



Just in time Practice and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria

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Abstract

This study titled “Just-In-Time Practices and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria” examined the effect of JIT practices on cost reduction, service quality, delivery efficiency, and productivity. The objectives were to ascertain the influence of JIT on service quality, cost, and delivery; to evaluate its implementation on operational performance; and to determine how JIT enhances productivity and competitiveness. A descriptive survey design was adopted, with a target population of staff drawn from selected fast food restaurants in Warri metropolis. Stratified random sampling was used to obtain a sample size of 279 respondents. Data were collected through structured questionnaires on a five-point Likert scale. Validity of the instrument was ensured through expert review, while reliability was tested using Cronbach’s Alpha, with all constructs achieving values above 0.70. Data were analyzed using descriptive and inferential statistics. Findings revealed that JIT practices significantly reduce food spoilage, minimize operational costs, improve service speed, and enhance employee productivity. Supplier reliability emerged as the most critical factor influencing successful JIT implementation. The study also noted infrastructural and logistical challenges such as poor roads and erratic power supply as limiting factors. Based on these findings, the study recommends establishing long-term supplier partnerships, adopting hybrid cold storage solutions to mitigate power disruptions, forming cooperative purchasing hubs among restaurants, staff training in lean workflow techniques, and government support in improving road networks around food markets. The study concludes that JIT remains a viable strategy for enhancing performance in Warri’s fast food sector.

Keywords: JIT, JIT practices, Operational Performance, Selling, Local Fast Food Companies in Warri.

Introduction

The global fast-food industry has experienced significant growth over the past few decades, driven by factors like urbanization, changing consumer lifestyles, and the increasing number of working-class individuals. Nigeria is no exception, with the fast-food sector expanding rapidly, particularly in major cities like Warri. The industry is characterized by a mix of local and international brands, all competing for a growing customer base. However, this competitive environment, coupled with operational challenges, puts immense pressure on these businesses to optimize their processes. In this context, Just-in-Time (JIT) practices have emerged as a potential solution. JIT, a production and inventory management philosophy, aims to minimize waste by receiving and producing goods only when they are needed. While widely applied in manufacturing, its principles of reducing inventory, improving quality, and enhancing efficiency are highly relevant to the fast-paced, high-volume environment of a fast-food restaurant. For fast-food businesses in Warri, where supply chain disruptions and infrastructural issues

are common, the adoption of JIT could be a game-changer. By aligning ingredient inflow with actual customer demand, restaurants can minimize spoilage, lower storage costs, and improve the freshness of their offerings. This, in turn, can have a direct impact on their operational performance, which includes metrics like productivity, customer satisfaction, and profitability.

JIT, according to Dalci and Tanis (2006), is a production system that shortens lead times, lowers inventories, and enhances supplier relationships. Rapidly evolving market conditions and heightened rivalry in the industry, led fast food chains to implement Just-In-Time (JIT) as an effort to reduce their inventory levels and enhance customer service. Sing and Ahuja (2014), however, contended that JIT is a methodology that aims to eliminate waste and achieve precision in the production service process. According to Kinyua (2015), just-in-time (JIT) manufacturing enables businesses to produce goods in the proper quantity and quality with the least amount of resources. According to Phan et al. (2019), JIT is based on the ongoing pursuit of processes that increase the productivity and effectiveness of

performance operations. JIT's primary goal is to deliver products or services without wasting any resources. According to Ketokivi and Schroeder's (2004) analysis, some JIT applications are more likely to improve particular operational performance metrics. But according to Khairuddin et al. (2015), JIT requires a variety of techniques to achieve optimal performance and depends on more than just worker's effort, it also takes into account other environmental factors. Conversely, Sutrisno (2019) contended that operational performance characteristics, such as improved product and service quality, increased productivity, decreased costs associated with defects, shorter delivery times, effective product delivery, and inventory performance, significantly impact on the outcome of the process. The aims of this study is to highlight the importance of JIT practices with emphasis on JIT purchasing, JIT selling and JIT on performance such as quality, cost effectiveness, and quick service delivery.

