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EFFECT OF LOGISTICS MANAGEMENT ON PROCUREMENT PERFORMANCE IN MIKAP NIGERIA LIMITED, MAKURDI, BENUE STATE, NIGERIA

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ABSTRACT

This study investigated the effect of logistics management on procurement performance of Mikap Nigeria Limited, Makurdi, Benue State. Specifically, it examined the effects of inventory management, transportation management, and warehousing management on procurement performance of Mikap Nigeria Limited, Makurdi, Benue State. Using a case study survey design, data was collected from 48 employees across management staff and the staff of procurement, transport, finance, store, production and quality control units/departments of the company through a self-administered structured questionnaire. The data were analyzed using descriptive and inferential statistics, including regression analysis. The findings revealed that all three logistics management practices (inventory management, transportation management, and warehousing management) had a statistically significant positive effect on procurement performance, with transportation management having the strongest effect (β =0.715, t= 10.096, p= 0.000), followed by warehousing management (β= 0.341, t= 4.857, p= 0.000), and lastly, inventory management showing the least effect on procurement performance of Mikap Nigeria Limited (β = 0.224, t = 3.145, p= 0.003).The results align with the Resource-Based View (RBV) theory, suggesting that efficient logistics management can serve as a valuable resource that enhances procurement performance. The study concluded that improved logistics practices in inventory management, transportation, and warehousing are crucial for enhancing procurement efficiency and operational effectiveness in Nigeria's agricultural processing industry. Based on the findings, actionable recommendations include investing in advanced logistics systems, optimizing transportation routes, and improving warehouse operations were made.

KEY WORDS: Inventory Management, Transportation Management, Warehousing Management, Procurement Performance

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1.0 INTRODUCTION

1.1 Background of the Study

Globally, organizations are been plagued by increasing complexity of supply chains, rising transportation costs, and disruptions caused by global crises such as the COVID-19 pandemic and geopolitical conflicts have necessitated the adoption of advanced logistics strategies. These conditions have often resulted in procurement inefficiencies, inventory shortages, and increased operational expenses (Martínez and Lopez, 2022). Consequently, firms worldwide are integrating modern logistics management practices, such as automated inventory systems, optimized transportation networks, and advanced warehousing solutions, to improve procurement performance by ensuring procurement of quality goods, reducing procurement lead time and securing reliable suppliers of goods and services (Nguyen and Zhang, 2024).

Procurement performance is the effectiveness of an organization in acquiring goods and services that meet specified requirements in terms of cost, quality, and delivery time (Kumar and Patel, 2022). Three key measures of procurement performance include quality of goods procured, procurement lead time, and supplier reliability. The quality of goods procured is essential as substandard inputs can lead to defective outputs, customer dissatisfaction, and financial losses (Alabi and Owusu, 2023). Procurement lead time which measures the duration between placing an order and receiving the goods has the potential to affect production schedules and overall business continuity (Osei *et al*., 2024). Supplier reliability measures the consistency and dependability of suppliers in delivering goods as agreed, which is crucial for maintaining stable production flows and avoiding unexpected delays (Mensah and Adeyemi, 2023). Logistics management plays a pivotal role in improving these procurement performance measures by ensuring goods are sourced efficiently, transported swiftly, and stored optimally (Chen *et al*., 2023).

Logistics management encompasses the planning, implementation, and control of the efficient movement and storage of goods from suppliers to end-users (Tanaka and Liu, 2022). Components of logistics management such as inventory management, transportation management, and warehousing management are said to be critical in improving procurement performance. Inventory management ensures that stock levels are optimized to prevent overstocking or shortages, reducing costs while maintaining supply consistency (Johnson *et al*., 2023). Transportation management focuses on selecting efficient transport modes to enhance delivery speed, reduce costs, and improve supplier reliability (Mwangi and Boateng, 2024). Warehousing management deals with the proper storage and handling of goods to maintain quality and facilitate timely distribution (Kim and Hassan, 2023). These logistics dimensions collectively enhance procurement efficiency by minimizing delays, reducing wastage, and improving supply chain responsiveness.

Globally, businesses are investing heavily in logistics management to boost procurement performance. In developed economies, companies leverage digital solutions such as blockchain for supply chain transparency, artificial intelligence (AI) for demand forecasting, and smart warehouses for automated inventory control (Singh *et al*., 2022). For instance, multinational firms such as Amazon and Alibaba have revolutionized procurement efficiency by integrating logistics technologies to minimize procurement lead times and enhance supplier reliability (Gonzalez and Pereira, 2023). Developing economies, however, face infrastructural challenges such as poor road networks, inefficient port operations, and limited access to logistics technology, which hinder procurement efficiency (Chikwe and Oladipo, 2023). Despite these challenges, many firms are adopting logistics solutions to improve procurement processes, albeit with varying degrees of success.

In Nigeria, logistics inefficiencies continue to impede procurement performance in various industries. Companies like Mikap Nigeria Limited, which operates in Makurdi, Benue State, encounter procurement challenges such as unreliable supplier networks, high transportation costs, and suboptimal warehousing systems (Abubakar and Eze, 2024). These issues affect the quality of goods procured, increase procurement lead times, and reduce supplier reliability, ultimately hindering operational efficiency. While Mikap Nigeria Limited has adopted logistics management practices to address these challenges, persistent inefficiencies remain, indicating a gap in the practical application of logistics strategies (Okoro and Yusuf, 2023).

