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INVENTORY CONTROL ENABLED BY EPOS AND SUPPLY CHAIN PERFORMANCE OF SUPERMARKETS IN NAIROBI COUNTY, KENYA

Lokho Adan Huka
Masters Student: Jomo Kenyatta University of Agriculture and Technology
lokhoadan@gmail.com

Ismail Noor Shale, PhD
Senior Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya
shalle60@hotmail.com

Abstract

The study examined the effect of inventory control on supply chain performance in supermarkets in Nairobi County, Kenya, emphasizing the role of EPOS systems in improving stock accuracy, preventing stock outs, and enhancing product availability. A descriptive research design was adopted. The target population comprised 440 respondents from 110 distinct supermarkets registered under the Retail Trade Association of Kenya (RETRAK) in Nairobi County. Using Yamane's formula, a sample size of 210 respondents was obtained. Stratified random sampling was used where respondents were first grouped into four strata based on their departments. Thereafter, respondents were selected randomly from each stratum. Data was collected using structured questionnaires containing Likert-scale items, closed-ended, and open-ended questions. A pilot study comprising 10% of the study sample population was conducted n supermarkets located in Nakuru County to assess the suitability of the questionnaire. Quantitative data was analyzed using SPSS Version 26, with descriptive statistics (means, standard deviations) and inferential analysis (correlation and regression). The study established that inventory control significantly influenced supply chain performance. Regression results indicated that inventory control explained 41.2% of the variation in supply chain performance ($R^2 = 0.412$, $p < 0.05$).

Keywords: Inventory Control, Supply Chain Performance, EPOS Systems, Supply Chain Integration, Inventory Accuracy, Order Fulfilment

INTRODUCTION

The retail and wholesale trade sector is a significant contributor to the Kenyan economy, providing employment and facilitating the distribution of consumer goods across diverse markets. According to the Kenya Institute for Public Policy Research and Analysis (KIPPRA), wholesale and retail trade contributed about 7.0 % of Kenya's Gross Domestic Product (GDP) in 2023 and represents one of the largest employment generators in the economy (KIPPRA, 2025). This sector encompasses a mix of formal retail formats, including supermarkets, which play an increasingly important role in ensuring product availability and consumer access to diverse goods. As the retail landscape evolves toward more structured operations, supermarkets have become critical nodes within Kenya's supply chains, linking producers, distributors, and end consumers (KIPPRA, 2025).

In Nairobi County, where urbanization and consumer demand are rapidly expanding, supermarkets face growing pressures to adopt modern technologies and management practices that enhance operational efficiency and supply chain responsiveness. Among these practices, inventory control stands out as a central determinant of supply chain performance. Inventory control refers to the systematic process of maintaining optimal stock levels, ensuring accurate stock records, and monitoring stock movement in real time to minimize stock outs, overstocking, and associated costs. In retail environments characterized by high product variety and transaction volumes, effective inventory control is essential for reducing lead times, preventing lost sales, and improving customer satisfaction (Mkonu & Gichana, 2017). Research on inventory management practices in Kenyan supermarkets has shown that improved stock accuracy and real-time monitoring directly influence product availability and operational efficiency (Kogei & Gachengo, 2024). Technological advancements, particularly Electronic Point of Sale (EPOS) systems, have enhanced the ability of supermarkets to implement robust inventory control mechanisms by providing real-time sales transactions, automated stock updates, and accurate inventory records. EPOS systems support the integration of sales and inventory data across departments, thereby improving coordination between procurement, sales, and logistics functions. This integration facilitates internal supply chain integration, which literature identifies as a critical driver of performance outcomes within retail supply chains (Flynn, Huo, & Zhao, 2010). By enabling timely and accurate information sharing, supermarkets can respond more effectively to demand fluctuations, optimize replenishment decisions, and reduce the incidence of stock discrepancies that disrupt supply chain flow. Empirical evidence further shows that supermarkets with strong inventory control practices achieve higher levels of product availability, customer service, and responsiveness (Mkonu & Gichana, 2017; Kogei & Gachengo, 2024).

Despite the recognized importance of inventory control, many supermarkets in Nairobi continue to face challenges in fully leveraging EPOS technologies to achieve seamless integration of stock data across supply chain functions. These challenges include inconsistent use of real-time inventory data, limited integration with procurement systems, and skill gaps among staff in interpreting and acting on inventory information. As a result, operations may be compromised by stock outs, excess stock carrying costs, and delayed replenishment decisions, undermining supply chain performance (Kitheka, 2012). Building on Supply Chain Integration Theory, which posits that coordinated information sharing and aligned operational processes enhance supply chain outcomes (Flynn et al., 2010), this study investigates the effect of inventory control on supply chain performance in supermarkets in Nairobi County. By focusing specifically on inventory control within the context of EPOS-enabled information systems, the study aims to provide insights into how improved internal integration mechanisms can elevate supply chain efficiency and responsiveness in modern retail operations.