Statement of the Problem

Despite the potential benefits of JIT, many fast-food restaurants in Warri metropolis face significant operational challenges that may hinder its successful implementation. The fast-food industry in Nigeria often deals with an unreliable supply chain, characterized by poor road networks, security challenges, and fluctuations in the availability and price of ingredients. These issues make it difficult to maintain the precise and consistent deliveries required for a successful JIT system. Building reliable supplier relationships is critical for JIT success. However, many restaurants in Warri face difficulties in establishing stable partnerships with suppliers, leading to inconsistencies in food quality and supply (Ukorebi, 2018). According to (USDA, 2022), poor infrastructure, particularly inconsistent power supply, is a major challenge. Restaurants rely heavily on electricity for refrigeration, cooking, and point-of-sale systems. Frequent power outages can disrupt operations and lead to food spoilage, making it risky to operate with minimal inventory as required by JIT. The fast-food industry in Warri, like in other parts of Nigeria, sees a high rate of business failures. Many new outlets open and close within a few years, suggesting an inability to maintain long-term survival strategies and efficient operations, (Onwuegbule, 2025). This highlights a critical gap in understanding how to improve operational performance and competitiveness.

Objectives of the Study

- The objectives of this study is to investigate:
- i. To ascertain the effect of instant service quality, cost, and delivery of local fast food restaurants in Warri metropolis.
 - ii. To evaluate the implementation of JIT practices and the operational performance in fast food restaurants

- iii. To determine how JIT operations improve productivity and enhance the performance of fast food restaurants.

Research Questions

In order to find answers to the problem under investigation, the following question were raised to guide the study.

- i. What is the influence of JIT practices on operational performance, quality, cost, and delivery on local fast food restaurants in Warri metropolis?
- ii. What is the influence of implementation of JIT practices on operational performance of fast food restaurants?
- iii. What is the effect of JIT operations in improving productivity and enhancing the performance of fast food restaurants in Warri metropolis?

Review of Related Literature

Conceptual framework:

Many scholars have x-strayed just-in-time (JIT) from various angles. Bartezzaghi and Turco (1989) distinguished JIT from two perspectives: first, as a universal approach, and secondly, as a collection of methods intended to continuously enhance production. JIT is a mindset that aims to reduce inventory in the manufacturing process in order to provide goods with high quality and excellent customer services (Clarke and Mia, 1993). While Bandyopadhyay (1995) postulated that the key to implementing Just-In-Time (JIT) effectively is to comprehend the intended objectives and that top management bears responsibility for employees' involvement.

According to Kootanaee, et. al. (2013) argued that JIT is a concept of production that tends to minimize inventories through creating a pull system in which each component of these systems pulls the other to deliver with high level of quality and quantity.

In the light of this, Phan et al. (2019) clarified that JIT approaches improve customer service, boost process implementation and execution, quality, and enable effective communication. JIT, in the opinion of Al-Haraisa (2017), posited that JIT is a method or strategy based on prearranged actions meant to gain a competitive edge and reduce production waste.

Drawing an overview of JIT, which the fast-food companies adopted, is possibly based on the definitions given above. JIT is an approach that focuses on producing stable items in a salable quantity with good quality through a pulling system, with the goal of creating an operational performance with zero defect or minimal waste. It is noteworthy to state that this kind of technique can be used in selling, buying, and operating fast food restaurants.

Just-in-Time Practices:

Numerous studies have demonstrated that JIT techniques can be successful when applied correctly. For example, JIT can be used in operations, purchasing, and selling when it is tailored to the specific company context. Green et al. (2011), posited that implementing JIT selling can only result in improved performance if integrated control is applied to the entire process. Chanda (2017) opined that JIT techniques can help the production process so that the manager can raise operational performance to a desired or superior level. Also, Pérez and Torres (2019) argued that in order to apply JIT, it is necessary to consider the quality level, which is most likely to be improved upon over times especially in JIT purchasing.

JIT Purchasing:

According to Singh and Ahuja (2014), stated that JIT purchasing is a system that stands on purchasing of materials based on the actual and urgent needs to fulfill the urgent demands of the clients with zero waste and minimum inventory cost. Based on this, we can say that implementing such system leads to reducing the amount of money needed to buy materials and the cost of storage. Mazanai (2012), argued that purchasing procedures support the creation of long-term agreements and contracts for the location of facilities. JIT purchasing strategies are intended to be utilized to reduction of inventory, boost buyer-supplier confidence to increase production levels, and decrease production waste, Phogat and Gupta (2018). It's interesting to note that JIT purchasing is defined by Pérez and Torres (2019) as a process that, via increased quality and flexibility, fosters long-term, trust-based coordination between the buyer and the suppliers. Stated differently, suppliers and purchasers will become reliant on one another's companies as a result of frequent logistics arising from simpler and smaller deliveries.