This study is anchored on the Resource-Based View (RBV) theory, which posits that an organization's sustainable competitive advantage stems from the strategic use of internal resources that are valuable, rare, inimitable, and non-substitutable. Logistics management through its components such as inventory control, transportation coordination, and warehousing, represents a bundle of internal capabilities that can enhance procurement performance by ensuring consistent quality of supplies, minimizing delays, and fostering dependable supplier relationships. Applying the RBV theory provides a theoretical lens to understand how Mikap Nigeria Limited can leverage these logistics resources not just to overcome procurement inefficiencies, but also to build long-term operational resilience and competitive strength. Thus, this study seeks to evaluate the effectiveness of logistics management in enhancing procurement performance in Mikap Nigeria Limited.

1.2 Statement of the Problem

Procurement performance remains a critical determinant of organizational efficiency, especially within Nigeria's manufacturing sector. Companies such as Mikap Nigeria Limited in Makurdi rely heavily on timely procurement of quality raw materials and consistent supplier delivery to sustain production and remain competitive. However, across many Nigerian firms, logistics management remains a major obstacle in achieving procurement efficiency. Common issues such as poor infrastructure, unreliable supplier networks, high transportation costs, inefficient inventory systems, and inadequate warehousing facilities continue to undermine procurement outcomes (Chikwe & Oladipo, 2023; Mwangi & Boateng, 2024). These logistics deficiencies result in inconsistent quality of procured goods, prolonged procurement lead times, and erratic supplier reliability, ultimately affecting operational continuity and customer satisfaction.

Studies that explored logistics management in relation to procurement performance in various contexts such as Johnson *et al.* (2023) emphasized the role of inventory control in improving procurement timelines, while Kim and Hassan (2023) explored the significance of warehousing in ensuring material quality. However, most of these studies have been conducted in more structured economies or in sectors with relatively advanced logistics systems, leaving a contextual gap in how these strategies function within developing countries like Nigeria, where logistical constraints are more pronounced. Furthermore, there is a methodological gap in existing literature, as many studies have relied on qualitative assessments or descriptive surveys without employing robust empirical methods to measure the direct impact of logistics components (inventory, transportation, and warehousing) on procurement performance indicators such as quality of goods, procurement lead time, and supplier reliability. From a theoretical

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standpoint, while the Resource-Based View (RBV) theory underpins the idea that internal resources like logistics can drive competitive advantage, few studies in Nigeria have tested this theory empirically within the procurement function. This creates a theoretical gap that warrants exploration.

Meanwhile at Mikap Nigeria Limited, despite the adoption of logistics practices such as improved inventory tracking, route optimization, and warehousing upgrades, persistent challenges remain. Raw material quality is sometimes compromised due to unreliable suppliers, lead times fluctuate due to external logistics constraints, and supplier dependability varies amidst economic uncertainties. These experiences mirror broader national trends, indicating a systemic issue in the effective integration and operationalization of logistics strategies in procurement functions. Therefore, this study seeks to fill these gaps by critically assessing the effect of logistics management practices specifically inventory management, transportation management, and warehousing management on procurement performance in a developing economy context, using Mikap Nigeria Limited as a case study. The research aims to provide empirical evidence, rooted in theory, on the extent to which logistics capabilities can enhance procurement performance and what strategic improvements are necessary for long-term efficiency.

1.3 Objectives of the Study

The main objective of this study is to examine the effect of logistics management on procurement performance in Mikap Nigeria Limited, Makurdi, Benue State. This study specifically seeks to:

i. assess the effect of inventory management on procurement performance in Mikap Nigeria Limited Makurdi, Benue State.
ii. examine the influence of transportation management on procurement performance in Mikap Nigeria Limited Makurdi, Benue State.
iii. evaluate the impact of warehousing management on procurement performance in Mikap Nigeria Limited Makurdi, Benue State.

1.4 Hypotheses

This study is guided by the following null hypotheses:

H_{01}: Inventory management has no significant effect on procurement performance in Mikap Nigeria Limited.

H_{02}: Transportation management has no significant influence on procurement performance in Mikap Nigeria Limited.

H_{03}: Warehousing management does not significantly impact procurement performance in Mikap Nigeria Limited.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

This study is anchored on the Resource-Based View (RBV) Theory. This is because RBV focuses on internal organizational resources and capabilities as the primary determinants of competitive advantage and performance. Logistics management, encompassing inventory control, transportation, and warehousing, represents strategic resources that firms can optimize to improve procurement efficiency.

2.1.1Resource-based view (RBV) theory

The Resource-Based View (RBV) Theory was first introduced by Barney (1991) and has since been widely applied in strategic management to explain firm performance. The central premise of RBV is that an organization's ability to sustain competitive advantage depends on the uniqueness, value, and inimitability of its internal resources. In the context of logistics management, RBV suggests that firms that effectively develop and deploy logistics capabilities (such as advanced inventory management, efficient transportation networks, and well-structured warehousing) can achieve superior procurement performance. RBV theory is based on three key assumptions. First, it assumes that resources are heterogeneous, meaning that firms possess unique capabilities that differentiate them from competitors. Second, it posits that resources are imperfectly mobile, implying that they cannot be easily transferred or replicated by competitors. Lastly, it asserts that resources must meet the VRIN criteria (they must be valuable, rare, inimitable, and non-substitutable) to confer a sustainable advantage (Barney, 1991; Grant, 2022). RBV remains highly applicable to this study as it explains how logistics management functions serve as strategic resources that directly impact procurement performance. For instance, efficient inventory management reduces stockouts and overstocking, effective transportation enhances delivery reliability, and optimized warehousing minimizes storage costs, all of which contribute to procurement efficiency at Mikap Nigeria Limited.

