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RESEARCH ARTICLE

THIRD-PARTY LOGISTICS AND OPERATIONAL EFFICIENCY IN NIGERIAN SUPERSTORES

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Abstract

Persistent operational inefficiencies such as stockouts, high logistics costs, and delayed deliveries continue to undermine the performance of superstores like Shoprite Ilorin despite the expansion of organized retail in Nigeria. These challenges, compounded by poor infrastructure and economic volatility, have prompted a strategic shift toward third-party logistics (3PL) as a solution to improve supply chain performance. This study assessed the impact of 3PL practices specifically supplier relationship management, enterprise resource planning (ERP) optimization, and customer relationship management (CRM) on the operational efficiency of Shoprite Ilorin. Adopting a descriptive case study design, the study targeted a population of 200 individuals comprising logistics staff, third-party providers, and customers. A purposive sample of 163 respondents was selected based on their relevance to logistics and operational functions. Data were collected through structured questionnaires and internal operational reports, and analyzed using SPSS Version 29. T-tests were conducted to determine the significance of relationships between 3PL activities and supply chain performance indicators. Findings revealed statistically significant relationships between each of the three 3PL components and operational efficiency. Strong supplier relationships enhanced coordination and inventory control; ERP optimization facilitated real-time visibility and better decision-making; and effective CRM improved customer satisfaction and service responsiveness. The study concludes that 3PL integration significantly boosts operational efficiency in Nigerian superstores. It recommends strengthening supplier partnerships, investing in ERP systems, enhancing CRM capabilities, engaging reliable 3PL providers, and conducting regular performance assessments and staff training to remain competitive in a dynamic retail environment.

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Introduction: -

Over the past two decades, the retail sector in Nigeria has experienced significant transformation with the emergence of modern large-scale superstores such as Shoprite Holdings, SPAR, Justrite Superstores, and MarketSquare. These organized retail outlets have changed the traditional pattern of shopping by providing consumers with a wide range of products within structured and convenient retail environments. Among these retailers, Shoprite Holdings

established its outlet in Ilorin in 2010 and has since become one of the most visible participants in the Nigerian organized retail market (Ugochukwu and Okafor, 2023). The continued growth of the sector is supported by Nigeria's rapidly increasing population, which is estimated to exceed 220 million people (World Bank, 2024), as well as rising urbanization, expanding middle class income, and changing consumer purchasing behaviour.

Despite this expansion, superstores in Nigeria continue to face persistent operational difficulties, particularly in the movement and timely delivery of goods required to meet consumer demand. Retail outlets such as Shoprite Holdings encounter several logistical constraints including inadequate road infrastructure, unstable fuel supply, delays in customs processing, fluctuations in foreign exchange rates, and unreliable electricity supply. These structural challenges affect critical operational indicators such as product availability, inventory turnover, and the level of customer service provided by retail organizations (OyelaranOyeyinka and Adeniran, 2023). As a result, improving operational efficiency has become a strategic priority for superstores operating in cities such as Ilorin where regional supply chain limitations can further affect retail performance.

In response to these challenges, many retail organizations have increasingly adopted third party logistics as an operational strategy. Third party logistics refers to the outsourcing of logistics functions such as transportation, warehousing, inventory control, and distribution activities to specialized logistics service providers. These providers possess the technological capability, infrastructure, and managerial expertise required to improve supply chain performance, reduce operational costs, and enhance customer satisfaction (Eze and Onwuka, 2024). At both global and local levels, the use of third-party logistics has become an important competitive approach that allows retail firms to focus on their core retail operations while external specialists manage logistics activities more efficiently (Ugwoke and Ibe, 2023).

Within the operational environment of Shoprite Holdings in Ilorin, the use of third-party logistics providers represents a practical strategy for addressing the logistical challenges associated with retail distribution in Nigeria's middle belt region. Logistics companies facilitate the connection between suppliers and retail shelves by providing scalable services such as demand responsive warehousing, digital inventory monitoring, and efficient distribution systems for final delivery. These services help improve operational performance through reduced delivery lead time, higher order accuracy, improved delivery reliability, and better control of distribution costs. Such performance outcomes are particularly important in the fast-moving consumer goods sector where efficiency in product movement directly influences customer satisfaction and profitability (Okoro and Adekunle, 2023).