JIT Operation:

Researchers have not yet come to a consensus on a single definition of JIT operation, but according to Chanda (2017), the fundamental goal of just-in-time (JIT) operation and management is to eliminate waste while adopting business procedures to create an efficient system. Such a strategy is based on providing customers with high-quality products at the most affordable price while still meeting their desires. To achieve these kinds of outcomes, JIT must be correctly implemented in the operations of business. In this regard, Ganiyu, et al. (2019) noted three essential components; a correct mindset, ongoing improvement, and staff involvement are critical to the concept's success. These elements together target the company's performance towards being more efficient which in turn affects the company's change culture.

According to Bortolotti et al. (2013), Just-in-Time (JIT) technologies facilitate production operations and aid organizations in avoiding excessive inventory. Given that

inventory expenses were very high at the middle of the 20th century, Toyota strove to keep them to a minimum. Toyota has developed an operational system based on just-in-time (JIT) and lean manufacturing, Dora et al. (2014). Furthermore, Phogat and Gupta (2018), emphasized that JIT enables the restaurant to determine whether a task takes longer than anticipated or to identify any malfunctioning system components.

Ho (1995), opined that McDonald's is the only major fast-food business that employs just-in-time (JIT) processes to provide everyday customer service. According to Molashkhia (2014), McDonald's typically operates under a system that makes sure all necessary materials and procedures are available when needed and are taken into account on time. In order to ensure that their customers always receive the same order with fresh ingredients at equal levels of quality, Patel et al. (2016) stated that McDonald begin assembling their burgers in a standardized procedure in collaboration with their suppliers.

Customer satisfaction

In the context of fast-food restaurants, Just-in-Time (JIT) practices are directly linked to customer satisfaction by improving key aspects of the dining experience, such as food quality and speed of service. JIT principles, when applied effectively, address fundamental customer expectations. JIT practices significantly influence customer satisfaction in the fast-food industry. The core philosophy of JIT is to eliminate waste and produce only what is needed, when it is needed. This translates into several direct benefits for customers such as improved food quality and freshness, reduced waiting and service time and enhanced menu consistency

Adopting this strategy results in devoted clients. When customers place an order, they know exactly what to expect - fresh food that tastes well and is prepared more freshly. Customers become satisfied enough to place additional orders as a result. Client Relationship Management arose from corporate procedures such as relationship marketing (RM) and the focus on boosting customer retention through efficient customer relationship management (Wang & Feng, 2012). A streamlined production process and efficient inventory management enable fast - food restaurants to serve customers more quickly. This is especially important in a fast - paced environment like Warri Metropolis, where customers often have limited time. A study by Parasuraman et al. (2019) shows that fast service is a critical factor in customer satisfaction in the service industry.

JIT Selling

The concept of JIT selling is an extension of the JIT philosophy to the sales and customer service process. It's about providing the right product to the customer at the right time, based on their specific needs and demands. In fast-food, JIT selling is a more modern, customer-centric approach that goes beyond just the production line. JIT selling focuses on real-time responsiveness to customer

orders. This means the system is designed to "pull" items from production as soon as the customer places an order. JIT selling allows for greater flexibility. Since products aren't mass-produced in advance, fast-food restaurants can more easily accommodate customer requests for customizations, such as "no onions" or "extra cheese," without disrupting the entire flow. This personalized service makes customers feel valued and improves their overall experience.

Modern JIT selling in fast-food is often facilitated by technology. Online ordering systems, mobile apps, and in-store kiosks act as the "pull" signal, sending orders directly to the kitchen staff. This integration reduces errors and speeds up the entire process, creating a seamless and satisfying customer journey from order placement to pick up. In the competitive market, where customers have many options, the ability of a fast-food restaurant to provide high-quality, fresh food quickly and consistently, as enabled by JIT practices and selling, is a key differentiator. It directly impacts customer satisfaction, leading to repeat business and positive word-of-mouth, which are vital for long-term survival and profitability (Ndubisi & Nwankwo, 2019; Anifowose & Olaleye, 2016).