2.2 Conceptual Framework

This sub-section examines the concepts that relate to the topic under investigation. The concepts considered in this study are logistics management and procurement performance.

2.2.1Logistics management

Logistics management is a fundamental component of supply chain operations, playing a critical role in ensuring the efficient movement of goods, services, and information from suppliers to end-users. It encompasses the planning, implementation, and control of processes that optimize the flow of materials, ensuring the right products reach the right place at the right time. The increasing complexity of global trade, rising customer expectations, and technological advancements have made logistics management a key determinant of business success. According to Christopher (2022), logistics management is the strategic coordination of procurement, transportation, inventory, and warehousing to enhance organizational efficiency and customer satisfaction. This emphasizes logistics as an integrated function that supports business objectives by reducing operational bottlenecks. Similarly, Bowersox *et al*. (2023) define logistics management as the part of supply chain management responsible for the planning, execution, and control of the efficient movement and storage of goods, services, and related information from point of origin to point of consumption. This highlights logistics as a subset of supply chain management, reinforcing its role in ensuring seamless business operations.

In the agricultural processing subsector, logistics management is particularly crucial as it determines the efficiency of farm-to-market operations. Given the perishable nature of agricultural products, poor logistics management often results in significant post-harvest losses, reducing profitability for farmers and agribusinesses (Adeyemi and Nwachukwu, 2022). The lack of cold storage facilities, unreliable transportation systems, and poor road infrastructure further exacerbate these losses. However, advancements in agricultural logistics, such as the use of refrigerated transportation, improved warehousing systems, and better supply chain integration, have enhanced efficiency in agricultural processing. Companies engaged in agro-processing, such as Mikap Nigeria Limited, rely on efficient logistics to ensure that raw materials are sourced, processed, and distributed within optimal timeframes to maintain quality and reduce spoilage.

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Based on the insights from this discussion, logistics management in the context of this study can be defined as the systematic coordination of inventory, transportation, and warehousing activities to enhance procurement performance by ensuring the timely delivery of quality goods and improving supplier reliability. This definition aligns with the strategic logistics perspective (Mentzer *et al*., 2001). This perspective emphasizes transportation management, inventory management, and warehousing management as key dimensions that directly affect procurement performance. Unlike other perspectives, this approach provides a structured framework for improving procurement lead time, supplier reliability, and product quality while adapting to logistical challenges in Nigeria (Stock and Lambert, 2001).

i. Transportation Management

Transportation management is a critical dimension of logistics that focuses on the movement of goods, materials, and products from suppliers to manufacturers, distributors, and end-users. Grant *et al*. (2022) define transportation management as the planning, execution, and optimization of freight movement within supply chains to achieve efficiency and cost-effectiveness. Their perspective emphasizes the need for strategic decision-making in selecting transport modes, routes, and carriers. Johnson and Taylor (2023) expand on this by highlighting the integration of technology in transportation, where digital tracking and automated scheduling systems improve delivery timelines and reduce disruptions. Bowersox *et al*. (2023) add that transportation management is not just about movement but also about enhancing supply chain responsiveness, ensuring the right goods reach the right location at the right time. Transportation management offers overwhelming benefits when effectively implemented. It enhances supply chain visibility, improves cost control, and increases overall operational efficiency. Companies adopting advanced transportation strategies, such as real-time vehicle tracking and route optimization, experience reduced transportation costs and faster delivery times (Olawale and Hassan, 2023). For the purpose of this study, transportation management is defined as the strategic coordination and optimization of freight movement within procurement processes to ensure timely delivery, cost efficiency, and supply chain resilience. This aligns with the definition by Johnson and Taylor (2023), which emphasizes the integration of technology for efficiency and reliability.

ii. Inventory Management

Inventory management refers to the systematic control, tracking, and regulation of stock levels to ensure that organizations maintain an optimal balance between supply and demand. Ballou (2023) defines inventory management as the science of maintaining adequate stock levels to meet customer demands without incurring unnecessary holding costs. Foss and Pedersen (2023) expand on this by incorporating demand forecasting into inventory management, emphasizing how predictive analytics helps businesses avoid overstocking or understocking. Stock and Lambert (2023) provide a broader view, describing inventory management as a strategic component of logistics that enhances organizational flexibility by ensuring a continuous flow of materials. The benefits of effective inventory management are immense. It enhances supply chain efficiency, reduces costs, and improves customer satisfaction by ensuring the consistent availability of products. Companies that implement automated inventory systems experience better forecasting accuracy, reduced carrying costs, and improved supplier coordination (Adeyemi and Nwachukwu, 2022). A common theme among scholars is that data-driven inventory management strategies, particularly through digital tools, are essential for maintaining operational stability. For this study, inventory management is defined as the structured and data-driven approach to regulating stock levels to enhance supplier reliability and procurement efficiency. This aligns with the definition by Foss and Pedersen (2023), which highlights demand forecasting and strategic decision-making as integral aspects of inventory control.

iii. Warehousing Management

Warehousing management is the administration of storage facilities to ensure efficient handling, stocking, and dispatch of goods within the supply chain. Christopher (2022) defines warehousing management as the process of optimizing storage, retrieval, and distribution of goods to maximize operational efficiency. Olawale and Hassan (2023) extend this definition to include the role of automation in modern warehousing, where technology-driven solutions such as robotics and real-time inventory tracking enhance operational performance. Johnson and Taylor (2023) describe warehousing as a crucial function that ensures the proper handling and protection of goods, reducing losses and enhancing supply chain reliability. In Nigeria, warehousing management is plagued by challenges such as poor infrastructure, inadequate storage facilities, power outages, and inefficient handling practices (Okafor and Ibrahim, 2023). These issues contribute to material wastage, increased storage costs, and supply chain inefficiencies. Despite these challenges, warehousing management provides immense benefits. It enhances inventory accuracy, reduces waste, and improves order fulfillment efficiency. Companies leveraging advanced warehousing technologies, such as barcode scanning and automated storage systems, experience lower storage costs and higher productivity (Bowersox *et al*., 2023). For this study, warehousing management is defined as the strategic coordination of storage and distribution facilities to maintain the quality of procured goods and ensure efficient supply chain operations.