Statement of the Problem

Supermarkets play a critical role in Kenya's urban distribution system by providing organized channels for the supply of food and fast-moving consumer goods to urban populations. The sector contributes significantly to trade and employment within the Kenyan economy. According to KNBS (2024**)**, the wholesale and retail trade sector contributed 7.6% of Kenya's Gross Domestic Product (GDP) and remains one of the leading sectors supporting domestic commerce and employment. Within urban areas such as Nairobi County, supermarkets handle large volumes of consumer goods and perishable products that require efficient inventory management to ensure product availability and smooth supply chain operations.

Despite the importance of supermarkets in Kenya's distribution system, the sector has experienced significant operational challenges in recent years. Industry reports indicate that several supermarket chains have faced financial distress, restructuring, and closure of outlets due to operational inefficiencies and weak internal management systems. For instance, the CAK (2021) retail market inquiry noted that the supermarket sector has experienced instability partly linked to operational inefficiencies in stock management and internal supply chain coordination. Ineffective inventory management can lead to stock-outs, overstocking, product wastage, and increased operational costs, all of which undermine supply chain efficiency and service delivery.

Evidence from policy and sector analyses further suggests that inefficiencies in inventory handling and limited integration of inventory information across operational functions continue to affect the performance of retail distribution networks in Kenya. According to KIPPRA, (2023),

weak inventory coordination within retail supply chains increases operational costs and reduces the efficiency of product distribution systems. Similarly, global food systems assessments indicate that significant quantities of food products are lost during retail and distribution stages due to poor stock handling and inventory control practices **(**UNEP, 2021**).** These challenges highlight the importance of effective inventory management in ensuring efficient supply chain performance within supermarket operations.

Although previous studies have examined supply chain management practices in the retail sector, much of the existing literature focuses broadly on procurement practices, supplier relationships, or information technology adoption. Limited attention has been given to inventory management as a specific operational factor influencing supply chain performance within supermarkets, particularly within the context of Nairobi County. Consequently, there remains insufficient empirical evidence explaining how inventory management practices influence supply chain performance outcomes such as product availability, order fulfillment efficiency, and responsiveness to customer demand in supermarket operations.

This study therefore seeks to examine the effect of inventory management on supply chain performance among supermarkets in Nairobi County, Kenya**,** in order to provide empirical evidence that can inform improved inventory control practices and enhance operational efficiency within the supermarket sector.

Study Objectives

To establish the influence of inventory control enabled by EPOS systems on supply chain performance in supermarkets in Nairobi County.

Study hypothesis

H_o1: There is no significant influence of inventory control enabled by EPOS system on supply chain performance of supermarkets in Nairobi County.

LITERATURE REVIEW

Theoretical Review

Supply Chain Integration Theory, pioneered by Stevens (1989)**,** explains organizational performance as a function of the extent to which internal functions and external partners coordinate activities and share information across the supply chain. The theory emerged from the recognition that fragmented operational processes create inefficiencies in the flow of materials and information within organizations. Supply chain integration therefore emphasizes the alignment of key functions such as procurement, inventory management, distribution, and

sales in order to improve operational efficiency and responsiveness to customer demand (Stevens, 1989). Flynn, Huo, and Zhao (2010) define supply chain integration as the extent to which firms coordinate activities and share information internally and externally in order to manage supply chain processes effectively. Through coordinated planning and information sharing, organizations are able to synchronize inventory levels, procurement decisions, and distribution activities. The performance benefits of supply chain integration have also been highlighted by Frohlich and Westbrook (2001)**,** who argue that firms that achieve higher levels of integration tend to experience improved operational performance because integrated systems enhance visibility of demand information and coordination across the supply chain. Similarly, Christopher (2016) notes that integration improves decision-making by enabling managers to access accurate information on product flows, inventory levels, and customer demand.

However, the theory has also attracted criticism. Fabbe-Costes and Jahre (2008) argue that achieving supply chain integration can be costly and complex because organizations must invest in compatible information systems and restructure internal processes to support coordination.

In supermarket operations, supply chain integration is particularly relevant to inventory control because inventory management depends on the coordination of information between sales systems, procurement units, and warehouse operations**.** Simchi-Levi, Kaminsky, (2008) note that integrated information systems enable firms to synchronize demand data with inventory replenishment decisions, thereby reducing stock-outs and excess inventory. Within supermarkets, where large volumes of fast-moving consumer goods are handled, integrated inventory information from systems such as electronic point-of-sale platforms supports real-time monitoring of stock levels and timely replenishment. Consequently, Supply Chain Integration Theory provides a relevant framework for explaining how inventory control practices influence supply chain performance in supermarkets**,** particularly in improving product availability, order fulfillment efficiency, and responsiveness to customer demand.