Implementation of JIT in Warri Metropolis, Delta State

The adoption of JIT practices among fast food restaurants reflects the broader trend in Nigeria towards efficiency in the food service sector. The study by Ali (2024) highlights how local establishments have integrated JIT practices to enhance their operational capabilities. Research indicated that many restaurants in Delta Stat have started focusing on local sourcing of ingredients to better control inventory levels and reduce lead times (Ali, 2024). A growing trend is also the implementation of technology for real-time inventory tracking, helping managers make informed purchasing decisions (Ganiyu, 2019). Implementing JIT allows fast food outlets to operate leaner, reducing costs associated with excess inventory.

A study highlighted that restaurants applying JIT saw a reduction in operating costs by up to 20% (Ali, 2024). With a focus on fresh ingredients, restaurants can ensure higher quality products, leading to increased customer satisfaction. Continuous improvement in food quality was noted in establishments that adopted JIT practices (Al-Janabi, 2020). JIT enables restaurants to respond effectively to changing consumer preferences. By analyzing sales data in real-time, management can adapt their offerings, reducing waste and better meeting customer demands (Ali, 2024).

Operational performance

The areas of performance that the business strives to enhance in order to fulfill its plan are known as operating performance goals. According to Sengul et al. (2015), the organization would establish the pertinent operational performance goals to measure and configure the environment in order to facilitate the achievement of the

goals after defining the company's strategy. According to Gabčánová (2012), it is essential to document, track, and evaluate many facets of operational performance in order to guarantee optimal distribution of resources in operations. Finding the right performance metrics for internal and external elements that affect an organization's competitiveness is the primary responsibility of this procedure (Gustafsson and Frost, 2018). Reliance on conventional financial indicators only has become insufficient, because performance measurement and evaluation are necessary, and they are one of the main elements of the success of the establishment (Şengül, et. al., 2015). In light of rapid development and according to Gabčánová (2012) key performance indicators include, customer satisfaction, new product development, quality of the product/service, productivity, efficiency and profitability, Pekuri et al. (2011). Just-In-Time practices within fast food restaurants has made significant strides, leading to enhanced operational performance characterized by increased efficiency and reduced costs.

Theoretical Review

For the resolves of this research, the research was directed by Transactional Cost Analysis Theory (1981) and Queuing Theory.

Transactional Cost Analysis Theory

Overview of Transactional Cost Analysis (TCA), proposed by Ronald Coase and further developed by Oliver Williamson, focuses on the costs incurred during economic exchanges. It emphasizes the importance of minimizing transaction costs to enhance efficiency in operations (Williamson, 1981). Within JIT systems, transaction cost considerations influence purchasing, supplier relationships, and inventory management. JIT necessitates the establishment of collaborative relationships with suppliers to ensure timely delivery of ingredients. High transaction costs associated with negotiating contracts, monitoring performance, and enforcing agreements can deter the effective implementation of JIT (Williamson, 1998). Fast food restaurants in Warri, by minimizing these costs through long-term partnerships with local suppliers, can foster a more efficient supply chain, reducing inventory holding costs and ensuring fresh produce availability.

JIT practices impacts inventory management significantly by advocating for reduced stock levels and timely replenishment. Transaction costs related to inventory holding, such as storage costs and obsolescence risks, are minimized when restaurants order ingredients as needed. This is vital in a locale where perishable items are prominent, helping reduce waste and associated costs (Ali, 2024). The integration of TCA principles allows restaurants in Warri to enhance their operational performance. Streamlined supplier negotiations and minimized inventory-related costs contribute to lower operating expenses, thereby improving profitability (Alhassan & Otoo, 2021).

Queuing Theory

Queuing Theory analyzes waiting lines or queues to understand customer service processes and optimize system performance (Little, 1961). In fast food restaurants, effective queuing mechanics ensure swift service, which is crucial in high-demand environments. JIT implementation aligns with minimizing wait times and optimizing service delivery. By synchronizing food preparation with incoming orders, fast food restaurants can ensure that customers receive their orders promptly, a critical factor affecting customer satisfaction (Bitran & Mondschein, 1997). Efficient service leads to reduced queue lengths, enhancing the overall dining experience.