In addition, the logistics sector in Nigeria is gradually incorporating digital technologies including global positioning systems, warehouse management platforms, and real time supply chain data analytics. Retail firms that successfully integrate third party logistics operations with these digital systems can gain better visibility across their supply chains and respond more effectively to changing market conditions (Chukwuemeka and Balogun, 2023).

Based on this context, this study examines the influence of third-party logistics on operational efficiency in Nigerian superstores using Shoprite Holdings in Ilorin as a case study. The study specifically evaluates how logistics outsourcing affects key operational indicators such as delivery lead time, order fulfillment rate, inventory accuracy, and cost per order. The findings of the study are expected to provide useful insights for retail managers, policymakers, and logistics service providers seeking to improve supply chain performance within the Nigerian retail industry.

Statement of the Problem: -

The expansion of superstores across Nigeria has been accompanied by continuing operational challenges. Large retail outlets such as Shoprite Holdings still experience inefficiencies in the management of logistics and distribution activities. The outlet of Shoprite Holdings in Ilorin, similar to many retail locations in the country, faces operational issues that include delays in inventory replenishment, frequent stockouts, rising transportation costs, and inconsistent performance in last mile delivery. These logistical shortcomings often reduce service quality, increase operational expenditure, and contribute to customer dissatisfaction within the retail environment (Okoro and Adekunle, 2023).

Current economic conditions in Nigeria have further intensified the operational pressure on retail organizations. High inflation, fluctuations in foreign exchange rates, and unstable infrastructure continue to raise the cost of business operations. Under these conditions, superstores are expected to maintain steady product availability while controlling operating expenses. However, many retail firms still rely heavily on internal logistics management

systems, which often lead to inefficient allocation of resources and reduced ability to respond quickly to changes in customer demand (Adebayo and Yusuf, 2022). These challenges have encouraged retail organizations to reconsider traditional operational structures and explore the outsourcing of logistics activities to specialized service providers.

Third party logistics providers offer professional services that include transportation management, warehousing, inventory control, and freight coordination. Through these services, logistics providers contribute to improved operational responsiveness and flexibility in retail supply chains (Eze and Onwuka, 2024). By utilizing the infrastructure and distribution networks of third-party logistics firms, retailers such as Shoprite Holdings can potentially reduce delivery lead times, enhance order accuracy, lower transportation risks, and expand operational capacity more efficiently. However, many retail firms in Nigeria have not fully benefited from these advantages because of limited strategic planning for logistics outsourcing and weak coordination between retailers and logistics service providers.

Traditional logistics practices such as internal distribution management, large scale inventory stocking, and reactive replenishment systems have become less effective in a highly competitive and uncertain retail environment. Modern supply chain practices, including Collaborative Planning, Forecasting, and Replenishment based on the Collaborative Planning, Forecasting and Replenishment model, are widely used in developed economies to improve coordination between supply chain partners. Yet these practices remain limited within Nigeria's retail sector due to insufficient strategic integration between retailers and logistics partners (Chukwuemeka and Balogun, 2023).

Given these conditions, it has become necessary to examine how third-party logistics arrangements influence the operational efficiency of superstores operating in Nigeria, particularly in regional markets such as Ilorin. While Shoprite Holdings maintains a strong national presence, the operational success of its local outlets depends largely on the effectiveness of supporting logistics systems that can respond to market demand, infrastructural limitations, and economic instability.

This study therefore examines the effect of third-party logistics practices on the operational efficiency of Shoprite Holdings in Ilorin. The research focuses on determining which logistics functions such as order fulfillment, transportation management, inventory control, and delivery lead time can be effectively outsourced in order to improve store level performance. The findings are expected to provide practical guidance for retail managers, logistics planners, and policy makers seeking to strengthen logistics partnerships and improve supply chain performance within the Nigerian retail industry.

Research Questions:-

The research questions were designed to examine how supplier relationship management, ERP optimization, and customer relationship management contribute to improving operational efficiency in Shoprite Ilorin.

- i. To what extent does supplier relationship management influence supply chain performance in Shoprite Ilorin?
- ii. How does enterprise resource planning (ERP) optimization affect supply chain performance in Shoprite Ilorin?
- iii. What is the relationship between customer relationship management (CRM) and supply chain performance in Shoprite Ilorin?

