. They can also be more sensitive towards their students' disruptive behaviours, academic performance and relationship management. Thus, it increases lecturers' job performance. (Goleman, 1995).

Zarina (2013) and Abdullah (2012), pointed that individuals with high emotional quotient have the advantage of connecting with society and situation with a positive attitude with all aspects of life, and have the advantage of building life. Chamizo, (2021) have shown that emotional intelligence, flourishing and lecturers-students' relationships are among the positive resources that promote wellbeing, psychological adjustments and job performance. Emotional intelligent of lecturers show care for students, create emotional climate in classroom that develops students learning environment and helps lecturers to become more effective to ensure students' academic achievement. Education (2023) has demonstrated that a strong propensity in emotional intelligence increases one's ability to make sound decisions, build and sustain collaborative relationships, deal effectively with stress, and cope to a greater degree with constant change. Having a high level of emotional intelligence doesn't just benefit individuals in a workplace setting, it can have a positive impact on many aspects of your life. Being able to understand and manage emotions can lead to an overall better outlook in life and leave you feeling more positive about self and situations. Thus, emotional intelligence can be described as having four branches; the ability to accurately perceive and express emotions, assimilate emotions into thought, understand emotions, and regulate emotions in the self and others.

Employees with high emotional intelligence are said to have better working relationship with other employees and they are reflected in integrity because they foster better and positive interactions which thereby lead to better performance. (Dhani and Sharma, (2016). These employees with high emotional intelligence are better at team work, accuracy and punctuality, seem more competent compared to those with low

emotional intelligence. Individuals with fixed mind set are likely to show less resilience when faced with obstacle. EI creates innovational inventiveness in people and thus helps in individual job performance and encourages job performance and communication among employees inside an organization, Niwedita, (2018)

Lecturers' attribute such as age, gender, educational qualification, and years of teaching experience has been found to play a significant role in shaping lecturers' emotional intelligence, self-motivation, and job performance. Age, for instance, has been shown to influence ways lecturers manage emotions, interact with students, and respond to professional challenges. As educators grow older, they often accumulate valuable life and classroom experiences that enhance their emotional regulation, patience, and conflict-resolution abilities Chamizo-Nieto, (2021) and Keefer, (2018). Conversely, younger lecturers tend to bring fresh enthusiasm, adaptability to technological innovations, and a willingness to experiment with new teaching strategies, although its relative inexperience may require additional support to achieve optimal performance (OECD, 2021).

Gender has also been examined as a moderating factor in lecturers' effectiveness, with some studies suggesting that female lecturers often score higher in emotional intelligence components such as empathy, interpersonal relationships, and emotional regulation. Aouani, (2019); Smieja, (2019). These qualities can foster a more supportive classroom environment and stronger student engagement. However, other findings reveal minimal or no overall performance differences between male and female lecturers, indicating that professional competencies, rather than gender, is the primary determinant of success. Bosson, (2021). Cultural expectations and gender norms, nonetheless, may subtly influence teaching approaches and interaction patterns in ways that impact learning outcomes.

Similarly, educational qualification remains a critical determinant of lecturers' capacity to deliver high-quality instruction. Higher

qualifications often correlate with course mastery, stronger pedagogical skills, and improved classroom management, all of which can enhance job performance. Lecturers with advanced degrees or specialized training tend to demonstrate higher confidence and self-efficacy, which can positively influence its motivation to adopt innovative teaching practices (OECD, 2021). Nonetheless, qualifications alone are not sufficient; outcome is achieved when paired with continuous professional job development to ensure lecturers remain responsive to evolving educational demands (Mustapha., 2023).

However, years of teaching experience contribute substantially to lecturers' job performance by broadening repertoire of instructional strategies, deepening business understanding of diverse learner needs, and improving teaching environment skills Rice, (2019; Torff & Sessions, (2020). Experienced lecturers are often better equipped to handle complex classroom situations, mentor novice colleagues, and sustain performance over time. Abdullah & Afshin, (2017). However, long tenure without ongoing professional growth can lead to reduced enthusiasm or resistance to change. Hartl & Holzberger, (2022). Therefore, the influence of teaching experience on performance is most pronounced when it is supported by reflective practice and continuous learning advantages Uniyal & Uniyal (2020).

Emotional Intelligence has the ability to better clarify general population's workplace performance as it helps employees to respond to their job appropriately. This results in positive performance and eventual organizational success. While EI primarily deals with knowing what to do, self-motivation is concerned with deeper drive to get task done. For effective and efficient job performance, a combination of emotional intelligence and self-motivation is key. To this extent, lecturers with high emotional intelligence and positive self-motivation perceive things in a wider context. They have a holistic approach towards whole teaching process and engage students to think critically

and creatively. Hence, influence of lecturers' emotional intelligence, self-motivation and instructional resources on job performance in Delta state tertiary institutions is the justification for the study.

Purpose of the Study

The primary purpose of this study was to examine relationship between Business Educators emotional intelligence, self-motivation, instructional resources, and job performance in Delta State tertiary institutions. Specifically, the study aimed to:

1. Determine the relationship between Business Educators emotional intelligence and job performance.
2. Determine the relationship between Business Educators self-motivation and job performance
3. Determine the relationship between Business Educators instructional resources and job performance
4. Determine the relationship between Business Educators emotional intelligence, self-motivation, instructional resources and job performance

Research Questions

The following research questions was raised to guide the study

1. What is the relationship between Business Educators emotional intelligence and job performance.
2. What is the relationship between Business Educators self-motivation and job performance
3. What is the relationship between Business Educators instructional resources and job performance
4. What is the relationship between Business Educators emotional intelligence, self-motivation, instructional resources and job performance

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

H₀₁: There is no significant relationship between male and female Business Educators emotional intelligence and job performance

H₀₂: There is no significant relationship between male and female Business Educators self-motivation and job performance

H₀₃: There is no significant relationship between male and female Business Educators instructional resources and job performance

H₀₃: There is no significant relationship between male and female Business Educators emotional intelligence, self-motivation, instructional resources and job performance

Methodology

A correlational research design was adopted, targeting a population of 145 Business Education lecturers. The entire population was used as a sample size due to its manageable size hence no sampling techniques were required from analysis involved Pearson Product-Moment Correlation and multiple regression. The

questionnaire was validated by three experts from faculty of education Delta State University, Abraka. Four validated instruments were used for data collection, and, self-motivation, instructional resources, and job performance in Delta State tertiary institutions. The data collected for the study were analyzed using mean and standard deviation to answer the research questions, the coefficient of 0.80 was obtained from the reliability showing that the high-level internal consistency. Pearson Product-Moment Correlation (PPMCC) was used to test hypotheses one -three on the relationship between emotional intelligence self-motivation, instructional resources and job performance of business education lecturers. Multiple Regression Analysis was employed to test hypothesis four on the joint relationship with job performance. All hypotheses were tested at 0.05 level of significance using the statistical package for social science (SPSS).

Research Question 1

What is the relationship between Business Educators' Emotional Intelligence and Job Performance?

Table 1: Pearson Correlation between Emotional Intelligence and Job Performance (N = 145)

Variables	Mean	SD	R	Sig. (p)
Emotional Intelligence	3.85	0.62	0.684	0.000
Job Performance	4.01	0.58		

The correlation coefficient ($r = 0.684$) indicates a strong positive relationship. This implies that an increase in emotional intelligence is associated with improved job

performance among Business Educators. Since $p = 0.000 < 0.05$, there is a statistically significant relationship between Emotional Intelligence and Job Performance.

Research Question 2

What is the relationship between Business Educators' Self-Motivation and Job Performance?

Table 2: Pearson Correlation between Self-Motivation and Job Performance (N = 145)

Variables	Mean	SD	R	Sig. (p)
Self-Motivation	3.92	0.59	0.721	0.000
Job Performance	4.01	0.58		

The correlation coefficient ($r = 0.721$) shows a strong positive relationship. Therefore, highly motivated Business Educators tend to demonstrate better job performance. Since $p =$

$0.000 < 0.05$, there is a statistically significant relationship between Self-Motivation and Job Performance.

Research Question 3

What is the relationship between Business Educators' Instructional Resources and Job Performance?

Table 3: Pearson Correlation between Instructional Resources and Job Performance (N = 145)

Variables	Mean	SD	R	Sig. (p)
Instructional Resources	3.76	0.67	0.596	0.000
Job Performance	4.01	0.58		

The correlation coefficient ($r = 0.596$) indicates a moderate positive relationship. This suggests that adequate instructional resources contribute positively to Business

Educators' job performance. Since $p = 0.000 < 0.05$, there is a statistically significant relationship between Instructional Resources and Job Performance.

Research Question 4

What is the relationship between Business Educators' Emotional Intelligence, Self-Motivation, Instructional Resources and Job Performance?

Table 4: Model Summary

R	R ²	Adjusted R ²	Std. Error
0.812	0.659	0.653	0.372

The coefficient of determination ($R^2 = 0.659$) indicates that Emotional Intelligence, Self-Motivation, and Instructional Resources jointly explain 65.9% of the variance in Job Performance.

Table 5: ANOVA for Multiple Regression

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	52.861	3	17.620	127.451	0.000
Residual	27.091	196	0.138		
Total	79.952	199			

Table 6: Regression Coefficients

Predictor	B	Std. Error	Beta (β)	t	Sig.
Constant	0.872	0.214	-	4.075	0.000
Emotional Intelligence	0.312	0.051	0.341	6.118	0.000
Self-Motivation	0.428	0.056	0.446	7.643	0.000
Instructional Resources	0.193	0.048	0.217	4.021	0.000

Regression Equation
 $JP = 0.872 + 0.312(EI) + 0.428(SM) + 0.193(IR)$
 Emotional Intelligence significantly predicts Job Performance ($\beta = 0.341$, $p < 0.05$). Self-Motivation significantly predicts Job Performance ($\beta = 0.446$, $p < 0.05$).

Instructional Resources significantly predict Job Performance ($\beta = 0.217$, $p < 0.05$). Among the predictors, Self-Motivation contributed the highest influence on Job Performance.

Hypothesis One

H₀₁: There is no significant relationship between emotional intelligence and job performance of male and female Business Education lecturers.

Pearson Product Moment Correlation Analysis

Variables	N	r	Sig. (p)	Decision
Emotional Intelligence	145	0.68	0.000	Reject H ₀₁
Job Performance	145			

The result revealed a Pearson correlation coefficient (r) of 0.68 with a p-value of 0.000, which is less than the 0.05 level of significance. Therefore, the null hypothesis

was rejected. This indicates that there is a significant positive relationship between emotional intelligence and job performance of Business Education lecturers.

Hypothesis Two

H₀₂: There is no significant relationship between self-motivation and job performance of male and female Business Education lecturers.

Pearson Product Moment Correlation Analysis

Variables	N	r	Sig. (p)	Decision
Self-Motivation	145	0.72	0.000	Reject H ₀₂
Job Performance	145			

The analysis yielded a correlation coefficient (r) of 0.72 and a p-value of 0.000. Since the p-value is less than 0.05, the null hypothesis was rejected. This implies that self-motivation has a significant positive relationship with job performance of Business Education lecturers.

Hypothesis Three

H₀₃: There is no significant relationship between instructional resources and job performance of male and female Business Education lecturers.

Pearson Product Moment Correlation Analysis

Variables	N	r	Sig. (p)	Decision
Instructional Resources	145	0.61	0.000	Reject H ₀₃
Job Performance	145			

The result showed a correlation coefficient (r) of 0.61 with a p-value of 0.000. Since the p-value is less than 0.05, the null hypothesis was rejected. Therefore, there is a significant positive relationship between instructional resources and job performance of Business Education lecturers.

Hypothesis Four

H₀₄: There is no significant joint relationship among emotional intelligence, self-motivation, instructional resources, and job performance of male and female Business Education lecturers.

Multiple Regression Analysis

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	3654.281	3	1218.094	48.216	0.000
Residual	6214.537	246	25.262		
Total	9868.818	249			

Model Summary

R	R ²	Adjusted R ²	Std. Error
0.764	0.584	0.579	5.026

The regression analysis produced a multiple correlation coefficient (R) of 0.764 and a coefficient of determination (R²) of 0.584. This implies that emotional intelligence, self-motivation, and instructional resources jointly explained 58.4% of the variance in job performance of Business Education lecturers. The F-value of 48.216 with a significance level of 0.000 is less than 0.05. Therefore, the null hypothesis was rejected. This indicates that emotional intelligence, self-motivation, and instructional resources jointly have a significant relationship with job performance of Business Education lecturers. The finding of the study revealed that emotional intelligence, self-motivation, and instructional resources have a significant positive relationship with the job performance of Business Educators collectively. These variables significantly predict job, with Self-Motivation emerging as the strongest predictor.

Discussion of Findings

1. Relationship between Emotional Intelligence and Job Performance of Business Education Lecturers

The findings of the study revealed a significant positive relationship between emotional intelligence and job performance of Business Education lecturers. This implies that lecturers who possess higher levels of emotional intelligence tend to perform better in professional responsibilities. Emotional intelligence enables lecturers to recognize, understand, and manage own emotions as well as those of students and colleagues, hence, promoting effective classroom management, interpersonal relationships, and instructional delivery. The finding is consistent with the work of Salovey and Mayer, who posited that emotional intelligence enhances individuals' ability to regulate emotions and make appropriate decisions. The finding also supports the studies of Dhani and Sharma and Chamizo-Nieto, who found that emotionally intelligent employees

demonstrate better workplace performance, stronger relationships, and improved effectiveness. Similarly, Education (2023) reported that emotional intelligence enhances communication, collaboration, stress management, and adaptability, all of which contribute positively to job performance.