Queuing theory also aids in better understanding server capacities and customer arrival rates. Fast food restaurants in Warri, apply queuing models to forecast peak service times, allowing them to allocate human resources effectively and adjust staffing levels accordingly (Schmidt & Möller, 2006). This proactive approach ensures that service quality remains high during busy periods, a common challenge in the fast food sector. Implementing insights from queuing theory enhances the customer experience and improves turnover rates, essential for profitability in the competitive fast food landscape. Fast food outlets that leverage this theory are better positioned to accommodate customer demands without compromising service quality (Ganiyu, 2019).

Empirical Review

Rashid et al, (2024) study the impact of just-in-time practices on the operational performance of global fast-food brands in Karachi, Pakistan. The sample size of 300 respondents was taken from the global supply chain management professionals at the global fast-food restaurant supply chain through the non-probability purposive sampling technique. For the constructs' items through reliability and regression analysis, examine the relationship between the independent and the dependent variables of the test hypotheses in the research study. The results indicate that Just-In-Time significantly and positively influences the operational and competitive performance in the restaurants of global fast-food brands.

Agu et al. (2016) posited that an investigation to discover the degree at which inventory control influence the profitability of some manufacturing firms concluded that inventory control essentially influences efficiency of manufacturing firms. As indicated by the results of the analysis, there is a positive relationship between demand management and customer satisfaction in manufacturing firms, Just-in-time has a significant effect on growth of the firms. The instrument utilized for data collection was basically questionnaires and interviews.

Chien and Lin (2015) study titled: "The Effects of the Service Environment on Perceived Waiting Time and Emotions" aimed to test customer's mood and define which

environmental factor may supply the most support in decreasing the sense waiting time and the passionate response. Descriptive approach was used. The sample of the study consisted of (410) customers who favored burger restaurants during traffic hour and who were suspense for their meal or were in the operation of dispatching their order. The result of this study revealed that the impact of understood traffic on the understood waiting time path seems to be stronger than emotional path. For that the strategy to minimize the perception of rush is to inspire the customers feel that their understood waiting time is decreased.

Green, et. al. (2014) study titled "Total Just in Time Impact on Supply Chain Competency and Organizational Performance" aimed to study the relationship between supply chain and total JIT on organizational performance that depends on number of elements (JIT purchasing, JIT selling, JIT and JIT information). Data collected from number of experts (managers, and plant) based on traditional mailing by use the covariance-based structural. Results shows that there is a positive impact between total JIT and supply chain and organizational performance, but the success of supply chain needs a supply chain strategy. Study recommended the future researcher to investigate the impact of each element on performance.

Furlan, et. al. (2011) study titled "On the complementarity between internal and external just-in-time bundles to build and sustain high performance manufacturing" aimed to study the complementarity of internal JIT upstream (suppliers) and external downstream (customer). The authors used questionnaire on 266 manufacturing in nine countries, by send questions to 10 of random managers, 2 supervisors, and 100 employees, to test the hypothesis based on third round of the high-performance manufacturing. The study found that is so important to have correlation between upstream and downstream to achieve maximum operation performance. The recommended is extended to other internal and external JIT bundles like (TQM, and human resource management).

Green, et. al. (2007) study titled "The Impact of JIT-11-Selling on Organizational Performance" aimed to study the influence of JIT selling on organizational performance depends on production and marketing function. Data collect from 166 directors of large companies, and data analyzed based on structural equation approach. The study concluded that there is an effective impact of JIT selling on performance. The study recommended to seeking for suppliers to achieve long-term relationship and effective implement of JIT selling.

Barlow (2002) study titled "Just in time: Implementation within the Hotel Industry" aimed to investigate the value of JIT purchasing and inventory on hotel sector. Data collected based on case study of three different types of hotels. The result showed that implement of JIT purchasing and inventory has a positive impact on hotel sector. The author

recommended studying the benefits of JIT in short term such as return on capital employed.