Research Objectives:-

The research objectives were designed to assess how key 3PL components influence operational efficiency in Shoprite Ilorin. Specifically, the study aims to:

- i. examine the influence of supplier relationship management on supply chain performance in Shoprite Ilorin;
- ii. assess the impact of enterprise resource planning (ERP) optimization on supply chain performance in Shoprite Ilorin; and
- iii. evaluate the relationship between customer relationship management (CRM) and supply chain performance in Shoprite Ilorin.

Research Hypotheses:-

- H0₁:** There is no significant relationship between supplier relationship management and supply chain performance in Shoprite Ilorin.
- H0₂:** Enterprise resource planning (ERP) optimization has no significant impact on supply chain performance in Shoprite Ilorin.
- H0₃:** Customer relationship management (CRM) is not significantly associated with supply chain performance in Shoprite Ilorin.

Literature Review:-

This section reviews scholarly and empirical works related to the role of third-party logistics (3PL) in enhancing operational efficiency, particularly in the retail sector. It focuses on how outsourced logistics activities such as warehousing, transportation, inventory management, order processing, and last-mile delivery influence performance indicators including lead time, inventory turnover, cost per order, order fulfillment rate, and customer satisfaction. The literature further explores key constructs such as supplier relationship management, customer relationship management, and enterprise resource planning within the 3PL framework, adapted to the context of Nigerian superstores, with specific attention to Shoprite Ilorin.

Third-Party Logistics (3PL):-

Third-party logistics (3PL) involves the outsourcing of logistics functions to external service providers who specialize in activities such as warehousing, transportation, and distribution. In the modern retail environment, many organizations rely on 3PL providers to handle non-core functions, allowing them to focus on customer engagement, merchandising, and store-level operations (Ugwoke&Ibe, 2023). For superstores like Shoprite Ilorin, 3PL partnerships provide scalable and efficient logistics solutions that support their regional supply chain networks. Eze and Onwuka (2024) argue that 3PL providers enhance value delivery through improved delivery speed, logistics visibility, and reduced operational costs. This is particularly crucial in Nigeria where poor infrastructure and high logistics costs challenge internal logistics systems. Shoprite Ilorin, for instance, benefits from outsourced warehousing and last-mile delivery systems that ensure regular stock replenishment, thereby enhancing customer satisfaction and service reliability.

Supplier Relationship Management (SRM):-

Supplier Relationship Management (SRM) refers to strategic engagement with suppliers to ensure timely delivery, quality input, and cost efficiency. In the retail sector, strong SRM ensures that superstores like Shoprite can maintain consistent inventory levels while adapting quickly to market demands (Okoro & Adekunle, 2023). The goal of SRM is to foster transparency, trust, and information sharing between the retailer and its upstream partners. According to Chukwuemeka and Balogun (2023), a well-managed supplier relationship contributes to shorter lead times and fewer stockouts, which directly influence order fulfillment rate and overall store efficiency. Effective SRM practices in 3PL arrangements also allow Shoprite to synchronize inventory planning and demand forecasting with its logistics partners, enhancing delivery reliability and operational performance.

Customer Relationship Management (CRM):-

Customer Relationship Management (CRM) plays a vital role in improving retail responsiveness and service quality. CRM in the context of 3PL focuses on aligning logistics services with customer expectations particularly in terms of delivery time, product availability, and issue resolution. Ferrer-Estevéz and Chalmers (2023) explain that CRM has evolved into a customer-centric approach where logistics data and digital tools are used to enhance consumer engagement and service satisfaction. In Nigerian superstores, timely restocking, reduced queue times, and efficient returns processes are often enabled by 3PL coordination. Ugochukwu and Okafor (2023) argue that customer-focused logistics strategies such as real-time order tracking and on-time delivery are crucial to driving loyalty in competitive markets like Ilorin. Shoprite's reliance on 3PL for last-mile delivery and returns logistics supports its CRM objectives and contributes to operational excellence.

Enterprise Resource Planning (ERP):-

Enterprise Resource Planning (ERP) systems integrate core business functions such as logistics, procurement, finance, and inventory. ERP, when combined with 3PL systems, provides real-time visibility of stock movements, delivery schedules, and order processing across supply chain nodes. In the context of Shoprite Ilorin, ERP integration with logistics partners allows for seamless coordination, faster replenishment, and better decision-making. Chinedu and Bello (2024) note that ERP-enabled 3PL partnerships provide valuable insights that help superstores monitor KPIs such as lead time, cost per order, and inventory turnover. ERP also enhances data-driven forecasting, reducing uncertainty in stock levels and promoting efficient supply chain execution.