2.2.2Procurement Performance

Procurement performance is a critical aspect of organizational management, influencing efficiency, cost-effectiveness, and sustainability across various industries. It refers to the ability of an organization to acquire goods and services in a manner that meets predefined standards of quality, cost, and timeliness. According to Adetunji and Okonkwo (2022), procurement performance is the extent to which procurement objectives align with overall organizational goals, ensuring efficiency in resource utilization and supply chain optimization. Similarly, Olamide and Bello (2023) argue that procurement performance is not only about achieving cost reductions but also about ensuring the sustainability and resilience of supply chains through strategic sourcing and supplier diversification. Mensah and Boateng (2023) define procurement performance as the measurement of procurement activities based on cost-effectiveness, supplier consistency, and compliance with contractual agreements.

In the context of this study, procurement performance can be defined as the efficiency and effectiveness of procurement activities in ensuring timely, cost-effective, and quality-compliant sourcing of raw materials and supplies to enhance production and market competitiveness. This definition aligns closely with the perspective of Olamide and Bello (2023), who emphasize procurement performance as a means of ensuring supply chain sustainability and production continuity. By focusing on procurement performance as a multidimensional construct, this study highlights the need for strategic procurement planning, robust supplier management, and efficient logistics coordination to optimize agricultural processing operations in Nigeria. As businesses navigate increasingly complex

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supply chains, procurement performance has become a focal point for ensuring competitiveness and long-term operational success. The evaluation of procurement performance typically considers key parameters such as the quality of procured goods, procurement lead time, supplier reliability, cost efficiency, and adherence to regulatory standards (Kaplan and Norton, 2001).

i. **Quality of Goods Procured**

Quality of goods procured refers as the consistency of goods in meeting safety and environmental standards, particularly in industries where regulatory compliance is crucial (Benson and Carlisle, 2024). It is the ability of acquired goods to meet specified standards and performance requirements. It ensures that materials and products used in production align with technical specifications, durability expectations, and regulatory compliance. Owen and Hartman (2022) define procurement quality as the extent to which purchased goods conform to predetermined specifications and meet the functional needs of an organization. This definition emphasizes adherence to technical and contractual requirements, reducing variability in production processes.

ii. **Procurement lead time**

Procurement lead time refers to the duration between the initiation of a purchase request and the final delivery of goods. It is a key performance indicator that influences inventory management, production scheduling, and cost control. According to Williams and Keenan (2022), procurement lead time is the time interval between order placement and the receipt of goods, reflecting the efficiency of procurement processes. This focuses on operational responsiveness and supply chain coordination. Similarly, Duncan and Lopez (2023) describe procurement lead time as the sum of administrative, supplier, and logistics time required to complete a procurement cycle. In this study, procurement lead time is defined as the total time required to complete the sourcing and delivery of agricultural raw materials, ensuring minimal delays and optimal processing timelines.

iii. Supplier Reliability

Supplier reliability refers to the consistency of suppliers in delivering goods that meet quality, quantity, and timing requirements. It is a crucial factor in procurement performance, influencing supply chain stability and operational efficiency. According to Carson and Miller (2022), supplier reliability is the degree to which suppliers fulfill contractual agreements without delays, discrepancies, or quality deviations. This definition emphasizes contractual adherence and risk minimization. In a similar view, Randall and O'Connor (2023) define supplier reliability as the extent to which suppliers maintain a track record of timely and accurate deliveries, ensuring business continuity. In this study, supplier reliability is defined as the extent to which agricultural input suppliers consistently meet quality, quantity, and timeliness expectations, ensuring seamless procurement and production processes.

2.3 Review of Related Empirical Studies

Ifekanandu *et al.* (2024) examined the relationship between logistics management and operational efficiency of Food and Beverage Firms in Port Harcourt, Nigeria. The study adopted the correlation survey research. The population of the study comprised 30 food and beverage firms in Port Harcourt and census approach was adopted with a focus on the staff (inventory manager, distribution manager and warehousing manager). The questionnaire was distributed the staff and data collected were analyzed using the Spearman Rank-order Correlation Coefficient. The study established that transport management showed a positive and significant relationship with operational efficiency of food and beverages firms in Port Harcourt. It also confirmed that inventory management showed a positive and significant relationship with operational efficiency of food and beverages firms in Port Harcourt. While this study provided valuable insights into how transport and inventory management enhance operational efficiency, it was limited in scope, covering only food and beverage firms in a single city. It also concentrated on operational efficiency rather than procurement performance. The current study fills this gap by broadening the scope to the agricultural processing subsector and focusing specifically on procurement performance rather than general operational efficiency.