2. Relationship between Self-Motivation and Job Performance of Business Education Lecturers

The study found a significant positive relationship between self-motivation and job performance. This indicates that lecturers who are internally motivated tend to demonstrate higher levels of commitment, dedication, and effectiveness in carrying out their academic duties. The finding agrees with the assertion of Selamat, Sams and Kamalu that self-motivation enhances job commitment, job satisfaction, and overall workplace effectiveness. Self-motivated lecturers are more likely to prepare adequately for classes, participate in research activities, seek professional development opportunities, and engage students effectively in the learning process. This finding suggests that institutional policies aimed at enhancing lecturers' motivation through recognition, promotion opportunities, conducive working environments, and welfare packages could significantly improve job performance.

3. Relationship between Instructional Resources and Job Performance of Business Education Lecturers

The findings revealed a significant positive relationship between instructional resources and job performance. This indicates that the availability and utilization of instructional resources contribute positively to lecturers' effectiveness and productivity. This finding aligns with the views of Mustapha, who emphasized that adequate teaching resources enhance instructional delivery and improve educational outcomes. Similarly, the finding supports the position of the Organization for Economic Co-operation and Development (2021), which reported that educational resources and supportive learning environments are critical factors in improving teaching effectiveness. Adequate instructional resources such as computers,

projectors, internet facilities, simulation software, business laboratories, textbooks, and other teaching aids enable lecturers to present concepts more effectively and enhance students' understanding of business-related subjects. Conversely, inadequate resources may limit lecturers' ability to implement innovative teaching methods and achieve desired instructional objectives.

4. Joint Relationship among Emotional Intelligence, Self-Motivation, Instructional Resources, and Job Performance

The study further revealed that emotional intelligence, self-motivation, and instructional resources jointly had a significant relationship with job performance of Business Education lecturers. This means that the three predictor variables collectively explained 58.4% of the variation in lecturers' job performance. The finding indicates that job performance is multidimensional and influenced by a combination of personal and environmental factors. Emotional intelligence equips lecturers with interpersonal and emotional management skills, self-motivation drives commitment and persistence, while instructional resources provide the necessary tools for effective teaching. The finding is consistent with the propositions of Bandura, which emphasizes the interaction of personal factors, behaviour, and environmental influences in determining performance outcomes. The result also supports the studies of Abdullah and Afshin and Hartl and Holzberger, who reported that both individual psychological characteristics and workplace conditions significantly influence teachers' effectiveness. Among the predictors, self-motivation emerged as the strongest contributor to job performance. This suggests that while emotional intelligence and instructional resources are important, the internal drive and determination of lecturers play the most critical role in achieving superior performance.

Conclusion

Based on the literature reviewed and the focus of this study, the findings demonstrate

that improving lecturers' emotional intelligence, strengthening self-motivation, and providing adequate instructional resources can significantly enhance job performance and contribute to the achievement of institutional goals. It can be concluded that emotional intelligence, self-motivation and instructional resources are critical psychological factors that contribute significantly to the job performance of Business Education lecturers in tertiary institutions. Emotional intelligence enables lecturers to effectively understand, manage, and utilize emotions in ways that promote positive interpersonal relationships, effective classroom management, stress management, and professional effectiveness. Similarly, self-motivation serves as the internal driving force that encourages lecturers to remain committed to their professional responsibilities, pursue continuous improvement, and maintain high levels of performance despite workplace challenges. Therefore, lecturers who possess high emotional intelligence and strong self-motivation are more likely to demonstrate greater commitment to teaching, research, student supervision, community service, and other institutional responsibilities. Consequently, enhancing emotional intelligence, self-motivation and instructional resources among Business Education lecturers can contribute positively to improved job performance and overall institutional effectiveness in tertiary institutions.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are made,

1. Tertiary institution management should organize regular training programmes, workshops, and seminars on emotional intelligence development to help Business Education lecturers improve self-awareness, emotional regulation, interpersonal relationships, and conflict management skills.
2. Institutional administrators should create motivational policies and supportive work environments that

encourage lecturers to remain committed to their duties through adequate recognition, rewards, promotion opportunities, and welfare packages.

3. Business Education lecturers should be encouraged to engage in continuous professional development activities such as conferences, workshops, research, and advanced studies to enhance their competence, confidence, and self-motivation.
4. Government and educational stakeholders should provide adequate funding and resources for tertiary institutions to improve working conditions and reduce factors that may hinder lecturers' motivation and effectiveness.

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**CEO Attributes and Accounting Aggressiveness among Listed Non-Financial Firms in Nigeria****AKPOTU, Oghenetanure Jane-Marie¹ & JABAR, Adebola Abass²**Department of Accounting,
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The effect of CEO characteristics on accounting aggressiveness among Nigerian listed non-financial companies was investigated in this study. The study concentrated primarily on the manner in which accounting aggressiveness was affected by CEO tenure, CEO ownership, board political connections, and CEO gender diversity. Using secondary data from the annual reports and accounts of 79 listed nonfinancial companies on the Nigerian Exchange Group (NGX) covering the years 2014–2023, the study used an ex post facto research design. The Beneish M-Score model was used to quantify accounting aggressiveness, and panel data regression techniques were used to analyze the data. The validity and reliability of the data were assessed using descriptive statistics, correlation analysis, Variance Inflation Factor (VIF), and Breusch-Pagan tests. The results showed that accounting aggressiveness is significantly impacted negatively by board political connections, suggesting that politically linked board members help to curb aggressive accounting methods. On the other hand, CEO gender diversity had a negative but negligible impact on accounting aggressiveness, whereas CEO tenure and ownership had favorable but negligible effects. The overall regression result showed that among Nigerian listed non-financial enterprises, accounting aggressiveness is significantly influenced by CEO qualities taken together. The study comes to the conclusion that board political connections are critical to improving financial reporting discipline and that CEO characteristics are significant predictors of accounting aggressiveness. The study recommends strengthening board oversight mechanisms, promoting diversity in top management positions, and enhancing corporate governance practices to discourage aggressive accounting behavior and improve the credibility of financial reporting.

Keywords: *CEO attributes, accounting aggressiveness, CEO tenure, CEO ownership, board political connection, CEO gender diversity, Beneish M-Score, Nigeria.*

Introduction

Accounting aggressiveness has become a major concern among corporations worldwide due to its adverse effects on the credibility of financial reporting and

investor confidence. Accounting aggressiveness refers to the deliberate use of accounting choices, estimates, and reporting practices to alter reported earnings or financial positions in a manner that may not

accurately reflect the economic reality of a firm (Ogbechie et al., 2020). While such practices may help organizations meet short-term financial targets, they often undermine transparency, accountability, and the reliability of financial statements. High-profile corporate scandals such as Enron in the United States and Parmalat in Italy demonstrated how managerial discretion in financial reporting can be exploited to conceal poor performance and mislead stakeholders (Melis, 2005). In Nigeria, similar concerns have emerged through cases such as Cadbury Nigeria and Oando, where financial irregularities raised questions regarding managerial conduct and the integrity of corporate reporting (Ogbechie et al., 2020).

The Chief Executive Officer (CEO) occupies a strategic position in determining organizational policies, financial reporting decisions, and overall corporate direction. The values, experiences, and cognitive traits of senior executives are reflected in organizational outcomes and strategic choices, according to Upper Echelons Theory. Consequently, CEOs may influence accounting policies and financial reporting practices based on their personal attributes, thereby affecting the level of accounting aggressiveness within firms. CEO attributes such as tenure, educational background, age, gender, financial expertise, and managerial experience may shape a firm's accounting choices and risk-taking behavior. Prior studies have argued that CEOs with extensive experience and financial expertise are more likely to enhance reporting quality, while those with excessive power or prolonged tenure may be more inclined to engage in opportunistic reporting practices to achieve personal or organizational objectives (Abor & Biekpe, 2021; Alves, 2021). Understanding the influence of these attributes is therefore crucial in explaining variations in accounting aggressiveness across firms.

In Nigeria, concerns about accounting aggressiveness remain significant, particularly among listed non-financial firms operating within an environment characterized by evolving governance structures, weak institutional enforcement,

and regulatory challenges (Adegbe & Fakile, 2021; Zhang, 2023). Despite the introduction of several governance reforms, including the Nigerian Code of Corporate Governance (NCCG) 2018, incidents of financial misreporting and earnings manipulation continue to occur. Evidence suggests that some firms engage in aggressive accounting practices to meet market expectations, influence investors' perceptions, or conceal poor performance (Akinbuli & Oni, 2020). Such practices undermine the credibility of financial reporting, distort investors' decision-making processes, and may weaken confidence in the Nigerian capital market. Given the substantial discretion CEOs exercise over financial reporting processes, their personal and professional characteristics may play a critical role in determining the extent of accounting aggressiveness within organizations.

The specific impact of CEO characteristics on accounting aggressiveness among listed non-financial enterprises in Nigeria has received little attention, despite the fact that previous research has looked at the connection between corporate governance and the quality of financial reporting. While previous studies have largely concentrated on board characteristics, ownership structures, and audit committee effectiveness as determinants of accounting aggressiveness, limited empirical evidence exists on the direct influence of CEO attributes on accounting aggressiveness among listed non-financial firms in Nigeria (Apriwenni et al., 2022; Boubakri et al., 2023; Ogbonna & Appah, 2021). This leaves an important gap in understanding how top executives shape financial reporting behavior in emerging economies. Consequently, this study investigates the relationship between CEO attributes and accounting aggressiveness among listed non-financial firms in Nigeria, with the aim of providing empirical evidence that can support more effective corporate governance policies, improve financial reporting quality, and enhance investor confidence.

Objective of the Study

This study aims to investigate the impact of CEO characteristics on accounting aggressiveness in Nigerian listed non-financial companies.

Research Hypothesis

The following null hypothesis was developed and evaluated at a five percent (0.05) level of significance in light of the study's goal and the previously stated research question:

H0: CEO attributes do not have a significant effect on accounting aggressiveness among listed non-financial firms in Nigeria.

Literature Review

Conceptual Review

Accounting Aggressiveness

The intentional use of accounting discretion and reporting decisions to manipulate reported earnings and financial position in a way that might not accurately reflect a company's underlying economic reality is known as accounting aggressiveness. Such practices may involve the manipulation of accruals, premature revenue recognition, delayed expense recognition, and other accounting techniques designed to achieve specific financial reporting objectives (Ogbechie et al., 2020). Although accounting standards provide managers with a degree of flexibility in financial reporting, excessive use of such discretion may reduce the reliability and transparency of financial statements.

Accounting aggressiveness has attracted significant attention from regulators, investors, and researchers due to its potential to distort financial information and mislead stakeholders. Prior studies suggest that aggressive accounting practices often arise from pressures to meet earnings targets, maintain stock market performance, or satisfy stakeholder expectations (Zhang & Liu, 2020). In emerging economies such as Nigeria, weak regulatory enforcement and institutional challenges may further increase the likelihood of aggressive financial reporting. Consequently, understanding the factors that influence accounting aggressiveness remains essential for

improving financial reporting quality and strengthening investor confidence.

CEO Attributes

CEO attributes refer to the demographic, professional, and personal characteristics of Chief Executive Officers that influence their decision-making processes and strategic choices within organizations. Upper Echelons Theory states that top executives' experiences, values, expertise, and cognitive traits have a significant impact on organizational outcomes (Hambrick & Mason, 1984). As a company's top executive, the CEO is crucial in deciding on financial reporting, business policy, resource allocation, and risk-taking practices. As a result, differences in CEO traits may have an impact on how aggressively organizations use accounting. One important CEO attribute is CEO tenure, which refers to the number of years an individual has served as Chief Executive Officer. CEO tenure may affect financial reporting behavior because long-serving CEOs often possess greater organizational knowledge and influence over corporate decisions. While extensive tenure may improve monitoring and reporting quality through accumulated experience, it may also increase managerial entrenchment and the ability to influence accounting choices for personal or organizational objectives (Baatwah et al., 2020).

CEO ownership, or the percentage of firm shares that the CEO owns, is another crucial characteristic. According to agency theory, by promoting choices that increase firm value, CEO ownership can align management interests with those of shareholders (Jensen & Meckling, 1976). However, especially in companies with inadequate governance systems, significant ownership may result in managerial entrenchment, lowering responsibility and possibly raising the risk of aggressive accounting methods.

Board political connection refers to the presence of board members who have affiliations with government officials, political institutions, or political parties. Politically connected boards may provide firms with access to valuable resources,

regulatory support, and strategic advantages. However, such connections may also reduce transparency and increase opportunities for opportunistic financial reporting if political interests influence managerial decisions (Li, 2018). Consequently, board political connections may shape the relationship between CEO decision-making and accounting aggressiveness.

The representation of gender in the CEO role, especially the presence of female CEOs in corporate leadership, is referred to as CEO gender diversity. According to research, female CEOs tend to be more risk-averse and ethically conscious when making decisions. This could encourage conservative financial reporting and lessen

the possibility of aggressive accounting methods (Peni & Väämaa, 2010). As gender diversity continues to gain attention within corporate governance discussions, it has become an important factor in understanding variations in managerial behavior and financial reporting quality.

Collectively, these attributes influence how CEOs perceive risks, respond to performance pressures, and exercise discretion in financial reporting. Therefore, examining CEO tenure, CEO ownership, board political connection, and CEO gender diversity provides valuable insight into the determinants of accounting aggressiveness among listed non-financial firms in Nigeria.