Operational Efficiency in Retail Logistics:-

Operational efficiency in superstores is commonly measured using indicators like lead time, order fulfillment rate, cost per order, customer satisfaction, and inventory turnover. According to Siti (2024), improving logistics efficiency requires coordination, trust, and technological integration among supply chain partners. Retailers like Shoprite Ilorin that adopt 3PL strategies often experience improvements in delivery timeliness, inventory visibility,

and supply chain responsiveness. Outsourcing logistics functions to 3PL firms helps retailers reduce the total cost of ownership by avoiding investments in warehousing infrastructure, transport fleets, and logistics personnel. These providers also offer aggregated purchasing power and route optimization, which minimize distribution costs and improve profitability (Adebayo & Yusuf, 2022). Furthermore, enhanced logistics capabilities have a direct impact on customer satisfaction and store performance.

Conceptual Framework:-

3PLs Outsourcing Activities

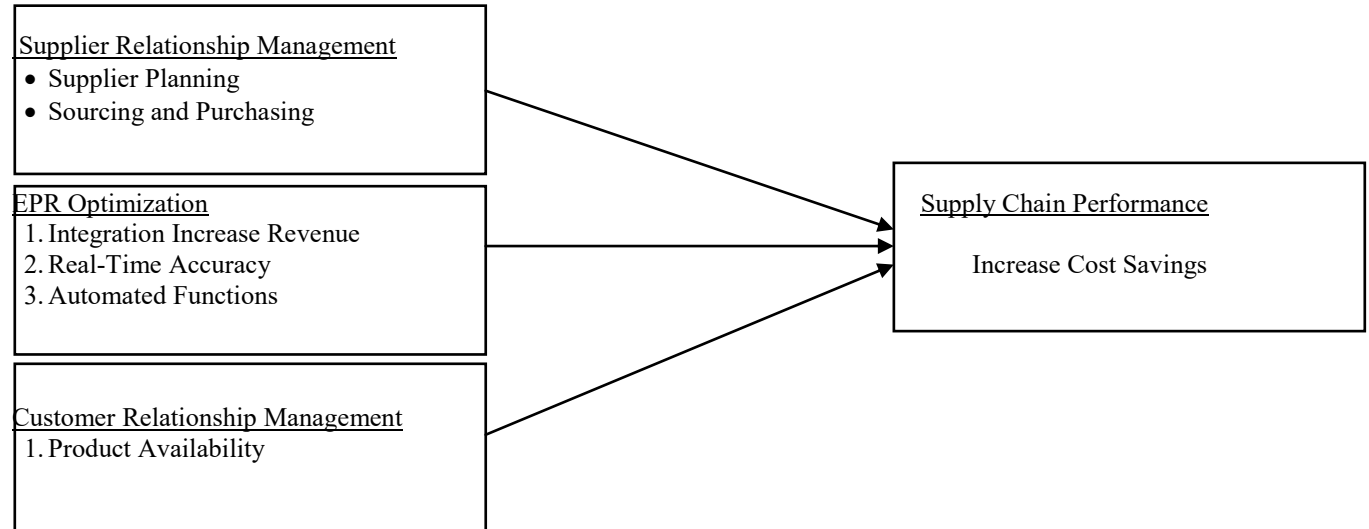


Figure 1: Conceptual Framework

Source: Field Survey, 2025

Theoretical Review:-

This study is grounded in three interrelated theories that collectively offer a comprehensive understanding of how third-party logistics (3PL) enhances operational efficiency in large-scale retail operations such as Shoprite Ilorin. These are: Resource-Based View (RBV), Core Competency Theory (CCT), and Transaction Cost Economics (TCE). Each theory contributes a distinct perspective on the rationale for outsourcing logistics activities and their strategic implications for operational performance.