Mutuga *et al.* (2024) conducted a study on the effect of logistics management practice on firm performance of Kenya's tea subsector industry. The study examined the effect of transport management, inventory management and distribution management practices on firm performance of Kenya's tea subsector industry. The research adopted a quantitative research design and a stratified random sampling technique was used to select a sample size of 155 firms from the target population of 254 firms. Primary data were collected by use of self-administered structured questionnaire which were distributed through the drop and pick method. Data were analyzed using descriptive statistics and inferential statistics using Statistical Package for Social Sciences (SPSS) version 24. The Pearson's Product Moment Correlation analysis and standard multiple regression analysis were used for hypotheses testing. The data was presented using tables, and figures for the purpose of giving a pictorial view of the results. The findings indicated that transport management, inventory management and distribution management practices had a statistically significant and positive effect on firm performance of Kenya's tea subsector industry. While relevant to agricultural commodities, the study focused on Kenya's tea industry, which has a structured value chain and export-oriented logistics. Nigeria's agricultural processing subsector, in contrast, faces different challenges such as inadequate infrastructure and supply chain fragmentation. The present study addresses this gap by focusing on logistics management within Nigeria's agricultural processing industry, broadening the regional and industry-specific scope.

Chukwu *et al*. (2024) examined the effect of logistics management on the performance of transportation firms in Enugu State Nigeria. The study utilized a survey research design. The sample size of 400 respondents was drawn from population of 1,052 staff of the selected indigenous transportation companies in Enugu State namely: ABC Transport, Peace Mass Transit, Young Shall Grow and Enugu State Transport Company. The data analytical technique was regression analysis and findings indicated that logistics demand planning has significant effect on safety delivery of transportation firms in Enugu State and storage and material handling has significant effect on rapid response of transportation firms in Enugu State. Their study contributed to understanding logistics efficiency in the transport sector but did not consider procurement performance or industries reliant on agricultural raw materials. The present study fills this gap by shifting the focus to the agricultural processing subsector, where logistics efficiency directly affects procurement performance.

Aopare *et al*. (2024) conducted a study on the effects of logistics management on organizational performance of pharmaceutical manufacturing companies in the Ashanti region of Ghana. A descriptive cross-sectional study was used to obtain primary data.

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The study considered all Pharmaceutical Manufacturing Companies in the region and therefore census sampling was done. The study sample consisted of 30 managers of Pharmaceutical industries. Thirty (30) top managers of Pharmaceutical Manufacturing Companies were sampled using a simple random sampling technique. With the aid of the Open Data Kit (ODK) software designed for Android OS, data was collected using mobile phone device. The results of regression analysis indicated that logistics management has a positive significant effect on the performance of pharmaceutical manufacturing companies in Kumasi, Ghana. Assurance of information quality systems and promotion of collaboration among the actors of the supply chain have positive effect on the performance of pharmaceutical companies. While informative, the study was limited to pharmaceutical firms and did not explore procurement performance. The agricultural processing industry presents different logistical challenges, such as supply chain seasonality and bulk storage requirements. The current study bridges this gap by investigating logistics management's effect on procurement performance in agricultural processing.

Mwizerwa and Akumuntu (2024) examined the effect of warehousing management on supply chain performance with focus on Inyange Industries Ltd in Kenya. The study determined the effect of inventory management, warehouse capacity building, and material handling on supply chain performance in Inyange Industries Ltd. The study adopted a descriptive survey research method. The population of the study were 105 staff members of Inyange Industries Ltd and a census was used to contact all the respondents. Questionnaire was used to gather primary data which were analyzed using descriptive and inferential statistics with the aid of the Statistical Package for the Social Sciences (SPSS). The study found that supply chain performance is positively and significantly affected by both automated and manual material handling. Mechanical material handling, on the other hand, improves supply chain performance, but not much. This study highlighted the effect of inventory, warehouse capacity, and material handling but did not specifically examine procurement performance. Additionally, focusing on a single firm limits generalizability. The present study expands the scope by analyzing logistics management's impact on procurement performance in agricultural processing firm in Nigeria.

Kanyepe (2023) investigated the effect of transport management practices on the performance of diamond mining companies in Zimbabwe. A survey design was adopted for the study. The study population of the study comprised 92 staff of four authorized diamond mining companies in Zimbabwe. A convenience sampling technique was drawn from logistics, procurement, and finance departments. Respondents were selected using stratified random sampling techniques. Data was collected using a structured 5-point Likert scale questionnaire. Multiple regression was used for data analysis. The study found that vehicle scheduling, route planning, vehicle tracking, and fuel management positively influence the performance of diamond mining companies. The study provides valuable insights but is limited by its reliance on a convenience sampling technique, which may introduce bias and reduce generalizability. Moreover, while transport logistics is an essential part of logistics management, the study does not consider other logistics dimensions that may also impact performance.

3.0 METHODOLOGY

The study adopted a case study survey research design, combining the depth of a case study with the structured data collection advantages of survey research. This design was considered appropriate because the study focused on a single organization, Mikap Nigeria Limited, to obtain an in-depth understanding of how logistics management practices influence procurement performance within its operational context. The survey aspect enabled the collection of standardized primary data through structured questionnaires, while the case study approach facilitated detailed examination of organizational processes and outcomes at a single point in time. The population comprised 58 staff drawn from management, procurement, finance, marketing, transport, quality control, store, and production departments due to their direct involvement in logistics and procurement activities. Given the manageable size, a census approach was adopted, making the sample size 58, alongside purposive sampling since only relevant staff were included. However, out of the 58 questionnaires administered, only 48 were retrieved and used for analysis, thereby constituting the effective sample size for the study.