Methodology

This study adopted a descriptive survey research design, as it enabled the researcher to gather quantitative data on Just-In-Time (JIT) practices and operational performance of fast food restaurants in Warri metropolis. The population of the study comprised employees of selected registered fast food outlets within Warri, estimated at approximately 950 staff. A stratified random sampling technique was employed to ensure fair representation of managers, supervisors, chefs, and service staff. Using the Taro Yamane formula at a 5% margin of error, a sample size of 279 respondents was selected. Primary data were collected through structured

questionnaires designed on a five-point Likert scale to measure perceptions on JIT practices, cost, quality, delivery, and productivity. The study variables were operationalized by adapting validated items from prior JIT and operational performance studies. Content validity was established by expert review, while reliability was confirmed using Cronbach's Alpha, with coefficients above 0.70 considered acceptable. Data were analyzed using descriptive statistics (frequency and percentage) for demographic information and mean scores for responses. Inferential statistics, including regression analysis, were employed to test the effect of JIT practices on operational performance. Ethical considerations such as informed consent, confidentiality of responses, and voluntary participation were strictly observed throughout the study.

Presentation of Data

Table 1: Demographic Characteristics of Respondents (N = 279)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	158	56.6%
	Female	121	43.4%
Age	18–25 years	72	25.8%
	26–35 years	118	42.3%
	36–45 years	63	22.6%
	46 years & above	26	9.3%
Position	Manager	32	11.5%
	Supervisor	48	17.2%
	Chef	55	19.7%
	Service Staff	119	42.7%
	Others	25	9.0%
Years of Experience	Less than 1 year	41	14.7%
	1–3 years	96	34.4%

	4–6 years	84	30.1%
	Above 6 years	58	20.8%
Type of Restaurant	Small-sized	112	40.1%
	Medium-sized	97	34.8%
	Large chain	70	25.1%

Table 1 presents the demographic characteristics of respondents from selected fast food restaurants in Warri metropolis, Delta State, Nigeria. Out of the 279 respondents, 158 (56.6%) were male while 121 (43.4%) were female, indicating that the fast food industry in Warri metropolis is slightly dominated by male employees. In terms of age distribution, the majority of the respondents, 118 (42.3%), were between 26–35 years, followed by 72 (25.8%) within the 18–25 years category. About 63 respondents (22.6%) fell within 36–45 years, while only 26 respondents (9.3%) were aged 46 years and above. This suggests that the workforce in the industry is largely youthful and within the productive age bracket.

Regarding job positions, the majority of the respondents, 119 (42.7%), were service staff, while 55 (19.7%) were chefs. Supervisors accounted for 48 (17.2%), managers

constituted 32 (11.5%), and 25 respondents (9.0%) were categorized as others. This distribution indicates that frontline service staff form the bulk of the workforce in fast food restaurants. Analysis of years of experience shows that 96 respondents (34.4%) had between 1–3 years of work experience, followed by 84 (30.1%) with 4–6 years. Those with more than 6 years of experience were 58 (20.8%), while 41 respondents (14.7%) had less than one year of experience. This suggests that most employees in the industry are relatively new but also have significant representation of moderately experienced staff. In terms of restaurant type, 112 (40.1%) were employed in small-sized fast food restaurants, 97 (34.8%) in medium-sized restaurants, and 70 (25.1%) in large chain restaurants. This shows that small and medium-sized restaurants dominate the fast food landscape in Warri metropolis.

Table 2: Respondents’ Perception on JIT Practices and Operational Performance

S/N	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)	Mean	Remark
1	Our restaurant practices Just-In-Time in inventory management.	18	34	46	108	73	3.71	Agreed
2	JIT reduces food wastage and spoilage.	12	28	39	121	79	3.92	Agreed
3	JIT has helped to cut down operational costs.	22	31	52	105	69	3.72	Agreed
4	JIT improves service speed and reliability in meeting customer orders.	14	24	40	118	83	3.95	Agreed
5	Supplier reliability is critical to the success of JIT practices.	10	20	36	115	98	4.11	Strongly Agreed
6	Challenges in JIT implementation negatively affect operational outcomes.	16	29	45	111	78	3.86	Agreed

Source: Field Survey, 2025

Table 2 shows respondents’ opinions on the effect of Just-In-Time practices on the operational performance of fast food restaurants in Warri metropolis. The findings reveal that the majority of respondents agreed that their restaurants practice JIT in inventory management, with a mean score of 3.71. Respondents strongly affirmed that JIT reduces food wastage and spoilage (Mean = 3.92) and contributes to cost reduction (Mean = 3.72). On service delivery, respondents

agreed that JIT enhances speed and reliability in customer order processing (Mean = 3.95). Furthermore, supplier reliability was highlighted as a critical success factor for JIT practices, with the highest mean score of 4.11, suggesting that the efficiency of JIT operations is highly dependent on timely and consistent supplier performance. Respondents also agreed that challenges in JIT implementation negatively affect operational performance (Mean = 3.86).