Resource-Based View (RBV):-

The Resource-Based View (RBV) examines the connection between a firm's internal resources and its performance. It argues that sustainable competitive advantage stems from possessing and deploying resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). These resources can be either tangible (e.g., infrastructure, IT systems) or intangible (e.g., relationships, logistics expertise). In the context of Shoprite Ilorin, the RBV explains why certain logistics functions are outsourced. If logistics activities such as transportation or warehousing do not represent in-house competitive strengths or are resource-intensive to develop, outsourcing them to 3PL providers becomes a strategic move to access such capabilities externally. This allows the superstore to focus on customer-facing operations while leveraging external logistics resources to enhance service delivery (Okoro & Adekunle, 2023).

Core Competency Theory (CCT):-

Proposed by Prahalad and Hamel (1990), Core Competency Theory emphasizes that firms should concentrate on their core strengths areas that directly contribute to competitive advantage—while outsourcing non-core functions to external experts. The theory is particularly relevant to the “make or buy” decision in business operations. For a retail giant like Shoprite Ilorin, core competencies might include merchandising, customer experience, and brand management. In contrast, logistics functions such as inventory management, order processing, and last-mile delivery, while critical, are operational rather than strategic. Thus, outsourcing these functions to 3PLs helps the organization reduce operational burden, increase flexibility, and focus on its competitive strengths (Eze & Onwuka, 2024).

Transaction Cost Economics (TCE):-

Transaction Cost Economics (TCE) theory was propounded by Ronald H. Coase (1937), and was later expanded by Oliver E. Williamson (1975), provides another justification for outsourcing. It argues that organizations make sourcing decisions based on a comparative analysis of the costs of performing activities in-house versus outsourcing them. These costs include the cost of negotiation, coordination, monitoring, and enforcement of contracts. In the Nigerian retail context where infrastructure, fuel costs, and logistics fragmentation are major concerns Shoprite Ilorin may find that outsourcing logistics to specialized 3PL providers minimizes its transaction and operational costs. According to Adebayo and Yusuf (2022), partnering with logistics firms that have economies of scale and established networks can lower distribution costs, reduce lead times, and improve delivery accuracy, ultimately increasing overall operational efficiency.

The theory adopted for this study is Transaction Cost Economics (TCE), which emerged as the most suitable among the three reviewed theories. While the Resource-Based View (RBV) and Core Competency Theory (CCT) offer valuable perspectives on the strategic rationale for outsourcing, TCE provides a more direct and practical framework for understanding the cost-efficiency considerations that underpin logistics outsourcing decisions. This theory is particularly relevant to the operational realities of Shoprite Ilorin, where factors such as fuel prices, warehouse leasing costs, and transportation delays significantly impact day-to-day retail logistics.

TCE is centered on the idea that firms seek to minimize the costs of economic exchanges, whether performed internally or through external partnerships. It allows organizations to assess whether outsourcing logistics functions to third-party providers results in lower transaction costs than managing these functions in-house. This theoretical lens enables a more quantitative evaluation of how outsourcing decisions affect critical performance indicators such as lead time, inventory turnover, and cost per order. In the context of Shoprite Ilorin, where operational efficiency is essential to maintaining competitiveness and customer satisfaction, TCE offers a robust and evidence-based approach to analyzing logistics strategies.

By applying the principles of TCE, this study is positioned to explore the balance between internal inefficiencies and the potential benefits of leveraging specialized logistics providers. It provides a clear framework to examine how economic variables influence the decision to outsource, and how these decisions translate into measurable improvements in operational performance. Therefore, Transaction Cost Economics is adopted as the theoretical foundation for this research, offering a solid basis for investigating the relationship between third-party logistics and operational efficiency in Nigerian superstores.

Empirical Review:-

Numerous empirical studies have explored the relationship between third-party logistics (3PL) and supply chain performance, particularly in the context of the retail and service sectors. Mwilu (2021) investigated supply chain management practices in Kenyan public institutions and identified a critical gap in supplier involvement in strategic planning an insight relevant to retail outlets like Shoprite Ilorin, where supplier coordination through 3PL is essential for timely inventory replenishment. Omale et al. (2022) examined the impact of supply chain innovation on firm performance, highlighting the integration of actors such as customers, suppliers, and logistics providers to optimize responsiveness. In retail settings, 3PL firms facilitate this innovation by managing warehousing, transportation, and last-mile delivery, helping superstores reduce operational bottlenecks and meet customer demands efficiently.