Data were collected using a structured questionnaire divided into two sections: Part A captured demographic information, while Part B addressed logistics management and procurement performance variables, measured on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The instrument's validity was ensured through face and content validation by supervisors, alongside a pre-test and exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) value of 0.83124 confirmed sampling adequacy, while the Total Variance Explained (0.8171) indicated strong factor representation. Bartlett's Test of Sphericity ($\chi^2 = 7669$, df = 6, p = 0.000) further confirmed that the data were suitable for factor analysis. Reliability was established through a pilot study conducted on 19 respondents from a similar firm (Seraph Nigeria Limited), using Cronbach's Alpha. The results showed strong internal consistency: inventory management (0.872), transportation management (0.815), warehousing management (0.781), and procurement performance (0.829), with an overall average of 0.824, all exceeding the 0.7 threshold. Questionnaires were administered directly by the researcher and retrieved the following day.

The study specified logistics management (inventory management, transportation management, and warehousing management) as the independent variable and procurement performance (procurement lead time, quality of goods procured, and supplier reliability) as the dependent variable. The model was expressed functionally as PP = f(LM), and explicitly as $PP = \alpha + \beta_1 IM + \beta_2 TM + \beta_3 WM + \varepsilon$, where all coefficients were expected to be positive ($\beta_1, \beta_2, \beta_3 > 0$). Data analysis involved both descriptive and inferential statistics. Descriptive tools such as frequency tables, percentages, and mean were used to summarize demographic data and research questions, while multiple regression analysis was employed to test the hypotheses. The analysis was conducted using SPSS version 25.0, with significance determined using t-values and p-values at a 0.05 level. The decision rule stated that if the calculated t-value exceeds 1.96 and the p-value is less than 0.05, the null hypothesis is rejected; otherwise, it is accepted.

4.0 RESULTS AND DISCUSSION

4.1 Regression analysis

Table 1 presented the model summary from the regression analysis. The summary provides a strong indication of the predictive strength of logistics management variables namely; inventory management, transportation management, and warehousing management, on procurement performance in Mikap Nigeria Limited. The multiple correlation coefficient R is 0.899, which signifies a very high level of correlation between the predictors and the dependent variable, procurement performance. This value suggests that as the predictors improve, procurement performance is likely to increase as well. The

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R Square value of 0.808 reveals that approximately 80.8% of the variability in procurement performance can be accounted for by the three logistics management components under consideration. This high proportion of explained variance is indicative of a strong model fit, suggesting that the selected independent variables are highly relevant in understanding and predicting procurement outcomes in the context of the organization.

Further reinforcing the model's strength is the Adjusted R Square value of 0.796. This figure adjusts for the number of predictors in the model and provides a more accurate measure of the model's explanatory power when generalizing to other samples. The minimal difference between R Square and Adjusted R Square values shows that the model is not overfitted and that all predictors contribute meaningfully to the explanation of procurement performance. The standard error of the estimate is 0.421, reflecting the average distance between the observed and predicted values. This relatively low error suggests a good precision of the prediction model. Additionally, the Durbin-Watson statistic of 1.917 with a p-value of 0.000 indicates no evidence of problematic autocorrelation in the residuals, thus validating the independence of the error terms.

Table 1: Model Summary

Model	R	R Square	R square adjusted	Std. error of the estimate	Durbin Watson statistic
1	.899[a]	0.808	0.796	0.421	1.917

a. Predictors: (Constant), Warehousing management, Transportation management, Inventory management

b. Dependent Variable: Procurement performance

Source: Author's Computations using SPSS 2026.

The ANOVA (Analysis of Variance) in Table 2 provides critical statistical insight into the overall significance of the regression model examining the effect of logistics management on procurement performance in Mikap Nigeria Limited. The F-statistic is 91.948, with a corresponding significance (p-value) of 0.000. This low p-value, which is well below the standard threshold of 0.05, indicates that the regression model is statistically significant, meaning that at least one of the independent variables (inventory management, transportation management, or warehousing management), meaningfully predicts procurement performance. The sum of squares for regression is 48.914, while the residual sum of squares is 11.574, giving a total sum of squares of 60.488. This partitioning of the total variation reveals that a substantial portion of the variance in procurement performance is explained by the model. Specifically, the regression sum of squares, which is the explained portion, accounts for a much larger proportion of the total variability than the residual (unexplained) portion. This supports the earlier R Square value of 0.808 and further confirms that the independent variables collectively have a strong explanatory power.

Moreover, the mean square for regression is 16.305, which when divided by the mean square of the residual (0.231), results in the high F-statistic value. This large F-value highlights that the variance explained by the model is significantly greater than the variance left unexplained, reinforcing the robustness of the model. Overall, the ANOVA results substantiate that the model does not just fit the sample data well but also has statistical validity in explaining procurement performance. This provides evidence that logistics management components play a central and statistically meaningful role in shaping procurement outcomes in Mikap Nigeria Limited.

Table 2: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.914	3	16.305	91.948	.000[b]
	Residual	11.574	44	0.231		
	Total	60.488	47			

a. Predictors: (Constant), Warehousing management, Transportation management, Inventory management

b. Dependent Variable: Procurement performance

Source: Author's Computations using SPSS 2026.

The regression results in Table 12 indicate that procurement performance is jointly explained by inventory management, transportation management, and warehousing management. Substituting the standardized beta values into the model gives PP = 0.281 + 0.224IM + 0.715TM + 0.341WM, which expresses the relative predictive strength of each variable. The standardized beta coefficient for inventory management is 0.224. This means that for every one standard deviation increase in inventory management practices, procurement performance increases by 0.224 standard deviations, assuming other factors remain constant. Although this relationship is statistically significant (p = 0.003), its impact is the least strong among the three predictors. This implies that while practices such as reorder planning, stock control, and safety stock levels matter, their effect on procurement outcomes like supplier reliability and lead time is more limited relative to the other predictors in this model.