Table 3: Respondents' Perception on JIT Operations, Productivity, and Performance

S/N	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)	Mean	Remark
1	JIT practices help to improve employee productivity in the restaurant.	15	28	42	124	70	3.88	Agreed
2	JIT contributes to better time management and workflow efficiency.	12	24	37	119	87	3.98	Agreed
3	The adoption of JIT practices has enhanced overall restaurant performance.	18	27	40	113	81	3.91	Agreed
4	JIT leads to faster turnaround time in processing customer orders.	11	23	35	116	94	4.01	Agreed
5	The restaurant's competitiveness has improved due to JIT operations.	16	30	41	115	77	3.88	Agreed
6	JIT contributes to sustainable performance in the fast food industry.	14	26	38	118	83	3.95	Agreed

Source: Field Survey, 2025

Table 3 presents respondents' opinions on the effect of JIT operations on productivity and performance of fast food restaurants in Warri metropolis. The results show high levels of agreement across all statements. Respondents affirmed that JIT practices improve employee productivity (Mean = 3.88) and contribute to better time management and workflow efficiency (Mean = 3.98). Similarly, JIT was perceived to enhance overall restaurant performance (Mean = 3.91) and facilitate faster turnaround time in processing customer orders, which had the highest mean score (4.01). Respondents also agreed that JIT enhances competitiveness (Mean = 3.88) and contributes to sustainable performance in the fast food industry (Mean = 3.95).

Discussion of Findings

The demographic findings provide useful insights into the structure of the fast food industry workforce in Warri metropolis. The slight male dominance suggests that certain operational tasks, possibly involving physical demands and extended working hours, may attract more male employees. However, the high proportion of female staff also highlights gender inclusiveness in the sector, especially in customer service roles. The age distribution reflects a youthful workforce, consistent with the fast-paced and labor-intensive nature of the industry. Younger employees are more likely to adapt to Just-In-Time (JIT) practices, which require speed, flexibility, and efficiency in service delivery. This aligns with prior studies that associate JIT success with an energetic and adaptable workforce. The high percentage of service staff (42.7%) underscores the customer-centric orientation of fast food restaurants. Since service staff directly interact with customers, their role is critical in ensuring service quality, prompt delivery, and cost efficiency, which are key dimensions of JIT practices.

The predominance of respondents with 1–3 years and 4–6 years of experience suggests a moderately experienced workforce, which can balance adaptability with accumulated industry knowledge. Such a workforce is vital for sustaining JIT operations, as employees with some

experience are better positioned to handle the demands of inventory control, waste reduction, and timely service delivery. Finally, the dominance of small and medium-sized restaurants (74.9%) indicates that the implementation of JIT practices in Warri metropolis may vary across different business scales. Smaller restaurants may face challenges of limited supplier networks and resources, while larger chains may have structured systems for operational performance. Nevertheless, the widespread presence of smaller outlets suggests that any analysis of JIT effectiveness must consider the peculiarities of resource-constrained settings.

The effect of instant service quality, cost, and delivery of local fast food restaurants in Warri metropolis

The findings from Table 2 indicate that JIT practices are actively recognized and applied within the fast food industry in Warri metropolis. This supports earlier studies that emphasize the role of JIT in minimizing waste, reducing costs, and improving service efficiency in the hospitality sector. The relatively high agreement levels across items show that employees perceive JIT as a strategy that positively impacts operational performance. Specifically, the high mean score on supplier reliability (4.11) suggests that external factors, such as the dependability of supply chains, play a pivotal role in ensuring the success of JIT systems. This aligns with the principle of JIT, which requires synchronized and timely supply of raw materials to support smooth operations.