Kimani (2021) assessed the effectiveness of lean supply chain models and stressed the need for balancing cost control, inventory management, and timely distribution all of which are influenced by 3PL services. However, the study pointed out a widespread neglect of customer perspectives in logistics decisions, a gap that retailers like Shoprite must address. Osoro (2022) studied logistics efficiency in the petroleum sector, emphasizing accurate demand forecasting and the role of external service providers in maintaining service quality. This is highly applicable to superstores, which rely on forecasting and reliable logistics to avoid stockouts and enhance customer satisfaction.

Okello and Were (2023), focusing on food manufacturing firms, discussed challenges in inventory control, lead times, and innovation challenges also faced by retail superstores depending on 3PL partnerships for seamless operations. Similarly, Kamau (2020) established that effective buyer-supplier relationships significantly enhance organizational performance, reinforcing the importance of well-managed 3PL relationships in retail logistics.

Broadly, Subramanian et al. (2022) and Zhang and Okoroafo (2021) affirmed that outsourcing logistics functions improves service delivery, reduces transaction costs, and boosts competitiveness. However, despite these contributions, there is limited research focusing on the application of 3PL in Nigerian superstores. This study addresses that gap by examining the influence of third-party logistics on operational efficiency in Shoprite Ilorin. It aims to provide practical insights into how outsourcing key logistics functions such as warehousing, transportation, and inventory control can enhance performance metrics like order fulfillment, cost efficiency, and customer satisfaction.

Research Gaps:-

The empirical literature reviewed reveals several critical gaps in the current body of knowledge surrounding third-party logistics (3PL) and operational efficiency, particularly within the context of Nigerian retail superstores like Shoprite Ilorin. Firstly, although multiple studies have explored supply chain practices in public institutions and manufacturing sectors across East Africa, there remains limited empirical evidence focusing specifically on the retail industry in Nigeria. This sectoral mismatch presents a contextual gap, as the logistics needs and operational realities of superstores differ significantly from those of public institutions or manufacturing firms. Moreover, most prior research has concentrated on internal logistics structures, with minimal exploration of how outsourcing to 3PL providers affects operational performance metrics such as lead time, cost per order, inventory turnover, and order fulfillment rates in retail settings.

Another notable gap lies in the underrepresentation of customer-centric logistics strategies. While Kimani (2021) acknowledged the importance of aligning supply chain decisions with customer expectations, many studies failed to incorporate external customer perspectives into their evaluation frameworks. For customer-focused organizations like Shoprite, this omission limits the understanding of how 3PL contributes to service quality and customer satisfaction. Additionally, while studies like those of Omale et al., (2022) and Subramanian et al., (2022) highlight the strategic benefits of 3PL in enhancing logistics integration and cost efficiency, there is inadequate evidence detailing how such benefits translate within the specific retail environment of superstores operating in semi-urban or infrastructure-constrained regions of Nigeria.

Furthermore, technological enablers such as ERP integration and data-driven logistics coordination have been superficially addressed in existing literature. This technological gap is significant, as ERP systems are central to modern supply chain visibility, planning, and execution especially when working with external logistics partners. Lastly, despite acknowledging the positive influence of 3PL on general organizational performance, the reviewed studies do not provide a quantitative or case-based assessment of these relationships in retail chains. Therefore, this study seeks to fill these gaps by focusing on how third-party logistics activities influence key operational efficiency metrics at Shoprite Ilorin, offering a context-specific and performance-oriented evaluation that is currently missing in the literature.

Methodology:-

This study adopted a descriptive research design within a case study approach, which was considered suitable for capturing detailed and context-specific insights on how third-party logistics (3PL) influences operational efficiency in retail environments. The case study method enabled a holistic examination of events, processes, and outcomes, providing a framework for exploring causal relationships within the operational setting of Shoprite Ilorin.

The study population comprised 200 individuals, including cross-functional team members directly involved in logistics operations at Shoprite Ilorin and its third-party logistics partners. These individuals were drawn from key departments such as logistics and transportation, warehousing, finance, inventory management, customer service, and store operations. A number of customers were also included, given that their experiences serve as a crucial measure of operational performance outcomes such as satisfaction and service efficiency.