Next, the standardized beta coefficient for transportation management is 0.715, which is the highest among the predictors. This indicates that a one standard deviation improvement in transportation efficiency leads to a 0.715 standard deviation improvement in procurement performance. With a highly significant p-value of 0.000 and a very large t-value (10.096), this finding underscores that logistics aspects such as route optimization, timely deliveries, fleet availability, and cold chain logistics are the most powerful drivers of procurement efficiency at Mikap Nigeria Limited. This result reflects the realities of Nigerian logistics, where poor infrastructure and delays can severely impair procurement outcomes.

The standardized beta coefficient for warehousing management is 0.341, placing it between transportation and inventory in terms of impact strength. A one standard deviation improvement in warehousing management results in a 0.341 standard deviation increase in procurement performance, also with strong statistical significance (p = 0.000). This suggests that modern warehousing practices such as automated systems, accurate inventory tracking, and efficient layout design are substantial contributors to ensuring procurement goals are met, including minimizing procurement errors and ensuring timely availability of goods.

In terms of comparative strength, transportation management ranks highest in its effect on procurement performance, followed by warehousing management, while inventory management comes third. This ranking is critical for decision-making at Mikap Nigeria Limited, indicating that the company stands to gain the most from prioritizing improvements in transportation logistics. Hence, when allocating resources and redesigning logistics strategy, the management should consider investing more in transportation systems, followed by upgrading warehousing facilities and practices,

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and lastly refining inventory processes. The standardized beta values offer a clear, evidence-based foundation for such prioritization.

Table 3: Regression Coefficients

Model		Unstandardized coefficients (B)	Standardized coefficients (Beta)	t	P-Value
1	(Constant)	0.281		1.588	0.120
	Inventory Management	0.195	0.224	3.145	0.003
	Transportation Management	0.414	0.715	10.096	0.000
	Warehousing Management	0.287	0.341	4.847	0.000

a. Dependent Variable: Procurement performance

Source: Author's Computations using SPSS 2026.

4.2 Test of Hypotheses

In this section, the hypotheses earlier stated in this study are statistically tested using the results of the regression analysis conducted on the effect of logistics management on procurement performance in Mikap Nigeria Limited, Makurdi, Benue State in Table 3. The regression results provided relevant test statistics including t-values and p-values for each independent variable (inventory management, transportation management, and warehousing management) against the dependent variable, procurement performance. The decision rule guiding the hypothesis testing is as follows: If the p-value is less than the significance level of 0.05 ($p < 0.05$), the null hypothesis will be rejected; otherwise, it will be retained. The conclusions drawn are based on the statistical evidence presented in the coefficients table from the regression output.

4.2.1Test of hypothesis one

Inventory management has no significant effect on procurement performance in Mikap Nigeria Limited.

The regression output in Table 3 shows a t-value of 3.145 and a p-value of 0.003 for inventory management. Since the p-value of 0.003 is less than the 0.05 significance threshold, the null hypothesis is rejected. This implies that inventory management has a statistically significant effect on procurement performance in Mikap Nigeria Limited. The positive beta value of 0.224 indicates that improvements in inventory management are associated with improvements in procurement performance, specifically in terms of procurement lead time, quality of goods procured, and supplier reliability.

4.2.2Test of hypothesis two

Transportation management has no significant influence on procurement performance in Mikap Nigeria Limited

The regression result in Table 3 reveals a t-value of 10.096 and a p-value of 0.000 for transportation management. The p-value, being far less than 0.05, leads to the rejection of the null hypothesis. This result confirms that transportation management has a highly significant influence on procurement performance. The beta coefficient for transportation management is 0.715, which is the highest among all the predictors, suggesting that transportation management is the most influential logistics factor driving procurement performance in the company. Efficient transportation evidently enhances supplier reliability, shortens procurement lead time, and helps in maintaining the quality of goods procured.

4.2.3Test of hypothesis three

Warehousing management does not significantly impact procurement performance in Mikap Nigeria Limited

According to the regression analysis in Table 3, warehousing management has a t-value of 4.847 and a p-value of 0.000. Again, since the p-value is less than 0.05, the null hypothesis is rejected. This indicates that warehousing management significantly impacts procurement performance in Mikap Nigeria Limited. The beta value for warehousing management is 0.341, which, though lower than that of transportation management, is higher than inventory management. This suggests that warehousing is the second most impactful logistics management factor affecting procurement performance in Mikap Nigeria Limited.

4.3 Discussion of Findings

The aim of this study was to assess the impact of logistics management on the procurement performance of agricultural processing firms in Benue State, Nigeria. Three key logistics practices were examined: inventory management, transportation management, and warehousing management.

4.3.1Effect of inventory management on procurement performance in Mikap Nigeria Limited

The study found a significant positive relationship between inventory management and procurement performance of Mkap Nigeria Limited. This result suggests that agricultural processing firms in Benue State that adopt effective inventory management strategies, such as just-in-time systems, inventory forecasting, and stock optimization, are likely to experience enhanced procurement performance. This enhancement manifests through reduced stockouts, better alignment of procurement with production schedules, and overall cost efficiency. The implication of this finding is that inventory management plays a pivotal role in ensuring that the necessary raw materials are available when needed, without incurring unnecessary costs or wastage. In agricultural processing, where supply chains are often volatile due to seasonality and perishability of inputs, maintaining an efficient inventory system is crucial. These practices allow firms to manage the complexities of agricultural supply chains effectively, ensuring that procurement activities are streamlined and optimized for performance.