Moreover, the agreement that JIT reduces food spoilage and enhances speed in service delivery shows its direct relevance to customer satisfaction—an essential factor in the competitive fast food industry. However, respondents also recognized that challenges in JIT implementation can negatively affect operational outcomes, reflecting the fact that without proper planning, JIT may expose restaurants to risks such as supply delays and stock-outs. The study revealed challenges in JIT implementation, particularly with supplier reliability, which respondents ranked as a critical determinant of success. This finding differs somewhat from

Furlan et al. (2011), who emphasized the complementarity of upstream supplier integration and downstream customer satisfaction in achieving high operational performance. In the Warri context, unreliable supply chains, frequent power outages, and infrastructural deficiencies hinder seamless JIT adoption. These challenges are socio-economically rooted, as many local suppliers operate informally and lack logistics efficiency, creating risks of stockouts and delays. In summary, the findings stresses that JIT practices, when effectively implemented, contribute to cost efficiency, improved productivity, and better service performance in fast food restaurants in Warri metropolis.

The implementation of JIT practices on the operational performance and productivity of fast food restaurants.

The findings from Table 3 clearly suggest that JIT operations significantly influence productivity and performance outcomes in fast food restaurants. The respondents recognized that JIT helps streamline workflow and improve time management, which is critical in the fast-paced nature of food service. This finding aligns with the JIT philosophy that emphasizes waste reduction, efficiency, and responsiveness to customer demand. The highest-rated statement—that JIT leads to faster turnaround time in customer order processing (Mean = 4.01)—highlights the direct impact of JIT on customer satisfaction. In the hospitality industry, service speed is a major competitive factor, and JIT enables restaurants to respond swiftly to fluctuating demand without compromising quality. Furthermore, the findings that JIT contributes to competitiveness (Mean = 3.88) and sustainability (Mean = 3.95) show that restaurants that adopt JIT practices are better positioned to maintain long-term operational performance and remain resilient in a highly competitive market like Warri metropolis. The implications of these findings are multifaceted. First, they demonstrate that JIT is a viable operational strategy for fast food restaurants in Warri, capable of improving customer satisfaction through reduced waiting time and improved quality of service. The results of this study reveal that Just-In-Time (JIT) practices positively influence operational performance in fast food restaurants in Warri metropolis. Respondents affirmed that JIT reduces food spoilage, minimizes costs, improves employee productivity, and enhances service delivery speed. These findings align with Belekoukias et al. (2014), who observed that JIT and automation significantly improve efficiency in manufacturing organizations, particularly in areas of cost, quality, and delivery. Similarly, Agu et al. (2016) reported that JIT has a significant effect on firm growth and efficiency, which resonates with this study's findings that JIT contributes to competitiveness and sustainability in the fast food sector. This agrees with Chien and Lin (2015), who highlighted the importance of minimizing perceived waiting time in food service settings. Second, the findings stress that without robust supplier

networks and infrastructural support, JIT's potential cannot be fully realized. This echoes Green et al. (2014), who argued that the success of JIT depends on supply chain strategies. The results suggest that while JIT enhances performance in Warri's fast food industry, full optimization requires addressing local infrastructural, supply, and cultural challenges. Overall, these findings reinforce the argument that JIT operations not only enhance internal efficiency but also provide strategic advantages by boosting productivity, improving customer service, and sustaining competitiveness in the fast food industry.

Conclusion and Policy/Managerial Implications

This study, titled *Just-In-Time Practices and Operational Performance of Fast Food Restaurants in Warri Metropolis, Delta State, Nigeria*, investigated how JIT influences service quality, cost, delivery, and productivity. The objectives were to evaluate JIT adoption, its effect on operational performance, and its role in enhancing productivity. Findings revealed that JIT reduces waste, cuts costs, improves workflow efficiency, and strengthens competitiveness. However, unreliable suppliers, poor infrastructure, and unstable electricity supply remain key barriers to full implementation.

Policy and Managerial Implications

1. **Supplier Partnerships** – Fast food operators should sign long-term supply agreements with Warri-based farmers and distributors to ensure timely delivery and reduce dependence on inconsistent markets.
2. **Energy Solutions** – Managers should adopt hybrid energy (solar + generator backup) to power cold storage and maintain JIT efficiency despite frequent outages.
3. **Joint Procurement Hubs** – Policymakers can support restaurant clusters to form cooperative purchasing hubs in Warri, reducing logistics cost and increasing supplier accountability.
4. **Staff Capacity Development** – Owners should introduce lean-service training workshops tailored to peak traffic periods (e.g., lunch rush) to strengthen workflow under JIT.
5. **Infrastructure Support** – Local government should prioritize rehabilitating feeder roads around Warri's major food markets (Igbudu, Effurun) to improve supply chain reliability.

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