Conceptual Model Independent Variable

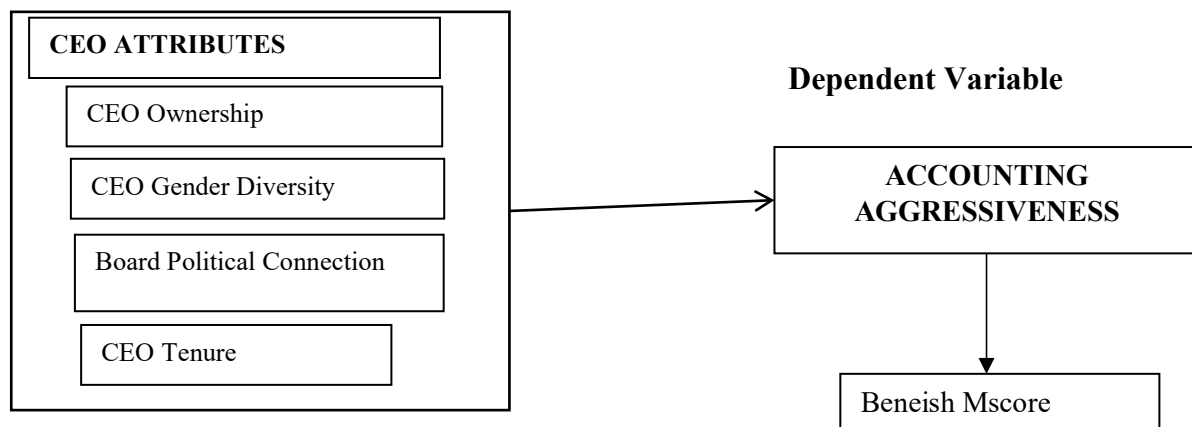


Figure 2.1

Source: Researcher's Compilation 2026

Theoretical Framework

The Agency Theory, created by Jensen and Meckling (1976), serves as the foundation for this investigation. The theory clarifies the relationship between managers (agents) and shareholders (principals), highlighting potential conflicts of interest that might occur when managers prioritize their own goals over maximizing the wealth of shareholders. Managers frequently have greater knowledge of the company's operations because ownership and control are separated in modern organizations. They may take use of this knowledge advantage by engaging in opportunistic activities like aggressive financial reporting and earnings manipulation. Consequently, accounting aggressiveness may emerge when CEOs use their discretion over financial reporting to

present a more favorable financial position or achieve personal performance targets.

The theory is particularly relevant to this study because CEO attributes such as tenure, ownership, board political connection, and gender diversity may influence managerial incentives, monitoring effectiveness, and reporting behavior. For instance, long-tenured CEOs or CEOs with significant ownership stakes may possess greater influence over corporate decisions, while politically connected boards may affect the level of oversight exercised on management. Agency Theory therefore provides a suitable framework for explaining how CEO characteristics can shape accounting reporting practices and influence the level of accounting aggressiveness among listed non-financial firms in Nigeria.

Empirical Review

Empirical evidence suggests that CEO attributes play a significant role in influencing accounting aggressiveness and financial reporting quality. Studies conducted across both developed and emerging economies indicate that characteristics such as CEO tenure, ownership, political connections, gender diversity, and risk-taking tendencies affect managerial reporting decisions. For example, Ahmed and Hashim (2023) discovered that among companies in ASEAN nations, CEOs with longer tenure and greater propensity for taking risks were more likely to participate in earnings management. Similarly, Shah and Khan (2022) reported that prolonged CEO tenure increased the likelihood of earnings manipulation among Pakistani firms, while effective governance mechanisms reduced such tendencies.

In the Nigerian context, Ozah and Okolie (2023) examined the effect of CEO attributes on real earnings management among listed oil and gas companies and found that CEO ownership significantly increased earnings management, while CEO gender exhibited a positive but relatively weak influence. Their findings suggest that CEO characteristics remain important determinants of accounting behavior in Nigerian firms. Likewise, Ali et al. (2021) established that CEOs with stronger risk-taking tendencies were more likely to engage in aggressive accounting practices, particularly in firms with weak monitoring mechanisms.

Furthermore, several studies have emphasized the role of managerial power and personal characteristics in explaining aggressive financial reporting. Hossain et al. (2022) found that powerful CEOs were more likely to engage in earnings management, while Zhang and Liu (2020) reported that CEOs with high risk tolerance tended to adopt aggressive accounting policies, whereas those with stronger educational backgrounds and professional expertise were associated with more conservative reporting practices. Similarly, Zhang and Xu (2022) concluded that CEO

overconfidence increased the likelihood of earnings manipulation, highlighting the importance of executive characteristics in shaping accounting outcomes.

Overall, the empirical literature provides substantial evidence that CEO attributes influence accounting aggressiveness. However, most existing studies have focused on developed economies or examined individual CEO characteristics in isolation. In Nigeria, empirical evidence remains relatively limited, particularly regarding the combined effects of CEO tenure, CEO ownership, board political connection, and CEO gender diversity on accounting aggressiveness measured using the Beneish M-Score. This gap provides the motivation for the present study.

Methodology

This study adopted an ex-post facto research design, which is suitable for examining the relationship between CEO attributes and accounting aggressiveness using historical data without manipulating the study variables. The design enables the investigation of how CEO characteristics influence accounting aggressiveness among listed non-financial firms in Nigeria over the period 2014–2023. Using secondary data taken from the audited annual reports and financial statements of the sampled companies, a quantitative research methodology was used. As of January 1, 2025, all 102 non-financial enterprises listed on the Nigerian Exchange Group (NGX) made up the population. Based on their continuous listing status and the availability of financial reports over the study period, 79 enterprises were chosen using a purposive sampling technique.

The Nigerian Exchange Group (NGX) Factbook was used to supplement the data collected from the sampled firms' annual reports and accounts. Panel data analysis was used in the study to investigate how CEO characteristics affect accounting aggressiveness. The properties of the variables were summarized using descriptive statistics, and the degree of relationship between the variables was investigated using Pearson correlation analysis. To verify the accuracy of the

regression assumptions, diagnostic tests such as the Variance Inflation Factor (VIF) and Breusch-Pagan tests were carried out. The analyses were conducted using STATA

statistical software. Following the objective of the study, the functional relationship is specified as:

Model I

$$AAGR_{it} = a_0 + a_1CEOTEN_{it} + a_2BPC_{it} + a_3CEOOWN_{it} + a_4CEOGD + \mu_t \quad [1]$$

Table 3.1 Measurement of Variables

Variables	Variable Code	Measurement	Sources	A-priori Expectation
Accounting Aggressiveness	AAGR	Beneish Mscore	Dinh and Choi (2023)	Nil
CEO ATTRIBUTES	CEOAT			
CEO Tenure	CEOTEN	A dummy variable of 1 indicates that the CEO of the company has been there for three years or more, and "0" indicates that the CEO has not been there for three years.	Baatwah, Salleh and Ahmad (2020)	+
Board Political Connection	BPC	Measured by number of board members with political affiliations	Xiao et al. (2023)	-
CEO Gender Diversity	CEOGD	When the CEO is male, the dummy variable is set to "1," and when the CEO is female, it is set to "0."	Ogbeide and Obaretin (2020); Chytis et al. (2023)	+
CEO Ownership	CEOOWN	The percentage of outstanding company shares directly or indirectly owned by the CEO	Olaniyi and Obembe (2020) Omoregie and Kelikume (2022)	+

Presentation of Data

Descriptive Statistics

Table 4.1 below displays the findings of the variables' descriptive statistics:

An overview of the descriptive statistics for the study's variables

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
AAGR	790	1.6075	53.6628	-265.2873	1307.9060	20.2580	473.6492
CEOTEN	790	0.6532	0.4763	0	1	-0.6436	1.4142
CEOOWN	790	5.3786	12.6262	0	63.6844	2.7376	10.2011
BPC	790	3.8772	1.5894	0	8	0.4045	2.6954
CEOGD	790	0.0367	0.1882	0	1	4.9274	25.2795

Source: Researcher's Computation (2025)

Table 4.1 presents the descriptive statistics of the study variables. The mean value of accounting aggressiveness (AAGR) is 1.6075, indicating variations in the level of aggressive accounting practices among the sampled firms. CEO tenure (CEOTEN) has a mean of 0.6532, suggesting that most CEOs served for at least three years during the study period. CEO ownership (CEOOWN) recorded an average of 5.38%,

while board political connection (BPC) has a mean value of 3.8772, indicating the presence of politically connected directors on most boards. The mean value of CEO gender diversity (CEOGD) is 0.0367, showing that female CEOs are relatively underrepresented among listed non-financial firms in Nigeria. Overall, the statistics reveal variations in both CEO attributes and accounting aggressiveness across the sampled firms.

Table 4.2**Result of Correlation Analysis**

Variable	AAGR	CEOGD	CEOTEN	CEOOWN	BPC
AAGR	1.0000				
CEOGD	-0.0082	1.0000			
CEOTEN	-0.0604	0.0008	1.0000		
CEOOWN	-0.0213	0.0097	0.1793	1.0000	
BPC	0.0026	-0.0188	0.0592	0.0144	1.0000

Source: Researcher's Computation (2025)

Table 4.2 presents the correlation matrix for the study variables. The results show that accounting aggressiveness (AAGR) is weakly and negatively correlated with CEO gender diversity (CEOGD), CEO tenure (CEOTEN), and CEO ownership (CEOOWN), with correlation coefficients of -0.0082, -0.0604, and -0.0213 respectively.

Conversely, board political connection (BPC) exhibits a weak positive correlation of 0.0026 with accounting aggressiveness. The generally low correlation coefficients among the variables indicate weak linear relationships and suggest the absence of serious multicollinearity problems, thereby supporting the suitability of the variables for regression analysis.

Table 4.3**Variance Inflation Factor (VIF) Results**

Variable	VIF	1/VIF
CEOGD	1.10	0.911626
CEOTEN	1.07	0.936855
CEOOWN	1.18	0.847588
BPC	1.23	0.810295

Mean VIF 1.15**Source:** Researcher's Computation (2025)

The Variance Inflation Factor (VIF) results for the independent variables are shown in Table 4.3. The results demonstrate that, with a mean VIF of 1.15, all VIF values fall between 1.07 and 1.23. The investigation shows that multicollinearity among the

explanatory variables is not an issue because all of the VIF values are well below the threshold of 10. This suggests that the independent variables are appropriate for regression analysis because there is little correlation between them.

Table 4.4**Breusch-Pagan/Cook-Weisberg Test for Heteroskedasticity**

Statistic	Value
Chi ² (1)	2430.63
Prob > Chi ²	0.0000

Source: Researcher's Computation (2025)

The Breusch-Pagan/Cook-Weisberg test result for heteroskedasticity is shown in Table 4.4. The test yielded a probability value of 0.0000 and a Chi-square value of 2430.63, both of which are below the significance level of 0.05. This suggests that

the data contains heteroskedasticity. The use of robust regression estimates for hypothesis testing in this study is therefore permissible because the assumption of constant variance is broken.

Test of Hypothesis

<i>Variables</i>	<i>Symbol</i>	<i>Coefficient</i>	<i>Std. Err.</i>	<i>t-Statistics</i>	<i>P>(t)</i>
<i>Constant</i>	CONS	-0.6370174	0.2085563	-3.05	0.002
<i>CEO Gender Diversity</i>	CEOGD	-0.6562284	0.379206	-1.73	0.084
<i>CEO Tenure</i>	CEOTEN	0.0562088	0.1525057	0.37	0.713
<i>CEO Ownership</i>	CEOOWN	0.0043224	0.0057433	0.75	0.452
<i>Board Political Connection</i>	BPC	-0.1399949	0.0449712	-3.11	0.002
<i>Number of Obs</i>				790	
<i>F (4, 785)</i>				3.28	
<i>Prob> F</i>				0.0112	

Source: Researcher's Computation, 2025 * significant at 1% level; ** at 5% level

The regression results on the impact of CEO characteristics on accounting aggressiveness among Nigerian listed non-financial enterprises are shown in Table 4.5. According to the findings, accounting aggressiveness is decreased by CEO gender diversity (CEOGD) and board political connection (BPC), which have negative coefficients of -0.6562 and -0.1400, respectively. Only the political relationship on the board, though, is statistically significant ($p = 0.002$). On the other hand, although their impacts are statistically insignificant, CEO tenure (CEOTEN) and CEO ownership (CEOOWN) show positive coefficients of 0.0562 and 0.0043, respectively, indicating that increases in these factors are linked to higher accounting aggressiveness.

Additionally, there was a substantial negative impact on accounting aggressiveness with a t -statistic of -3.11 and a p -value of 0.002 for board political link. While CEO tenure ($p = 0.713$) and CEO ownership ($p = 0.452$) shown

positive but minor effects, CEO gender diversity recorded a negative but insignificant effect ($p = 0.084$). Overall, the model yielded a p -value of 0.0112 and an F -statistic of 3.28. The null hypothesis is rejected since the p -value is less than 0.05. Thus, the study comes to the conclusion that among Nigerian listed non-financial enterprises, accounting aggressiveness is significantly impacted by CEO qualities.

Discussion of Findings

The results show that among Nigerian listed non-financial companies, CEO characteristics have a major impact on accounting aggressiveness. In particular, accounting aggressiveness is significantly impacted negatively by board political connections, indicating that companies with politically linked board members are less likely to use aggressive accounting techniques. This may be because politically connected directors are more concerned with maintaining their reputation and ensuring compliance with

regulatory requirements. Although it is not statistically significant, there is a negative correlation between accounting aggressiveness and CEO gender diversity. On the other hand, CEO ownership and tenure have positive but negligible effects on accounting aggressiveness, suggesting that CEOs with greater ownership stakes and those with longer tenure may be more likely to influence reporting practices. However, the evidence is not strong enough to establish a significant relationship. Overall, the results suggest that board political connection is the most influential CEO attribute in explaining variations in accounting aggressiveness among the sampled firms.