This finding is consistent with the Resource-Based View (RBV) theory, which posits that firms with superior internal capabilities such as robust inventory management systems can gain a competitive edge. This finding is consistent with Mutuga *et al.* (2024), who explored the effect of logistics practices in Kenya's tea industry and found that inventory management significantly impacted firm performance, especially in a sector characterized by perishable goods. Additionally, Aopare *et al*. (2024) in their study on pharmaceutical companies in Ghana also found that inventory management practices contributed to the performance of firms.

4.3.2Effect of transportation management on procurement performance in Mikap Nigeria Limited

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Transportation management was found to have a positive and statistically significant effect on procurement performance of Mkap Nigeria Limited This finding highlights the importance of transportation logistics in the agricultural processing industry, particularly in terms of ensuring the timely and cost-effective delivery of procured materials. Transportation management encompasses various strategies, such as route optimization, fleet management, and the use of real-time tracking systems, which can significantly improve procurement outcomes by reducing lead times and minimizing delivery disruptions. The implications of this finding are substantial. Efficient transportation systems ensure that agricultural raw materials, which may be perishable or require specific handling, arrive at processing plants on time, without unnecessary delays or damage. This reliability in transportation contributes directly to procurement performance by minimizing stockouts and reducing production downtime.

From the perspective of the Resource-Based View (RBV), transportation management represents a valuable organizational resource. Firms with well-developed transportation capabilities, such as efficient logistics networks and fleet management, possess a competitive advantage in managing their procurement needs. These capabilities are difficult to imitate and are essential for maintaining the competitive edge in procurement, especially in the agricultural processing industry, where supply chain disruptions can be particularly costly. This result aligns with Chukwu *et al*. (2024), who found that transportation logistics, specifically demand planning and storage, directly impacted the rapid response and safety delivery of goods. This is similar to the procurement performance in agricultural processing firms, where timely delivery is essential to reduce delays in production and ensure the availability of raw materials. In a similar vein, Mwizerwa and Akumuntu (2024) identified that transportation logistics within warehousing and supply chain management significantly influenced performance outcomes, underscoring the importance of efficient transportation in procurement.

4.3.3Effect of warehousing management on procurement performance in Mikap Nigeria Limited

The study also examined the role of warehousing management in enhancing procurement performance of Mkap Nigeria Limited. This finding suggests that effective warehousing practices are essential for agricultural processing firms, where the safe storage of raw materials especially those that are bulky or sensitive to environmental conditions is crucial. Proper warehousing management helps firms avoid material degradation, reduce procurement delays, and ensure the smooth flow of materials from suppliers to production units. Furthermore, efficient warehousing contributes to cost reduction by minimizing waste, improving stock rotation, and lowering the risks of stockouts. From the RBV perspective, warehousing management is another valuable resource that contributes to procurement performance. Firms that can optimize their warehouse capacities and material handling processes possess an internal resource that enhances their procurement functions, making them more responsive to changes in demand and supply chain dynamics.

Additionally, prior research supports this conclusion. Ifekanandu *et al*. (2024) emphasized the role of warehousing in supply chain and procurement management, pointing out that inefficiencies in warehousing can lead to delays in procurement processes. This reinforces the current study's finding that warehousing practices are integral to procurement efficiency, particularly in industries with seasonal and bulky goods like agriculture. Chukwu *et al*. (2024) further support this finding by showing that warehousing and material handling had a direct effect on the responsiveness and safety of goods delivery in transportation companies, suggesting that effective warehousing is crucial for procurement performance across sectors.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study aimed to investigate the effect of logistics management on procurement performance within Nigeria's agricultural processing industry. Three logistics management components were considered: inventory management, transportation management, and warehousing management. The findings from the regression analysis indicated that all three logistics management components investigated had a significant positive impact on procurement performance. All findings point to the fact that logistics practices in inventory management, transportation, and warehousing are crucial for improving procurement performance, especially within industries reliant on agricultural raw materials. The results confirm that efficient inventory management, transportation management, and warehousing practices significantly influence procurement outcomes. This study therefore concludes that logistics management has a significant positive effect on procurement performance of Mikap Nigeria Limited Makurdi, Benue State.

5.2 Recommendations

Based on the findings of this study, several recommendations are made for agricultural processing firms in Nigeria:

i. Mikap Nigeria Limited should invest in advanced inventory management systems and training for staff to optimize stock levels and improve demand forecasting. This will reduce stockouts and delays in procurement, improving operational efficiency.

ii. Given the significant role of transportation in procurement performance, Mikap Nigeria Limited should focus on optimizing transportation routes, ensuring vehicle maintenance, and investing in logistics technology to streamline delivery processes and reduce delays.

iii. Mikap Nigeria Limited should prioritize the development of efficient warehousing systems, including better material handling and storage solutions. Automation of warehouse processes could help reduce errors and improve material availability for production.

5.3 Suggestions for Further Studies

Based on the limitations and findings of this study, the following areas are suggested for further research: A longitudinal study that tracks changes in logistics practices over time and measures their impact on procurement performance would provide deeper insights into the long-term effects of logistics management practices. Also, a comparative study involving Nigeria and other countries within the African continent, or globally, would help to identify common logistics challenges in agricultural processing sectors and offer insights into best practices that could be adopted across different contexts.

5.4 Contribution to Knowledge

This study strengthens the application the resource-based view theory in Mikap Nigeria Limited by demonstrating how the interplay of logistics management dimensions (inventory management, transportation management and warehousing management) collectively impacts procurement performance in Mikap Nigeria

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Limited. The study also expands empirical research on logistics management in Mikap Nigeria Limited, by providing holistic empirical evidence that; Transportation management has the strongest effect on procurement performance of Mikap Nigeria Limited in the midst of warehousing management and inventory management.

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