To ensure practicality and manage limited resources in terms of time and cost, the study focused exclusively on Shoprite Ilorin. A purposive sampling technique was employed to select respondents with relevant knowledge and experience in logistics and operational processes. From the total population, a final sample size of 163 respondents was selected for participation in the study. This sample included individuals from store and operations management, logistics coordination teams, inventory and warehouse control, finance and procurement units, frontline customer service personnel, and customers. This diversity provided a robust foundation for evaluating how 3PL functions such as warehousing, transportation, inventory management, order processing, and last-mile delivery impact key

indicators of operational efficiency, including lead time, order fulfillment rate, inventory turnover, cost per order, and customer satisfaction.

Table 1: Table Showing the Population and Sample Size

Departments	Target Population (N)	Sample Size
Store and operations management	36	30
Logistics/3PL coordination teams	39	32
Warehouse and inventory control	38	31
Finance and procurement	15	12
Customer service/frontline staff	40	33
Customers	32	25
Total	200	163

Source: Field Survey, 2025

Both primary and secondary data sources were utilized in the study. Primary data were obtained using a structured questionnaire designed to gather direct responses on third-party logistics activities and their perceived effect on operational performance. Secondary data were collected from internal operational reports and vendor performance logs provided by Shoprite's logistics department and third-party logistics providers.

The questionnaire's face validity was ensured through a review by experts in logistics, supply chain management, and research methodology. These professionals assessed the instrument for clarity, relevance, language, and structure. Based on their feedback, necessary revisions were made to refine the instrument. A further review was carried out by a specialist in Tests and Measurement, and all irrelevant items were removed to enhance the instrument's precision and reliability.

Data gathered from the respondents were analyzed using both descriptive and inferential statistical methods with the aid of SPSS Version 29. Descriptive statistics such as frequency distributions, percentages, and standard deviations were used to present the respondents' demographic profiles and patterns in 3PL practices. Inferential statistics, particularly the t-test, were employed to test the study's hypotheses and to determine the significance of the relationships between third-party logistics activities and various indicators of operational efficiency. The analyzed data were presented in tables to aid clarity and interpretation of results.

Findings:-

The results of the study were analyzed and presented in alignment with the stated objectives. Out of one hundred and sixty-three (163) questionnaires distributed, one hundred and sixty-one (161) were returned, although two (2) were found to be incomplete. The questionnaire was structured to reflect the key objectives of the research. To test the hypotheses and assess the impact of third-party logistics activities including supplier relationship management, enterprise resource planning (ERP) optimization, and customer relationship management on supply chain performance, a t-test was employed. This analysis focused specifically on performance indicators such as revenue, cost, and operational efficiency.

Testing of Hypotheses:-

This section describes the procedure used to test the study's hypotheses at a 5% level of significance ($\alpha = 0.05$). A two-tailed t-test was conducted, and the calculated t-values were compared with the critical values obtained from the standard t-distribution table. The null hypothesis (H_0) posited that third-party logistics (3PL) has no significant impact on supply chain performance, while the alternative hypothesis (H_1) suggested a significant impact exists. For the two-tailed test, the critical region was defined using the value of $1-\alpha/2$. The null hypothesis was rejected if the absolute value of the test statistic exceeded the critical t-value ($t_{1-\alpha/2}$) at the relevant degrees of freedom.

Testing of Hypothesis 1:-

H0₁: There is no significant relationship between supplier relationship management and supply chain performance in Shoprite Ilorin.

Table 2: T-Test Showing the Result of Level of Significance between Supplier Relationship management and Revenue

Source of relationship	Df	Computed t	Critical t value	Decision @H0, $\alpha=0.05$	Interpretation
Supplier relationship	298	2.35305	1.968	Reject	Significant
Supply chain performance					

Source: Field Survey, 2025

Based on the results from Table 2, the calculated t-value of 2.35305 exceeds the critical t-value of 2.048 at the 0.05 level of significance. Since the absolute value of the test statistic is greater than the critical value, the null hypothesis is rejected. This indicates a statistically significant relationship between supplier relationship management and supply chain performance at Shoprite Ilorin. The rejection of the null hypothesis suggests that effective supplier relationship management contributes positively to the performance of the supply chain. This implies that stronger collaboration, trust, and coordination with suppliers lead to improved delivery times, inventory control, and operational efficiency. For Shoprite Ilorin, this reinforces the strategic importance of maintaining strong supplier networks and partnerships as a means to enhance competitiveness, responsiveness, and overall supply chain effectiveness.