Summary

This study looked at how CEO characteristics affected accounting aggressiveness in Nigerian listed non-financial firms. The Beneish M-Score was used to as a proxy for accounting aggressiveness, and the CEO's tenure, ownership, political connections on the board, and gender diversity served as proxies for CEO characteristics. The results showed that accounting aggressiveness is significantly impacted negatively by board political connections. However, it was discovered that CEO ownership, tenure, and gender diversity had negligible effects on accounting aggressiveness. Overall, the study found that CEO characteristics had a major impact on accounting aggressiveness in Nigerian listed non-financial firms.

Conclusion

The study concludes that CEO attributes play an important role in influencing accounting aggressiveness among listed non-financial firms in Nigeria. While board political connection significantly reduces the tendency of firms to engage in aggressive accounting practices, CEO tenure, CEO ownership, and CEO gender diversity do not exert significant individual effects. The overall result, however, indicates that CEO attributes collectively have a significant effect on accounting aggressiveness, highlighting the importance of executive characteristics in promoting transparent and credible financial reporting.

Recommendations

- i. Listed non-financial firms should strengthen the quality and effectiveness of politically connected directors who can enhance regulatory compliance and discourage aggressive accounting practices.
- ii. Boards should establish stronger monitoring mechanisms for long-tenured CEOs and CEOs with substantial ownership interests to minimize the possibility of opportunistic financial reporting.
- iii. Firms should continue to promote diversity in top management positions and enhance corporate governance practices that encourage transparency, accountability, and high-quality financial reporting.

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Remittances, Exchange Rate Dynamics and Economic Growth in Nigeria: Does Institutional Quality Matters?

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Abstract

This study examined how exchange rate dynamics and institutional quality shape the remittances–growth nexus in Nigeria over the period 1996–2024. The study employed the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) framework on annual time-series data from the World Bank. The ARDL bounds test confirmed a stable long-run relationship among the variables. Findings revealed that remittances exerted a positive and significant effect on GDP in both the short run and long run, with the escalating long-run coefficient suggesting a gradual shift from consumption to investment-oriented remittance. Exchange rate depreciation amplified GDP significantly in both periods, disagreeing with the conventional Dutch Disease outcomes. Interest rate had a consistent negative effect on growth, while financial inclusion demonstrates a positive and significant relationship, confirming that deeper credit access enhances the productive intermediation of remittance inflows. However, institutional quality proxy (political stability) had negative and significant coefficients in both periods, reflecting the inadequacy of political stability alone as a governance measure and the need for multidimensional institutional reform. The study recommended the institutionalization of a remittance-investment facilitation framework, accelerated financial inclusion targeting remittance-recipient households, and comprehensive governance reforms extending beyond political stability to encompass anti-corruption enforcement, regulatory quality and property rights protection.

Keywords: Remittances; Economic Growth; Exchange Rate; Institutional Quality; Nigeria

Introduction

Remittances have emerged as one of the most distinct sources of external finance for low- and middle-income countries (LMICs), differentiated from foreign direct investment (FDI) and official development assistance (ODA) by their counter-cyclical behaviour and relative sovereign risk immunity, and direct household reach. (World Bank, 2024). Over the past few decades, international remittances have emerged as a major source of external finance for developing economies such as Nigeria, often surpassing foreign direct investment and official development assistance in several countries. These financial inflows, sent by migrants to their

home countries, play a critical role in supporting household consumption (Ibrahim et al., 2024; Yin et al., 2022), reducing poverty (Ojeyinka & Ibukun, 2024; Ejedegba, 2024), and enhancing investment in human capital (venseri-Ogbomo & Eburajolo, 2025). Beyond their microeconomic benefits, remittances have increasingly been recognized as an important macroeconomic variable with potential implications for economic growth in Nigeria (Anosike & Alfadhel, 2023).

However, the growth-enhancing effects of remittances are not automatic and may depend significantly on the broader macroeconomic environment within recipient countries such as Nigeria. One key factor that shapes the

transmission of remittance inflows into economic growth is the exchange rate. The exchange rate serves as a crucial price variable that influences the domestic value of foreign remittances, affects external competitiveness, and determines the allocation of resources between tradable and non-tradable sectors in Nigeria (Periola, 2025, Ejedegba; 2014).

According to the World Bank (2024), total remittance flows to LMICs reached \$685 billion in 2024, growing at an annual rate of 3.3% that has outpaced FDI inflows to the same economies in recent years. Within Sub-Saharan Africa (SSA), collective remittance inflows approximated \$56 billion in 2024, reflecting the continent's expansive diaspora networks and deepening transnational economic linkages (World Bank, 2024). Nigeria occupies a significant position within this regional framework, recording \$19.5 billion and \$20.93 billion in diaspora remittances in 2023 and 2024, respectively, figures that represent about 37% of total SSA remittance receipts (World Bank, 2024). These flows not only exceed official development assistance but have, in recent years, rivalled FDI in both volume and stability (Inije et al., 2025), thereby constituting a structural pillar of Nigeria's balance-of-payments position, household welfare, and macroeconomic stabilisation. Yet, the critical question of whether such inflows translate into sustained economic growth remains empirically unresolved, making Nigeria an analytically compelling and policy-urgent case.

A closer examination of Nigeria's macroeconomic landscape reveals a pattern of persistent structural fragility that constrains the remittances-growth nexus. GDP growth averaged approximately 5% annually during the 2000s, before contracting sharply to -1.6% during the 2016 foreign exchange crisis and -1.9% during the 2020 COVID-19 shock, recovering modestly to around 3.4% by 2024 (WDI, 2024). Driven by the rapid internationalisation of Nigeria's diaspora, remittance inflows expanded more than tenfold over the same period, rising from below \$2 billion in the early 2000s to \$20.93 billion in 2024.

The Central Bank of Nigeria's liberalisation of the foreign exchange market led the naira to depreciate precipitously from around ₦160/\$ in 2016 to over ₦1,480/\$ by May 2024, (Periola, 2025). This depreciation resulted in the inflation of the naira value of inward remittances, potentially incentivising increased remittance inflows, however, it reduced the real purchasing power of recipient households and raised the

cost of imported capital goods, creating opposing effects on consumption, savings, and investment that existing studies have yet to clearly distinguish (Ijokoh, 2025). These dynamics collectively suggest that the growth impact of remittances in Nigeria is conditional on a set of macroeconomic and structural factors that require explicit modelling.

A critical gap in the literature lies in the insufficient integration of exchange rate dynamics into the analysis of the remittance-growth relationship in Nigeria. While numerous studies have examined the impact of remittances on economic growth in Nigeria, many of them treat remittances as an isolated variable without accounting for the macroeconomic conditions under which they operate. Specifically, existing studies often overlook the role of exchange rate levels and volatility in influencing how remittances translate into growth outcomes in Nigeria, which may produce different outcomes under varying macroeconomic conditions. Moreover, empirical findings remain inconsistent due to differences in methodology, data coverage, and model specification, suggesting the need for more robust and context-specific analyses in Nigeria (Apanisile & Oliseyenum, 2023; Olayungbo & Quadri 2019).

Against this background, this study seeks to examine the role of exchange rate dynamics in shaping the impact of remittances on economic growth in Nigeria, with a view to providing deeper insights into the conditions under which remittances can be harnessed for sustainable development over the period 1996-2024, a timeframe that spans significant structural shifts including the post-SAP consolidation era, the 2016 foreign exchange crisis, and the post-2023 CBN exchange rate liberalisation. Given the rising volume of remittance inflows and the persistent exchange rate fluctuations observed in Nigeria, understanding the interaction between these variables is crucial for designing effective macroeconomic policies. This study also makes key distinct contributions to the literature by simultaneously incorporating institutional quality, into an Autoregressive Distributed Lag (ARDL) remittances-growth model for Nigeria and thus, providing a more robust account of the conditional pathways through which remittances affect output. Weak institutional quality can cause a range of negative effects, including macroeconomic instability and a higher cost of doing business (Ejedegba, 2025). The remainder of this paper is structured as follows: Section 2

reviews the theoretical and empirical literature; Section 3 describes the data and methodology; Section 4 presents and discusses the empirical results; and Section 5 concludes with policy implications and recommendations.

Literature Review

Conceptual Literature

Economic growth is defined as the sustained expansion in the value of goods and services produced within an economy, mostly measured by Real Gross Domestic Product (RGDP), adjusted for inflation and isolates genuine output expansion from price-level distortions (Giuliano & Ruiz-Arranz, 2025). Remittances are cross-border financial transfers from migrants to their home-country households, functioning simultaneously as private income support and a source of national foreign exchange earnings (World Bank, 2024). Remittances stimulate per-capita income through enhanced household consumption, savings mobilisation, and productive investment, while their foreign currency component helps stabilise the domestic exchange rate, mediating macroeconomic purchasing power (Ajide & Alimi, 2021). The exchange rate is the official Naira-to-Dollar price. It acts as a transmission mechanism linking external inflows to domestic macroeconomic conditions; depreciation amplifies the naira value of remittance receipts while simultaneously eroding the real purchasing power of recipient households (Periola, 2025). Institutional quality refers to the effectiveness of governance structures which shape the environment through which investments are allocated and protected, and fundamentally determines whether capital inflows generate productive returns or dissipate into rent-seeking (Catrinescu et al., 2009).

Theoretical Framework

The academic literature by Corden and Neary (1982) formalised the Dutch Disease theory, which provides the primary macroeconomic lens for understanding how large external capital inflows can simultaneously benefit and harm an economy. When remittance inflows are large relative to GDP, they generate demand pressures that cause the real exchange rate to appreciate. This appreciation reduces the competitiveness of the manufacturing and agriculture sector, potentially contracting export volumes and undermining the structural transformation necessary for sustained growth. In Nigeria, where the official exchange rate depreciated from N160

per dollar in 2016 to N1,480 in May 2024, the relationship between capital inflows and currency dynamics is particularly complex and policy-relevant (Periola, 2025). The Dutch Disease framework thus establishes the theoretical basis for including exchange rate as a core variable in the empirical model, and for expecting that the sign and magnitude of the remittances-growth effect will depend significantly on prevailing exchange rate conditions.

McKinnon (1973) and Shaw (1973) independently advanced the financial deepening hypothesis, arguing that financial repression suppresses savings mobilisation and investment, thereby constraining economic growth. The liberalisation of interest rates and financial markets, in their view, deepens the financial system and improves the allocation of capital. The McKinnon-Shaw framework predicts that the growth-enabling effect of remittances is conditioned by the depth and accessibility of the financial system. In economies where the financial system is shallow (characterised by high intermediation costs, limited banking access, and credit rationed at high interest rates), remittance inflows are more likely to be consumed rather than invested, limiting their growth contribution. This theoretical prediction provides the rationale for including both the real interest rate and domestic credit to the private sector (as a financial inclusion proxy) in the empirical model.

North (1990) established the foundational argument that institutions, defined as the formal and informal rules that structure human interaction, are the primary determinant of long-run economic performance. Strong institutions reduce uncertainty, enforce contracts, protect property rights, and create the conditions under which markets function efficiently. Therefore, institutional quality influences the degree to which formal financial channels are trusted, the cost of transferring funds through official mechanisms, and the regulatory environment that determines whether remittance-derived savings can be invested productively. Weak institutions, as documented extensively in Nigeria's governance literature, lead to misallocation, capital flight, and the perpetuation of informal intermediation, all of which undermine the growth-enhancing potential of remittance inflows.

Empirical Review

The relationship between remittances and economic growth has been investigated across

diverse country contexts and employing a wide array of econometric approaches, yet consensus remains elusive. Globally, the prevailing strand of literature tends to affirm a positive remittances-growth nexus, though the magnitude and significance of the effect are frequently conditioned by intervening macroeconomic variables. Adow (2025) examined this relationship across 15 East African countries from 2000 to 2022, employing fixed effects and System GMM, reported a significant positive association between remittances and GDP per capita growth, while also showing that financial depth enhances the effectiveness of remittances in promoting economic growth. Similarly, Yakubu et al. (2025) explored the remittance-economic growth linkage in Africa using panel data and found that the strength of the nexus is conditioned by the level of financial development and prevailing inflation dynamics. Using ARDL, Mawutor et al. (2023) found that in Ghana, remittances exert a positive and significant effect on economic growth in both the short and long run, while exchange rate depreciation operates as a drag on growth, providing comparative regional context for the Nigerian experience. This finding is significant because it directly implicates financial intermediation quality as a mediating channel. A landmark study by Delessa et al. (2024) used DOLS panel cointegration for 24 Sub-Saharan African countries from 2005 to 2019 and established that the impact of remittance inflows on per capita income is positive and significant when interacted with macroeconomic policy and institutional quality, while standalone remittance effects are modest. Taking a divergent view, Ofor et al. (2023) studied 12 African emerging economies from 1990 to 2021 using ARDL cointegration and panel mean group estimators and reported a nonsignificant negative effect of remittances on GDP growth, an outcome attributed partly to the consumptive orientation of remittance receipts and the adverse effect of domestic credit to the private sector on growth in the studied context. Similarly, Bolaji and Anyanwu (2025), employed panel ARDL for the West Africa Monetary Zone and found that institutional quality stimulates long-run growth, while diaspora remittances negatively affect growth over the long run in the absence of institutional conditioning.

Drawing on data from 10 African economies from 1980 to 2018 and applying Granger causality techniques, Lawal et al. (2022) found a bi-directional causality between economic growth

and exchange rate, and between economic growth and remittances, lending empirical support to both the J-Curve and Marshall-Lerner conditions. This suggests that exchange rate dynamics are not merely a control variable in remittance-growth models but an active channel of influence. Periola (2025) ARDL study on Nigeria revealed a complex that in the short run, remittances depress tradable sector productivity, while in the long run, the tradable sector recovers and experiences sustained gains, however, remittances did not exert a significant long-run effect on the real exchange rate in Nigeria. Musa et al. (2025) confirmed that a 1% increase in remittances is associated with a 0.25% increase in GDP growth, and that persistent inflows appreciate the naira and create inflationary pressures consistent with a mild Dutch Disease effect. Yunana et al. (2025) further showed that inward remittances positively influence Nigeria's GDP both in the short and long run, while exchange rate volatility consistently exerts a negative and statistically significant effect on growth across both time horizons. Ihezue et al. (2025) reported that diaspora remittances have a positive and significant impact on growth while international migration and exchange rate exert negative effects.

There is robust cross-country evidence affirming that strong institutions directly promote economic growth by reducing transaction costs, protecting property rights, and facilitating efficient resource allocation. Hussien (2023) found that investment-promoting and democratic institutions significantly enhance growth, while conflict-preventing institutions lose significance once investment-related institutions are controlled for, suggesting distinct channels through which governance operates. Bayar et al. (2024) also confirmed that government institutions positively and significantly affect economic growth and that there is a governance quality threshold below which the growth effect is constrained. Delessa et al. (2024) demonstrated that in the SSA, the positive effect of remittances on per capita income becomes more pronounced when interacted with institutional quality and macroeconomic stability. Bolaji and Anyanwu (2025) found specifically within the West Africa Monetary Zone that institutional quality is the growth-enabling variable, while remittances alone generate no significant long-run growth benefit. Ekeocha et al. (2023), using panel data for SSA countries, similarly show that institutional quality shapes

sectoral productivity outcomes, suggesting that governance is not exogenous to the capital formation process. Ayewumi et al. (2025) explicitly attribute the failure of remittances to generate significant growth effects in Nigeria to institutional weaknesses and consumptive remittance behaviour that institutional reform could potentially redirect. Kanwanye et al. (2025) similarly recommend improving formal remittance channels and governance frameworks as prerequisites for sustained growth contributions.

Afridi et al. (2024) demonstrated that financial development amplifies the growth-driving capacity of remittances across developing economies, confirming that deeper financial systems convert remittance inflows into productive capital more efficiently. Adow (2025) specifically showed that financial depth enhances remittance effectiveness in East Africa. Obayagbona and Osasogie (2024), studying Nigeria's financial market development using domestic credit to the private sector and broad money supply as indicators, find that formal remittance channels strengthen financial sector development when they enhance banking system liquidity and credit provision. These findings collectively justify the inclusion of both interest rate and financial inclusion alongside institutional quality in the empirical model. Despite these acknowledgements, Nigeria-specific study that formally modelled exchange rate and institutional quality as an endogenous conditioning variable

within a time-series ARDL remittances-growth framework remains relatively scarce.

Data and Methodology

This study adopted the ex-post facto research design based on the use of secondary data to test the hypotheses formulated and the need to establish a linear relationship between remittances and economic growth. This study employed annual time-series data for Nigeria covering the period 1996 to 2024. The start date of 1996 is dictated by the availability of the World Bank's World Governance Indicators (WGI), which provide the institutional quality data required for the study. All data are sourced from the World Bank World Development Indicators (WDI) database. Economic growth is proxied by Gross Domestic Product (GDP), measured in US dollars, while remittances (REM) capture personal remittance inflows in US dollars. The exchange rate (EXR) is measured using the real effective exchange rate in Naira per US dollar (N/\$), and interest rate (INT) is represented by the real interest rate in percentage terms.

Financial inclusion is proxied by domestic credit to the private sector (CPS), expressed as a percentage of GDP, while institutional quality is measured by political stability (PSTA) from the WGI, using an index score that reflects governance and stability conditions.

This model for this study draws from Igwemma et al. (2025), which examines the relationship between remittance inflows and economic growth. Their model is specified as:

$$PCINC = f(REM, EXR, FDI) \quad (1)$$

To tailor the model to our research, Equation (1) was modified by introducing the relevant variables important to the paper's objective and the model was respecified as:

$$GDP = f(REM, EXR, INT, CPS, PSTA) \quad (2)$$

The linear econometric model to be estimated in this study is expressed as:

$$LNGDP_t = \alpha_0 + \alpha_1 LNREM_t + \alpha_2 LNEXR_t + \alpha_3 LNINT_t + \alpha_4 LNCPS_t + \alpha_5 LNPSTA_t + \varepsilon_t \quad (3)$$

Where GDP is the Gross Domestic Product, REM is remittances received, EXR is the exchange rate, INT is the interest rate, CPS is domestic credit to the private sector as proxy for financial inclusion, PSTA is the institutional quality index represented as political stability, α_0 is the intercept, α_1 to α_5 are long-run elasticities, and ε_t is the stochastic error term.

The study employed the Autoregressive Distributed Lag (ARDL) approach of Pesaran, Shin, and Smith (2001) as the main estimation technique. This method accommodates both I(0) and I(1) series, compatible with small samples, and captures both short-run and long-run relationships within a single framework. The full ARDL representation is specified as:

$$\begin{aligned}
LNGDP_t = & \beta_0 + \sum_{t=1}^n \beta_1 \Delta LNGDP_{t-i} + \sum_{t=1}^n \beta_2 \Delta LNREM_{t-i} + \sum_{t=1}^n \beta_3 \Delta LNEXR_{t-i} + \sum_{t=1}^n \beta_4 \Delta INT_{t-i} \\
& + \sum_{t=1}^n \beta_5 \Delta CPS_{t-i} + \sum_{t=1}^n \beta_6 \Delta LNPSAT_{t-i} + \mu_t + \delta_1 LNREM_{t-i} + \delta_2 LNEXR_{t-i} + \delta_3 INT_{t-i} \\
& + \delta_4 CPS_{t-i} + \delta_5 PSTA_{t-i} + \varepsilon_t
\end{aligned} \quad (4)$$

The associated Error Correction Model (ECM) that captures short-run adjustment dynamics is:

$$\begin{aligned}
LN\Delta GDP_t = & \beta_0 + \sum_{t=1}^n \beta_1 \Delta LNGDP_{t-i} + \sum_{t=1}^n \beta_2 \Delta LNREM_{t-i} + \sum_{t=1}^n \beta_3 \Delta LNEXR_{t-i} + \sum_{t=1}^n \beta_4 \Delta INT_{t-i} \\
& + \sum_{t=1}^n \beta_5 \Delta CPS_{t-i} + \sum_{t=1}^n \beta_6 \Delta LNPSAT_{t-i} + \varphi_1 ECM_{t-1} \\
& + v_t
\end{aligned} \quad (5)$$

Where Δ is the first-difference operator, the optimal lag length for the dependent and independent variables was selected by the Schwarz Information Criterion (AIC), β_1 to β_6 are the long-run coefficients, and μ_t is the white noise error term. The ECM_{t-1} is the lagged error correction term derived from the long-run cointegrating relationship, and ϕ is the speed-of-adjustment coefficient, expected to be negative and statistically significant and it indicates the proportion of any disequilibrium from the long-

run path that is corrected within each year. A series of diagnostic tests were conducted to ensure the validity of the model. These include unit root tests (ADF and PP) for stationarity, the ARDL bounds test for cointegration, and post-estimation tests such as the Breusch-Godfrey LM test for serial correlation, Breusch-Pagan-Godfrey test for heteroskedasticity, Jarque-Bera test for normality, Ramsey RESET test for specification, and CUSUM/CUSUMSQ tests for stability.

Results and Discussions

Table 1: Descriptive Statistics

	GDP	REM	EXR	INT	CPS	PSTA
Mean	3.37E+11	1.41E+10	113.4807	4.372767	10.60926	35.17078
Median	3.39E+11	1.92E+10	101.4484	5.790567	9.760381	34.17995
Maximum	6.68E+11	2.43E+10	273.0000	18.18000	19.62560	46.83835
Minimum	5.91E+10	2.97E+08	63.92678	-25.7765	6.174444	28.56171
Std. Dev.	1.89E+11	9.06E+09	48.09496	8.205960	3.226756	4.286308
Skewness	0.149099	-0.69364	2.020652	-1.61349	1.237138	0.867546
Kurtosis	1.841530	1.658516	6.732319	7.423073	4.159891	3.264010
Jarque-Bera	1.729095	4.499993	36.56700	36.22224	9.023089	3.721963
Probability	0.421242	0.105400	0.000000	0.000000	0.010981	0.155520
Sum	9.77E+12	4.08E+11	3290.941	126.8102	307.6686	1019.953
Sum Sq. Dev.	9.96E+23	2.30E+21	64767.50	1885.458	291.5347	514.4281
Observations	29	29	29	29	29	29

Source: Author's computation (2026)

The descriptive statistics in Table 1 show that GDP and REM move on a comparable scale, with GDP averaging about \$337 billion and remittances averaging \$14.1 billion over the period. The median values of \$339 billion for GDP and \$19.2 billion for REM suggest that remittance

inflows form an important share of the economy, although the lower mean of REM reflects some downward pulls from earlier low inflow periods. The wide ranges of GDP from \$59.1 billion to \$668 billion and REM from \$0.297 billion to \$24.3 billion show substantial growth in both aggregate output and remittance inflows over time. This

joint growth aligns with movements in the exchange rate (EXR), which averages 113.48 N/\$ but reaches as high as 273 N/\$, showing significant depreciation over the study period. The strong positive skewness (2.02) and kurtosis (6.73) of EXR indicate pronounced spikes during periods of shifts in the dollar value of both GDP and remittances. During the same period, interest rates (INT) displayed high variability, averaging 4.37% , and ranging between -25.78% to 18.18%. This indicates that inflationary pressure overlapped with fluctuations in both GDP and remittance inflows. On the financial side, CPS (financial inclusion) averages 10.6% of GDP, implying that credit to the private sector remains

relatively modest compared to the size of the economy, even as GDP and remittances expand. Its positive skewness suggests gradual improvement over time, consistent with rising economic scale. Meanwhile, institutional quality (PSTA) averaged 35.17, indicating a not so strong institutional environment throughout the period in which GDP and remittance inflows increased. The Jarque-Bera results confirm that GDP, REM, and PSTA are normally distributed, whereas EXR, INT, and CPS deviate from normality, reflecting the influence of macroeconomic shocks within the system.

Table 2: Summary of unit root test

ADF						PP			
Variable		t-Statistic	5% Critical Values	Comment	Order	t-Statistic	5% Critical Values	Comment	Order
GDP	LEVEL	-1.3388	-2.9719	Non-Stationary		-1.3388	-2.9719	Non-Stationary	
	1ST DIFF	-3.3205	-2.9763	Stationary	I(1)	-3.3444	-2.9763	Stationary	I(1)
REM	LEVEL	-1.3568	-2.9719	Non-Stationary		-1.3694	-2.9719	Non-Stationary	
	1ST DIFF	-4.5081	-2.9763	Stationary	I(1)	-4.4874	-2.9763	Stationary	I(1)
EXR	LEVEL	-8.7932	-2.981	Stationary	I(0)	-2.7339	-2.9719	Non-Stationary	
	1ST DIFF					-5.7728	-2.9763	Stationary	I(1)
INT	LEVEL	-4.9245	-2.9719	Stationary	I(0)	-4.9291	-2.9719	Stationary	I(0)
CPS	LEVEL	-3.0925	-2.9763	Stationary	I(0)	-1.9592	-2.9719	Non-Stationary	
	1ST DIFF					-3.5797	-2.9763	Stationary	I(1)
PSTA	LEVEL	-2.7472	-2.9719	Non-Stationary		-2.5326	-2.9719	Non-Stationary	
	1ST DIFF	-6.6956	-2.9763	Stationary	I(1)	-6.7676	-2.9763	Stationary	I(1)

Source: Author's computation (2026)

Table 2 presents the unit root results from both ADF and PP tests, showing a consistent pattern across the variables. At levels, GDP and REM are non-stationary, as their test statistics are less than the critical values and their p-values exceed 0.05. However, after first differencing, both variables become stationary at the 5% level, indicating that they are integrated of order one, I(1). For EXR, the ADF test suggested stationarity at level, but the PP test indicates non-stationarity. Given this mixed outcome, the PP result is considered, and EXR becomes stationary after first differencing, implying I(1). INT is stationary at level under both ADF and PP tests, with test statistics exceeding critical values and p-values below 0.05, indicating it is integrated of order zero, I(0). CPS is non-stationary at level but becomes

stationary after first differencing based on the PP test, thus classified as I(1). Similarly, PSTA is non-stationary at level but achieves stationarity at first difference under both tests, confirming it as I(1).

Table 3: Correlation Matrix

Covariance Analysis: Ordinary						
Correlation	GDP	REM	EXR	INT	CPS	PSTA
GDP	1					
REM	0.79817	1				
EXR	0.14176	-0.22345	1			
INT	-0.17065	-0.08517	0.08202	1		
CPS	0.245416	0.524186	-0.26939	0.464075	1	
PSTA	-0.50769	-0.55623	0.537537	0.200585	-0.05348	1

Source: Author's computation (2026)

The correlation results in Table 3 show a clear pattern among the key variables. GDP and remittances (REM), exhibit a strong positive correlation (0.798) that suggests that periods of higher remittance inflows coincide with periods of high economic output. The exchange rate (EXR) shows a weak positive relationship with GDP (0.142) but a negative association with REM (-0.223), indicating that currency depreciation does not strongly align with output growth nor does it coincide with positive remittance inflows. Interest rate (INT) has a weak negative correlation with both GDP (-0.171) and REM (-0.085), suggesting that higher interest rates are associated with slight reductions in both output and remittance inflows. CPS displays a moderate positive correlation with REM (0.524) and a weaker

positive link with GDP (0.245), indicating that access to finance is more closely related with remittance inflows than with aggregate output. However, CPS is negatively related to EXR (-0.269), which may be because periods of exchange rate depreciation coincide with weaker credit access. Finally, institutional quality (PSTA) is negatively correlated with both GDP (-0.508) and REM (-0.556), suggesting that political stability does not lead to increases in output and remittance inflows over the period. At the same time, exchange rate movements align more closely with changes in institutional conditions with PSTA being positively correlated with EXR (0.538). Overall, the correlation summary indicates the absence of multicollinearity among the explanatory variables included in the model.