Testing of Hypothesis 2:-

H0₂: Enterprise resource planning (ERP) optimization has no significant impact on supply chain performance in Shoprite Ilorin.

Table 3: T-Test Showing the Result of Level of Significance between ERP Optimization and Supply Chain Performance

Source of relationship	Df	Computed t	Critical t value	Decision @H0, $\alpha=0.05$	Interpretation
ERP	298	2.54680	1.968	Reject	Significant
Supply chain performance					

Source: Field Survey, 2025

From the results presented in Table 3 above, the computed t-value of 2.54680 exceeds the critical t-value of 2.048 at the 0.05 level of significance. Since the absolute value of the calculated t-statistic is greater than the critical threshold, the null hypothesis is rejected. This confirms that there is a statistically significant relationship between ERP optimization and supply chain performance in Shoprite Ilorin. Rejecting the null hypothesis indicates that ERP optimization plays a vital role in enhancing supply chain performance. This suggests that integrated ERP systems contribute to better coordination, real-time data visibility, accurate inventory tracking, and timely decision-making across logistics functions. For Shoprite Ilorin, it implies that investing in ERP technologies can significantly streamline operations, reduce lead times, improve resource utilization, and support more responsive and cost-efficient supply chain practices.

Testing of Hypothesis 3:-

H0₃: Customer relationship management (CRM) is not significantly associated with supply chain performance in Shoprite Ilorin.

Table 4: T-Test Showing the Result of Level of Significance between Customer Relationship and Economy

Source of relationship	Df	Computed t	Critical t value	Decision @H0, $\alpha=0.05$	Interpretation
Customer Relationship	298	2.6875	1.968	Reject	Significant

Supply chain performance				
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Source: Field Survey, 2025

Based on the result presented in Table 4, the calculated t-value of 2.6875 is greater than the critical t-value of 1.968 at the 0.05 level of significance. Since the absolute value of the test statistic exceeds the critical value, the null hypothesis is rejected. This indicates that there is a statistically significant relationship between customer relationship management and supply chain performance in Shoprite Ilorin. The rejection of the null hypothesis confirms that CRM is a key determinant of supply chain efficiency in the retail sector. Effective CRM strategies facilitate improved communication, feedback collection, and service responsiveness, which collectively contribute to higher customer satisfaction and operational performance. For Shoprite Ilorin, this implies that strengthening CRM practices such as personalized services, timely issue resolution, and real-time customer feedback integration can enhance customer loyalty, optimize demand forecasting, and support a more agile and responsive supply chain system.

Conclusion:-

The findings from this study demonstrate that third-party logistics (3PL) activities particularly supplier relationship management, enterprise resource planning (ERP) optimization, and customer relationship management (CRM) have a significant positive impact on supply chain performance in Shoprite Ilorin. Effective supplier relationship management enhances operational coordination, reduces delays, and supports inventory stability. ERP optimization facilitates seamless integration of supply chain processes, promoting data-driven decision-making and real-time visibility. Additionally, robust CRM practices improve service quality and responsiveness, resulting in greater customer satisfaction and supply chain agility. Overall, the integration of these 3PL components contributes meaningfully to operational efficiency, cost reduction, and enhanced competitiveness in a dynamic retail environment.

Recommendations:-

Based on the findings of the study, the following recommendations are proposed to enhance supply chain performance through effective third-party logistics integration at Shoprite Ilorin:-

- i. Shoprite Ilorin should prioritize building long-term, trust-based relationships with suppliers to improve communication, reliability, and coordination across the supply chain.
- ii. Continued investment in ERP systems is essential for enhancing operational visibility, streamlining logistics workflows, and supporting accurate inventory management and forecasting.
- iii. By leveraging customer data and feedback, Shoprite can further personalize services, improve responsiveness, and strengthen customer loyalty, which in turn boosts supply chain responsiveness and flexibility.
- iv. Shoprite Ilorin should deepen its collaboration with competent 3PL providers to tap into their logistics expertise, thereby improving service delivery, reducing operational risks, and enhancing cost efficiency.
- v. Regular assessment of 3PL activities and staff training should be implemented to ensure that logistics operations remain aligned with evolving market demands and technological advancements.

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