Table 4: ARDL Bounds Cointegration test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	17.80305	10%	2.26	3.35
k	5	5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68

Table 4 presents the ARDL bounds test results. The computed F-statistic (17.803) is higher than the upper bound critical values at all conventional significance levels, hence the

null hypothesis of no cointegration is rejected. This confirms the existence of a stable long-run equilibrium relationship between the variables used in this study.

Table 5: Short-Run Regression results

ARDL Short run Form				
Variable	Coefficient	Std. Error	t-statistic	Prob.
D(LNREM)	0.100015	0.030237	3.307686	0.0037
D(LNEXR)	1.079013	0.048228	22.37313	0.0000
D(INT)	-0.01276	0.002024	-6.30428	0.0000
D(CPS)	0.028187	0.007117	3.960458	0.0008
D(PSTA)	-0.01467	0.004774	-3.07249	0.0063
CointEq(-1)	-0.46344	0.079715	-5.81366	0.0000

Source: Author's computation (2026)

Table 5 above indicates that in the short run, all variables are statistically significant at all levels. Changes in remittances (LNREM) have a positive effect on economic growth, with a 1% increase in remittances leading to approximately a 0.10% increase in GDP. Similarly, short term changes in the exchange rate (LNEXR) exerts a strong positive effect on GDP in the short run, with a 1% depreciation resulting in about a 1.08% increase in GDP. Interest rate (INT) has negative impact on GDP as 1% increase in interest rate leads to a 0.0128% decrease in GDP.

Financial inclusion (CPS) shows a positive relationship with GDP. A 1% increase in CPS leads to approximately a 0.0282% increase in GDP in the short run, while institutional quality (PSTA)

has a negative coefficient. This implies that political stability results in

decreases in the level of output. The error correction term CointEq(-1) is negative and highly, indicating that approximately 46.3% of short-run distortions from equilibrium are corrected within one period.

Table 6: Long-Run Regression results

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNREM	0.215812	0.039619	5.447106	0.0000
LNEXR	1.389967	0.11101	12.5211	0.0000
INT	-0.02753	0.006167	-4.46479	0.0003
CPS	0.060821	0.014783	4.114322	0.0006
PSTA	-0.07729	0.010734	-7.19974	0.0000
C	17.20264	1.114899	15.42978	0.0000
R-Squared	0.99582	D-W Stat	1.671726	
Adjusted R-squared	0.99406	F-stat	565.8427	
		Prob(F-stat)	0.0000	

Source: Author's computation (2026)

In the long run, a 1% increase in remittances leads to about a 0.22% increase in GDP, with (LNREM) maintaining the positive and statistically

significant relationship it had with GDP in the short run. Exchange rate (LNEXR) also extends its short run positive effect to the long run, as a 1%

depreciation in exchange rate results in approximately a 1.39% increase in GDP in the long run. Interest rate (INT) remained negative in the long run with a one 1% increase in interest rate leading to about 0.0275% decrease in GDP. CPS continued to exhibit a positive relationship in the long run as in the short run, with a 1% increase in CPS resulting in approximately 0.06%

increase in GDP. Institutional quality (PSTA) retains a negative coefficient, as 1% increase in PSTA leads to about a 0.08% decrease in GDP. The model is highly fitted, having a very high R-squared and adjusted R-squared of (0.9958) and (0.9941) respectively. The F-statistic confirmed that the model is jointly significant.

Table 6: Ramsey RESET test

Ramsey RESET Test			
	Value	df	Probability
t-statistic	1.178481	18	0.2539
F-statistic	1.388818	(1, 18)	0.2539
Likelihood ratio	2.081093	1	0.1491

Table 6 present the Ramsey RESET test results and it indicate that the model is correctly specified. Since all reported probabilities exceeds 0.05, the null hypothesis of correct functional

form cannot be rejected. This suggests that there is no evidence of model misspecification, and the model does not suffer from omitted variable bias or incorrect functional form.

Table 7: Breusch-Godfrey Serial Correlation LM Test

F-statistic	1.188320	Prob. F(2,17)	0.3288
Obs*R-squared	3.434336	Prob. Chi-Square (2)	0.1796

The Breusch–Godfrey LM test results in Table 7 indicate that the probability value of the F-statistic and Chi-Square are both greater than the 5% significance level hence, the null hypothesis of

no serial correlation cannot be rejected. This implies that the residuals are not serially correlated, and the model satisfies the assumption of error independence.

Table 8: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.467876	Prob. F(8,19)	0.8636
Obs*R-squared	4.608194	Prob. Chi-Square(8)	0.7985
Scaled explained SS	1.676054	Prob. Chi-Square(8)	0.9894

Table 8 shows the Breusch–Pagan–Godfrey test results which indicates that all the probabilities are well above the 5% significance level, and the

null hypothesis of homoskedasticity cannot be rejected. This model satisfies the assumption of homoskedasticity.

Fig 1: Normality Test

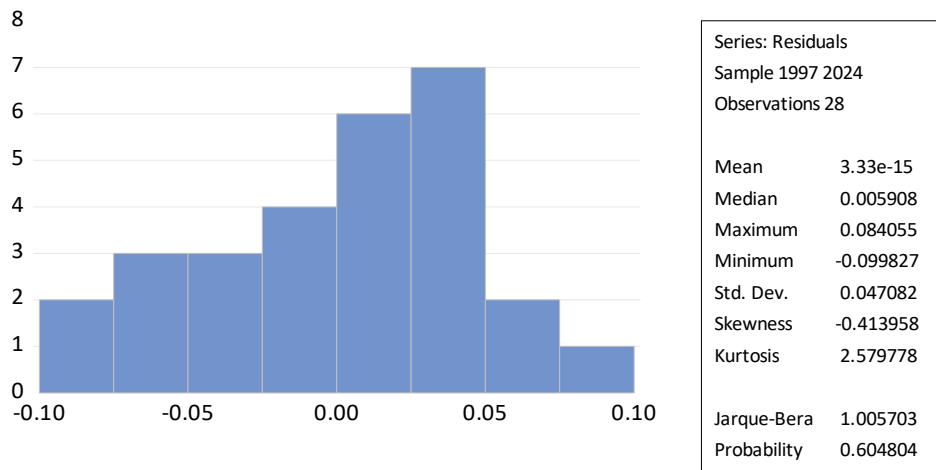
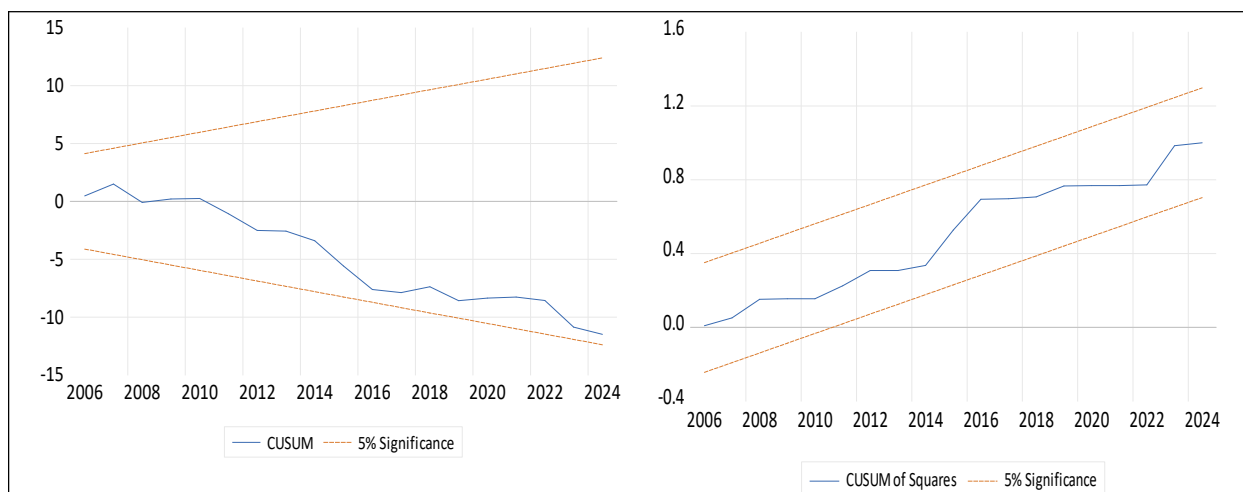


Figure 1 presents the normality test results. The residuals are mildly left-skewness at -0.413958, having a slightly longer left tail, though the deviation is not severe. A kurtosis value slightly below 3 indicates a platykurtic distribution, meaning the data are somewhat flatter than a

normal distribution but still close to normal. More importantly, the Jarque-Bera probability value of 0.604804 is greater than 0.05%, hence, the null hypothesis of normality cannot be rejected. The residuals are normally distributed and suitable for inference in the model.

Fig 2a and 2b: CUSUM & CUSUM of Squares



Source: Eviews output (2026)

Figure 2a and 2b presents the stability diagnostic tests, showing the CUSUM and CUSUM of squares plots respectively. Since both plots lie well within the 5% significance boundaries without crossing the critical lines, it indicates that

the parameters of the model are stable over the sample period. No evidence of structural shifts in the model, which means the coefficients are reliable and consistent over time.

Discussion of Findings

The positive and significant positive effect that remittances exhibited in the short and long run is consistent with the predictions of the Keynesian income-expenditure model that in credit-constrained economies, remittances augment household income and stimulate aggregate demand through consumption multiplier effects. The finding resonates Yunana et al. (2025), who confirmed that inward remittances positively influence Nigeria's GDP in both time horizons. Crucially, the long-run elasticity (0.22) exceeds the short-run elasticity (0.10) suggesting that remittance inflows are used more productively over time with the view that remittance recipients gradually shift from consumption-oriented to investment-oriented behaviour as inflows stabilise and financial access improves. Given that the country received \$20.93 billion in diaspora remittances in 2024, the escalating long-run effect is economically significant for Nigeria. However, against the backdrop an average GDP growth of only 3.4% by 2024, and two major economic recession within a decade, the positive impact of remittance must be viewed cautiously to avoid overestimating its importance as a standalone growth engine. The positive and highly significant impact of exchange rate both in the short run and long run diverge from the conventional Dutch Disease prediction that sustained foreign currency inflows appreciate the domestic exchange rate and crowd out the tradeable sector. It rather indicates that depreciation per se drives growth, reflecting a well-documented structural feature of Nigeria's economy that as the naira depreciates, the naira value of remittance inflows inflates sharply and boosts household income in local currency. This is consistent with Periola (2025), who found that short-run tradeable sector productivity was suppressed, with recovery only emerging over longer horizons. Lawal et al. (2022), who documented bidirectional Granger causality between economic growth and exchange rate dynamics across African economies. The relatively larger long-run exchange rate elasticity suggests that the effects of currency depreciation compound over time, reflecting the cumulative inflationary consequences of the Central Bank of Nigeria's 2023 foreign exchange liberalisation,

which allowed the naira to depreciate from roughly ₦460/\$ to over ₦1,480/\$ within a year (Periola, 2025). The descriptive statistics reinforce this interpretation: the exchange rate variable exhibits extreme positive skewness (2.02) and kurtosis (6.73), capturing the sharp, non-linear depreciation episodes that characterise Nigeria's foreign exchange history. The strong positive exchange rate coefficient also predicts that the effectiveness of remittances in promoting growth depends on the currency conditions. The negative findings on interest rate in both the short run and long run suggests that high interest rates raise the cost of credit, suppress private investment, and constrain the productive intermediation of external inflows. This finding is particularly salient because, even with the increased flow of diaspora remittances into Nigeria, of the extreme volatility of interest rate shown by the descriptive statistics discouraged remittance recipients from channelling inflows into formal investment. The prospect of high borrowing costs and volatile returns reduces the incentive for recipient households to deposit funds with formal institutions or leverage remittances as collateral for productive investments, consistent with Ayewumi et al.'s (2025) conclusion that the predominance of consumptive over investment-oriented remittance use in Nigeria reflects not merely cultural habit but a rational response to financial market conditions. These suggest that Nigeria's monetary policy framework directly mediates the growth-enabling capacity of remittance inflows, a conditioning channel largely overlooked by existing literature. Financial inclusion, proxied by domestic credit to the private sector as a share of GDP was positive and significant in the short run and long run, affirming that financial access amplifies the growth impact of remittances and is consistent with Africidi et al. (2024) conclusion that financial development amplifies the growth-driving capacity of remittances across developing economies, Adow (2025) findings that financial depth specifically enhances remittance effectiveness in East Africa. Yakubu et al. (2025) similarly confirmed that the remittance-growth nexus is conditioned by the level of financial development. The EFInA (2023) Access to Financial Services survey reported that 26% of Nigerian adults remain entirely excluded

from the formal financial system, with exclusion concentrated among rural populations, women, and low-income households, precisely the demographic groups most likely to be primary remittance recipients. The positive skewness of CPS suggests gradual improvement in credit access over time, but the pace remains insufficient relative to the volume of remittance inflows, indicating that while remittances do generate positive growth effects, the magnitude of these effects is constrained by the shallow financial system. This result support the identification, and validate the inclusion of financial inclusion as a key a conditioning variable. Institutional quality, proxied by political stability index, is negative and statistically significant in both the short run and long run. A finding that is most unexpected this study, and contradictory to North (1990) argument that strong institutions are the primary determinant of long-run economic performance, as well as the empirical conclusions of Hussen (2023), Bayar et al. (2024), and Delessa et al. (2024), all of whom document a positive institutional quality-growth nexus. However, this result can be linked to multiple plausible interpretations, consistent with the Nigerian political economy plagued with perceived likelihood of political instability and violence.

Conclusion

This study examined the roles of key exchange rate in the nexus between diaspora remittances and economic growth in Nigeria over the period 1996–2024, employing an Autoregressive Distributed Lag (ARDL) framework that found a stable long run relationship with a moderate annual speed of adjustment. The findings show that remittances constitute a significant driver of economic growth in Nigeria. However, the magnitude of this contribution is conditioned by the macroeconomic such as exchange rate and institutional environment in which remittances are received and deployed. The interest rate and financial inclusion findings collectively affirm that the productive intermediation of remittance inflows is constrained by the shallowness of Nigeria's formal financial system, while the exchange rate results highlight the complex and amplifying role of currency depreciation in

transmitting the effects of external inflows to domestic output. Rather than negating the importance of governance, the negative institutional quality coefficient points specifically to the inadequacy of quality institutions in Nigeria, thereby reinforcing the need for institutional reforms.

In the light of the above, the study recommends the following:

- i. the Central Bank of Nigeria and the Federal Ministry of Finance should institutionalise a dedicated remittance-investment facilitation framework that channels a proportion of inflows into productive sectors through diaspora bonds, matched savings schemes, and targeted investment corridors in agriculture, manufacturing, and infrastructure. Such instruments would convert the positive but modest remittance-growth elasticities in this study into transformative capital flows, consistent with Nigeria's ambition to grow beyond oil dependence.
- ii. with respect to the moderating role of institutional quality, this study signals that political stability alone is insufficient to create the institutional conditions under which remittance inflows generate productive returns, hence the Federal Government should prioritise governance reforms that extend beyond the maintenance of political stability to encompass measurable improvements in anti-corruption enforcement, regulatory quality, and property rights protection.
- ii. in direct response to evaluating financial inclusion as a channel of remittance effectiveness, the CBN should accelerate the implementation of its financial inclusion strategy with explicit targeting of remittance-recipient households in rural and semi-urban communities. This should encompass the expansion of agent banking, mobile money operations, and diaspora savings products that convert inflows into formal intermediated capital, thereby amplifying the positive CPS-growth relationship identified in this study.

This study is subject to several limitations that should be acknowledged. The study's 29-observation dataset, constrained by the 1996 start date imposed by the availability of the World Governance Indicators, reduces degrees of freedom and may limit the precision of long-run estimates. The proxy choices for financial inclusion (domestic credit to the private sector) captures the supply side of formal financial intermediation but does not directly measure individual-level financial access while institutional quality (political stability) captures only one dimension of the multifaceted governance environment. Future studies should consider panel extensions across Nigerian states or comparable SSA economies to exploit cross-sectional variation and expand sample sizes. Also, incorporate broader financial inclusion indices, and multidimensional institutional quality index.

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Religious Fanaticism and Underdevelopment in Nigeria's Fourth Republic

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Abstract

Political instability, religious extremism, ethnic nationalism, youth unrest, and other societal issues hinder national development, with religious extremism posing the greatest challenge. Although the global impact of religious extremism on national development is widely recognized, researchers have given limited attention to its role in fostering underdevelopment in Nigeria's Fourth Republic. The study examined the effect of religious fanaticism on underdevelopment in Nigeria's Fourth Republic. The study utilized a cross-sectional research design, collecting data from 750 respondents, including Christian leaders, Muslim leaders, traditional leaders, youth leaders, and leaders of civil society organizations. Participants were chosen through a stratified random sampling method. Data analysis was conducted using correlation and regression methods with the assistance of the Statistical Package for Social Sciences (SPSS) version 21. Religious fanaticism significantly and positively influences underdevelopment in Nigeria's Fourth Republic. In recent times, there has been an increase in ethnic chauvinism, ethnic politics, ethnic consciousness, ethnic sentiment, and religious prejudice and fanaticism that negatively impact Nigeria's national development. Religious extremism negatively affects national development in Nigeria, endangering lives, properties, and business growth in the Fourth Republic. The rising prevalence of religious terrorism has created an environment of insecurity, deterring both local and foreign investors. The study offers empirical insights into the relationship between religious fanaticism and underdevelopment in the Nigerian context. Christian and Muslim religious leaders should be encouraged to pursue comprehensive training through quality religious education. This approach will equip them with strong ethical principles, moral standards, core values, and a positive life philosophy essential for effective religious leadership, nation-building, and fostering national development.

Keywords: Religious, fanaticism, underdevelopment, national development

Introduction

Religion is a fundamental aspect of human relationships and social activities, shaping

interactions and influencing social and economic activities both positively and negatively. Religious beliefs encourage individuals to align with others who share their faith, perpetuating cultural and spiritual practices. According to Yakubu et al. (2021), while the positive impacts of religion can promote political and economic development, the negative aspects often hinder progress. For example, religion can foster strong bilateral trade relations and diplomatic ties among nations with shared religious affiliations, leading to concessions such as relaxed immigration policies and the exchange of expertise for industrial development (Ogunleye, 2021; Adarigho, 2023).

However, religion has also been a source of conflict throughout history. Recent instances include Islamic extremist actions in the Middle East and the power struggles between Sunni and Shia groups, the persecution of Rohingya Muslims in Myanmar, and the Boko Haram insurgency in Nigeria (Ituma et al., 2022). Nigeria, despite its potential, continues to grapple with severe socio-economic and political challenges. Over 87% of Nigerians live in extreme poverty, and issues such as judicial inefficiency, corruption, inadequate infrastructure, inconsistent trade policies, and a declining oil industry have stifled growth (Haaga & Ngbea, 2023). Additional challenges include inflation, youth unemployment, and social conflicts like the Niger Delta militancy, Boko Haram extremist group, and clashes between farmers and herders, all of which have led to significant loss of life and property (Olorunda, 2023).

Religion has also played a divisive role in Nigeria, particularly due to tensions between the two dominant faiths, Islam and Christianity. This religious pluralism has fueled acrimony, division, and unhealthy competition among ethnic groups, complicating efforts at unity. Umeanolue (2020) points out that the geographical concentration of Muslims in the northern region and Christians in the South has intensified these divisions. As Emoghene &

Okolie (2020) explain, religious extremism has often been used as a tool for violence, power struggles, and socio-economic advantage, leading to widespread destruction and questioning the country's unity.

While religion is central to country's development in many societies, its misuse in Nigeria has undermined both political stability and economic progress, leaving the nation struggling with persistent conflicts and developmental challenges. This study thus examined the effect of religious fanaticism on underdevelopment in Nigeria's Fourth Republic.

Literature Review

Religious Fanaticism

The word "religion" comes from three Latin terms: *religare*, *religio*, and *religere*, all of which imply a binding duty that cannot be overlooked or evaded. As a key aspect of the oldest of human thought, religion is also among the most difficult concepts to define. Theologians and social scientists often disagree on the best way to understand religion, not necessarily due to personal biases but because of the inherent complexity in grasping its profound essence. Perspectives on religion vary depending on disciplinary focus. For instance, sociologists view religion primarily as a social phenomenon, anthropologists consider it a component of culture, and theologians regard it as the foundation of civilization and the driving force behind human decisions, actions, and societal structures (Okpala & Onodugo, 2023). Amadi-Nche (2020) describes religion as humanity's perception of a sacred design encompassing all beings, human or otherwise. Simply put, religion reflects a belief in a universe imbued with meaning beyond human existence. Emoghene and Okolie (2020) emphasize that religion encompasses all dimensions of human spiritual life, representing what is ultimate, infinite, and impartial. In its broadest sense, religion is fundamentally about ultimate concerns what is and should be of the highest priority.

From an anthropological and sociological perspective, religion can also be understood as as humanity's response to existential needs, compelling individuals to connect with a greater reality that offers stability, prestige, and permanence. It is a universal phenomenon, expressed through devotion to God or higher powers via rituals, ceremonies, and deeply held beliefs. However, this devotion can sometimes prioritize outward expressions over inner spiritual transformation. As Okpala and Onodugo (2023) observe, many individuals hold religion so dear that they are willing to sacrifice their most valuable possessions, including their lives, for their faith. This fervent devotion often leads to violence and intense reactions when religious beliefs are challenged or questioned.

Fanaticism, as Omomia (2015) notes, is characterized by excessive passion. Ede (2020) defines it as an extreme zeal or excitement that surpasses reasonable boundaries, potentially leading to harmful or violent behavior. Religious fanatics are individuals who display excessive zeal in their beliefs and practices, often to the detriment of others. Oduwale and Fadeyi (2013) describe religious fanaticism as extreme, violent fervor marked by exaggeration and irrational behavior. It involves using violence to impose beliefs or doctrines, reflecting an unmoderated and unreasonable attitude toward religion.

Religious fanaticism can also be described as the naive conviction in the absolute correctness of one's beliefs, coupled with the justification of coercion to make others adopt the same perspective. This phenomenon can manifest directly or indirectly at institutional, group, or individual levels, often with negative consequences for interpersonal relationships (Amadi-Nche, 2020). Ultimately, religious fanaticism undermines the essence of faith by promoting intolerance, violence, and division.

According to Ofusaia and Eboh (2015), fanaticism is the behavior of being excessively irrational in one's devotion or zeal for religion or belief. Religious fanaticism involves the misuse of religion for

harmful or ulterior motives, often serving self-centered political goals or personal egotism. It encompasses religious practices, beliefs, actions, and behaviors that deviate significantly from the core principles and norms of religion. Essentially, it reflects extreme attitudes and actions that transform religion from a force for social cohesion and stability into a catalyst for conflict, destruction, and chaos. In the context of this study, religious fanaticism is understood as the fervent practice of one's religion, often at the expense of those who adhere to other faiths.

Underdevelopment

Underdevelopment is a condition that leads to social and political stagnation within a society, often characterized by a lack of critical and analytical thinking. One of its most damaging manifestations is imitation, where individuals fail to engage their intellectual capacities to improve their lives or contribute meaningfully to societal progress. The tendency to blindly adopt the oppressor's power or conform to established norms and practices reflects a moral failure and diminishes the uniqueness of human potential. Contributing to underdevelopment in many third-world countries are external factors like the lingering effects of colonialism and neocolonialism, alongside internal issues such as corruption, prebendalism, and ineffective leadership (Dantani, 2017).

Ingram (2018) describes underdevelopment as conditions marked by poverty and exploitation, often indicating a relative backwardness compared to established capitalist countries. It reflects disparities in economic systems, human resource capacities, infrastructure, regional financial capabilities, and access to resources. The historical context, societal structures, erratic growth patterns, environmental control, and inadequate population planning further exacerbate underdevelopment in these nations. Otok et al. (2021) identify several characteristics of underdeveloped countries, including a labor force with a large percentage of unskilled

workers, insufficient physical capital, low GDP, considerable income inequality, and significant wage disparities between skilled and unskilled labor.

Development, in contrast, is a multifaceted concept that differs depending on the observer's viewpoint. It signifies the process of societal and economic change driven by the interactions between the environment and culture. Emoghene and Okolie (2020) equate development with modernity and progress, encompassing cultural growth (customs, values, and traditions), personal growth (psychological pathways of individuals), and physical growth (technological advancements and man-made goods). According to Oladosu (2015), development involves eliminating dependency, fostering economic expansion, improving human welfare, and building capacity. For Okolie and Osayande (2021), development aims to address unemployment, inequality, and poverty reduction, with these issues serving as benchmarks for assessing progress.

A critical obstacle to regional development is the lack of stakeholder involvement in project planning and implementation. Effective development focuses on the needs and perspectives of local populations, who are best positioned to define what development means in their context. As outlined in the 1986 United Nations Declaration on the Right to Development, human beings should be the primary actors and beneficiaries of development efforts. In Nigeria, community involvement and social mobilization are pivotal to achieving sustainable development. Social mobilization involves rallying diverse groups, including community members, civil society organizations, and opinion leaders, around a shared cause to drive behavioral change. In contrast, community engagement brings together people from various backgrounds within a community to work toward collective goals that may not necessarily focus on specific behaviors. Social mobilization usually arises from a collective sense of grievance or injustice and aims to offer alternative viewpoints on societal and

developmental priorities. It extends beyond local engagement, incorporating nongovernmental organizations, professional networks, women's groups, youth organizations, community-based organizations, faith-based groups, and the private sector to inspire collective action for causes like climate resilience.

Through alliance-building and partnerships at international, national, and local levels, social mobilization fosters awareness and demand for specific development goals, often using media campaigns as a tool. Employing a multi-sectoral, multi-jurisdictional, and interdisciplinary participatory approach, it provides comprehensive, sustainable solutions to critical societal challenges.

Social mobilization uses an integrative approach that ensures civil society takes ownership of the agenda to drive change. By bringing together various societal and individual forces, it aims to raise awareness, build demand for specific services, support resource and service provision, and promote lasting involvement at both the individual and community levels. To engage specific groups in focused and meaningful discussions, social mobilization relies on the collaboration of institutions, community partners, and organizations. Sustainable social and behavioral change requires multiple layers of cooperation, as partnerships have a stronger impact than individual efforts. As a result, social mobilization strategies involve utilizing leaders and media to increase awareness, establishing public forums for discussion, building alliances, and employing advocacy to gather resources.

Social mobilization involves empowering communities, individuals, organizations, and other groups to recognize their resources, needs, and strengths such as leadership capabilities for creative development. This process also encourages the formation of partnerships with funders, public and private organizations, civil society, and influential individuals. The objective is to build "Social Capital," which provides the funding and resources necessary for sustainable

development planning, execution, oversight, and assessment. "Social Capital" helps motivate and fund the network of connections between individuals and organizations within a specific geographic area, ensuring the successful and efficient sustainability of the desired changes.

Religious Fanaticism and Underdevelopment in Nigeria

From the time Nigeria gained independence in 1960 till now, its national development has been hindered by various social, political, religious, and economic challenges, with religious fanaticism serving as one of the major challenges.

A country that neglects its economic development is bound to face poverty and decline. In Nigeria, the consequences of religious fundamentalism have had a particularly severe impact on development. History shows that when societies, like Nigeria, intertwine religion with political struggles for supremacy, socio-economic control, and cultural superiority, they experience developmental crises. Religious pluralism, when properly managed, can have a positive impact on society. However, in situations of religious intolerance and division, such as in Nigeria, development tends to stall. Morality is essential for national development as it promotes peace and contributes to a stable political environment.

Combating corruption is an essential step toward ensuring moral integrity, which in turn facilitates resource management and fair allocation (Fabian & Ukomadu, 2022). Unfortunately, Nigeria's religious conflicts are often fueled by ethnic consciousness, violence, and the loss of life due to differing religious beliefs, particularly between Islam and Christianity, the two dominant religions. Religious practices that disrupt political and economic growth are prevalent, and religious terrorism, particularly from groups like Boko Haram, has severely impacted the country's stability. This group has caused widespread destruction in northeastern Nigeria, particularly in states like Yobe and Borno,

crippling both social and economic life (Yakubu et al., 2021).

Religion, despite being misused at times, holds significant potential for promoting societal change, moral reformation, peace, and harmony. It provides the foundation for citizens and the government to contribute to the socio-economic and political development of the nation (Adegoke & Akaholu, 2022). A peaceful environment nurtures creativity and collaboration, helping overcome national challenges and enabling people to work together to achieve national goals (Awusaku, 2013). Religion's moral teachings promote responsible citizenship and adherence to the law, both of which are essential for successful development.

Religious fanaticism continues to impede Nigeria's progress by fostering terrorism, religious intolerance, and violent conflicts. The destruction wrought by such extremism has left countless families and organizations in devastation, creating a climate of fear and uncertainty throughout the country. As religious extremists continue to disrupt peace and security, they perpetuate underdevelopment and social instability. The belief in religious supremacy held by some adherents only exacerbates tensions, leading to violent conflicts and further undermining Nigeria's growth. These extreme religious practices, rather than the religion itself, are the root cause of Nigeria's underdevelopment. The country cannot make substantial progress while plagued by insecurity, terrorism, and violent extremism (Awusaku, 2013).

Religious radicalism has significantly worsened Nigeria's socio-economic underdevelopment. The intertwining of ethnic politics, religious extremism, and social division has escalated the country's development challenges to alarming levels, making them difficult to address. Nigeria's religious extremism has created problems more detrimental than beneficial, leading to social fragmentation and conflict. Addressing religious extremism is vital for Nigeria's economic growth, social welfare, and modernization (Okolie & Osayande, 2021).

Religious violence, particularly in the northern region of Nigeria has further undermined the political and economic stability of the country. Boko Haram has been a significant disruptor, causing severe affect to social and economic activities, investments, and the livelihoods of the population. This ongoing violence poses a direct threat to Nigeria's national development and overall prosperity, leaving the country severely underdeveloped and deeply divided.

Theoretical Framework

The deprivation theory provides a valuable framework for analyzing the central issues of this study, although other theories could also be relevant for this discussion. Introduced by Ted Gurr in 1969, the deprivation theory posits that religion in Nigeria has frequently been utilized as a form of protest against problems such as exclusion, poverty, marginalization, corruption, and the lack of development. In addition, it has been employed by the ruling elites to advance their religious agendas. For instance, Nigerian Muslims view the ratification of Islamic Shariah law as an essential right for fully practicing their faith. However, Christians contend that the implementation of Sharia law within the legal system violates their rights and argue that a secular constitution is necessary to protect their religious freedoms (Gbadegesin & Adeyemi-Adejolu, 2016).

Forx (2004) highlights that the government's involvement in religious matters exacerbates the situation, positioning this as contradictory to the Nigerian constitution. The state finds itself caught between the conflicting demands of secularism and religious law, fostering resentment that can escalate into violence (Cinjel & Chujor, 2017). Deprivation encompasses various aspects of poverty, such as hunger, illiteracy, poor health, insecurity,

and lack of basic infrastructure. A nation's development level can be measured by the growth rate of its per capita income relative to other countries (Lucas, 1988). However, development also requires broader improvements in poverty alleviation, employment, creativity, efficiency, manufacturing, and equality. Ajaegbu (2012) defines national development as a nation's ability to enhance the social welfare of its people through access to essential services like healthcare, employment, clean water, and transportation.

Achieving meaningful development in Nigeria depends on Muslims and Christians finding common ground, beyond just polite interfaith dialogue among leaders. Without peace between these two major religions, significant development cannot be realized, as evidenced by the current situation. If these religious groups remain divided, Nigeria's development prospects will be severely hindered. This theory provides insight into how religious fanaticism affects Nigeria's national development.

Research Hypothesis

This study's goal was accomplished by testing this null hypothesis:

H₀: There is a significant relationship between religious fanaticism and underdevelopment in Nigeria's Fourth Republic.

Research Methods

The study employed a cross-sectional survey method. A total of 750 participants, including leaders from Christian, Muslim, traditional, youth, and civil society groups, were randomly chosen from each geopolitical zone to participate in the field surveys. The findings are presented below.

Table 1: Population of the Study

Geopolitical Zone	Christian Leaders	Muslim Leaders	Traditional Leaders	Youth Leaders	Civil Society leaders	Total
South-South	Bayelsa (25)	Edo (25)	Delta (25)	Akwa-Ibom (25)	Rivers (25)	125

South-East	Enugu (25)	Anambra (25)	Ebonyi (25)	Abia (25)	Ebonyi (25)	125
South-West	Oyo (25)	Lagos (25)	Ogun (25)	Ekiti (25)	Osun (25)	125
North-West	Sokoto (25)	Zamfara (25)	Kaduna (25)	Kebbi (25)	Kano (25)	125
North-East	Bauchi (25)	Yobe (25)	Borno (25)	Adamawa (25)	Taraba (25)	125
North-Central	Plateau (25)	Kogi (25)	FCT (25)	Niger (25)	Kwara (25)	125
Total	150	150	150	150	150	750

Source: Researchers' Fieldwork (2024)

A stratified random sampling method was employed to select respondents who had relevant knowledge about the study's topic. The sample was selected from each of the six regions of the country. For data collection, the study employed a survey using a five-point Likert-type scale. Participants were asked to rate their level of agreement or disagreement with various statements, where a score of five

indicated strong agreement, four represented agreement, three signified neutrality, two indicated disagreement, and one reflected strong disagreement. A pilot test was carried out with thirty (30) respondents from the South-South region to assess the reliability of the instrument, its internal consistency was evaluated using the Cronbach Alpha method, as indicated below.

Table 2: Reliability Analysis of Study Variables

Scale	Quantity of Items	Cronbach's Alpha
Religious Fanaticism	20	.779
Underdevelopment	15	.853

Researchers' Fieldwork (2024)

As a result, the coefficients of 0.779 and 0.853 for the research indicators met the commonly recommended threshold of 0.70 (Cronbach, 1951). Political science experts also deemed the questionnaire's content and face validity to be adequate. Therefore, the researchers deemed the scale's validity and reliability to be acceptable. As a result, the

two constructs under investigation demonstrated excellent reliability and internal consistency. Out of the seven hundred and fifty (750) questionnaires distributed, 537 (71.7%) were returned, cleaned, and used for the quantitative data analysis, as demonstrated below.

Table 3: Questionnaire Distribution and Rate of Response

S/N	Regional Area	Questionnaire Dispersed	Questionnaire Collected	Proportion (%)
1	South-South	125	123	16.4
2	South-East	125	104	13.9
3	South-West	125	84	11.3
4	North-West	125	68	9.1
5	North-East	125	61	8.1
6	North-Central	125	97	12.9
	Total	750	537	71.7

Source: Researchers' Fieldwork (2024)

Pearson product-moment correlation and linear regression analysis was conducted using the Statistical Package for Social Sciences (SPSS) software, at a 0.05 level of significance for data analysis.

Research Results

Bivariate analysis is employed to explore the causal relationship between the dependent and independent variables. The hypothesis is accepted if $P > 0.05$, indicating strong evidence of a relationship between the variables, and rejected if $P < 0.05$, signifying insufficient evidence of a relationship. This decision rule is applied to the bivariate test results below.

Table 4: Correlation of Religious Fanaticism and Underdevelopment in Nigeria

	Variables		Religious Fanaticism	Underdevelopment
Spearman's rho	Religious Fanaticism	Correlation Coefficient	1	.873**
		Sig. (2-tailed)		.001
		N	537	537
	Underdevelopment	Correlation Coefficient	.873**	1
		Sig. (2-tailed)	.001	
		N	537	537

**The correlation is significant at the 0.05 level (two-tailed)

Source: SPSS Output, 2024

Table 4 presents the relationship between religious fanaticism and underdevelopment in Nigeria's Fourth Republic, analyzed using Spearman's correlation coefficients. A strong and statistically significant correlation is observed between underdevelopment and religious fanaticism ($\rho = 0.873$, $n = 537$, $P =$

0.001). This indicates that religious extremism contributes to the acceleration of underdevelopment in Nigeria's Fourth Republic. However, correlation analysis alone cannot establish causality. To further explore the relationship, a linear regression technique was employed.

Table 5: Linear Regression Analysis of the Impact of Religious Fanaticism on Underdevelopment in Nigeria's Fourth Republic

Model	Unstandardized Coefficients		P-Value	Decision
	B	Std. Error		Reject null hypothesis
Constant	1.320	.308	< 0.001	
Underdevelopment	.546	.057	< 0.001	

Source: SPSS Output, 2024

Table 5 reveals that the (β) value of 0.546 suggests that 54.6% of the change in in underdevelopment in Nigeria's Fourth Republic can be independently attributed to religious fanaticism. Therefore, the null hypothesis is rejected. The regression results,

with a 95% confidence level, demonstrate that religious fanaticism plays a role in contributing to underdevelopment in Nigeria's Fourth Republic.

Discussion of Findings

The findings revealed a strong and significant positive correlation between underdevelopment and religious extremism in the country. The research further confirmed that religious fanaticism has had a major influence on the nation's underdevelopment, aligning with the views of Fabian and Ukomadu (2022), who noted the significant role of politics and religion in shaping Nigeria's national growth. The findings also support Amadi-Nche's (2020) claim that religious fanaticism continues to hinder national unity and development, as centrifugal forces, resource control disputes, ethnic politics, and religious conflicts have severely disrupted the country's development process. Additionally, Madumere et al. (2020) corroborated the findings by noting that since Nigeria's independence in 1960, religious fanaticism and terrorism have been major threats to lives, property, and economic activities. Ongoing terrorist attacks, particularly by the extremist group Boko Haram, have led to Nigeria lagging behind other African nations in socio-economic, cultural, educational, and technological advancements. For Nigeria to achieve meaningful progress, addressing religious fanaticism and insecurity is crucial. Adegoke and Akaholu (2022) also emphasized that religious conflicts in Africa have led to significant loss of life and destruction of resources, hindering development. The consequences of religious fanaticism are widespread, affecting political, social, economic, and religious spheres. These conflicts often lead to the loss of innocent lives, destruction of infrastructure, and displacement of communities, further exacerbating underdevelopment. The damage caused by religious extremism has had a profound negative impact on Nigeria, leading to significant resource loss, especially in vital sectors like education, healthcare, and religious facilities. Religious extremism has fostered division, violence, and a reversal of progress in

multiple sectors. It has strained relationships between Islam and Christianity, making peaceful coexistence increasingly difficult. The northeastern region of Nigeria and other affected areas have experienced severe economic, social, and environmental decline due to religious extremism.

Conclusion and Recommendations

The findings revealed that religious fanaticism significantly impedes development in Nigeria's Fourth Republic, fostering ethnic chauvinism, ethnic politics, and religious intolerance. These issues have negatively impacted the nation's growth. Religious extremism in Nigeria has led to unprecedented violence, with governments needing to take comprehensive steps to address the divide between Islam, Christianity, and African traditional religions. In the Fourth Republic, religious extremism has posed a significant danger to lives, property, and economic progress, making Nigeria an insecure environment for both local and international investors. The ongoing acts of terrorism, particularly from groups like Boko Haram, have resulted in other African nations surpassing Nigeria in socio-economic, cultural, educational, and technological development.

For Nigeria to attain national progress, it is vital to promote national unity that goes beyond ethnic, regional, and religious differences. While honoring Nigeria's multicultural and multi-religious identity, it is important for all citizens to collaborate in building a cohesive nation. Based on the findings of this study, the following recommendations are made:

1. Religious leaders, both Christian and Muslim, should receive comprehensive religious education to equip them with the ethics, moral

principles, values, and life philosophies necessary for effective leadership, nation-building, and fostering national development.

2. The government should offer interest-free loans to young people to support the establishment of small businesses, including ventures like agricultural farms, poultry, fish ponds, and business centers as strategies for poverty reduction. This initiative will help reduce religious extremism and its negative effects on national development in Nigeria's Fourth Republic.
3. The government, non-governmental organizations, and religious institutions should regularly organize seminars focused on religious harmony in Nigeria, encouraging peaceful coexistence, social mobilization, and active community participation among followers of different faiths.

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