Empirical Literature

The relationship between inventory control enabled by electronic point of sale (EPOS) systems and supply chain performance has increasingly attracted scholarly attention in the retail and supermarket sector. EPOS-enabled inventory control is commonly understood in terms of real-time stock monitoring, automated stock updates, barcode scanning, sales data capture, and improved reorder coordination. Empirical evidence generally shows that these capabilities enhance supply chain performance by improving stock accuracy, reducing stockouts, minimizing overstocking, and strengthening replenishment efficiency and customer service

levels (Zimon et al., 2020; Sugut & Ondara, 2023). In retail environments, EPOS systems generate timely transactional data that support decision-making in procurement, inventory planning, and order fulfillment, thereby improving overall supply chain responsiveness and operational efficiency (Ndegwa, 2021). Nevertheless, the magnitude of this relationship differs across settings depending on the scale of retail operations, technology integration, and management practices.

A number of recent studies have examined how inventory management practices influence organizational and supply chain outcomes in retail settings. For instance, Sugut and Ondara (2023) assessed inventory management practices and supply chain management success in Nairobi City County and established that inventory management had a positive and significant effect on supply chain performance. Their findings suggest that effective stock control practices improve product availability, reduce delays, and support better coordination along the supply chain. Similarly, Kogei (2025), in a study on electronic supply chain management practices at Naivas Supermarket in Nairobi City County, found that inventory management practices significantly contributed to retail performance through improved customer fulfilment, reduced wastage, and better stock handling. These findings reinforce the view that technology-supported inventory control is a central driver of supply chain efficiency in supermarkets.

Recent empirical work has also linked EPOS specifically to inventory optimization and operational improvement. Ndegwa (2021) found that electronic point of sale systems positively influenced inventory optimization by enhancing transaction processing speed, stock visibility, and decision-making capability in retail operations. The study emphasized that EPOS-generated data facilitate more accurate demand tracking and timely replenishment decisions, which are essential elements of supply chain performance. Likewise, Zimon et al. (2020) observed that modern inventory and supply management systems contribute to improved asset utilization, customer fulfillment, and process efficiency. Although their study was not limited to supermarkets in Nairobi County, it provides useful empirical support for the argument that digital inventory control systems strengthen supply chain outcomes by increasing flexibility and reducing inefficiencies in stock management.

Other recent studies from the retail sector further support the importance of technology-enabled inventory control. Kowang et al. (2026) established that inventory management practices were significantly associated with business performance in convenience stores, with stock coordination and supplier management emerging as critical predictors. In the Kenyan context, research on vendor-managed inventory and inventory control strategies also points to positive performance outcomes where inventory visibility and stock coordination are improved (Sugut & Ondara, 2023; Kogei, 2025). These studies collectively suggest that inventory control

systems supported by digital tools such as EPOS can strengthen supply chain performance through improved inventory accuracy, reduced lead time, and enhanced product availability. However, many of these studies discuss inventory management broadly and do not isolate EPOS-enabled inventory control as a distinct explanatory variable.

Despite the growing body of evidence, several empirical gaps remain. First, many studies focus on general inventory management practices without specifically examining the role of **EPOS-**enabled inventory control, yet EPOS is distinct because it supports automatic, real-time capture and transmission of inventory data across retail operations (Ndegwa, 2021; Kogei, 2025). Second, several studies measure performance using broad business or organizational indicators, while giving limited attention to specific dimensions of supply chain performance such as order fulfilment, stock availability, inventory turnover, lead-time reduction, and responsiveness (Sugut & Ondara, 2023). Third, some of the available studies are either based outside Nairobi County or concentrate on a single supermarket chain, which limits contextual generalization to the wider supermarket sector in Nairobi. Fourth, although recent evidence confirms the contribution of digital inventory systems to performance, many studies do not sufficiently explain the operational pathways through which EPOS-enabled inventory control affects supply chain outcomes, especially in a rapidly changing supermarket environment characterized by demand fluctuations, multiple outlets, and high stock-keeping unit volumes.

This study seeks to address these gaps by examining the effect of inventory control enabled by EPOS systems on the supply chain performance of supermarkets in Nairobi County. By focusing specifically on EPOS-enabled inventory control, the study narrows attention to an important technological capability that supports stock visibility, timely replenishment, and operational coordination. In addition, by measuring supply chain performance using relevant supermarket-oriented indicators, the study provides context-specific evidence on how inventory control technologies shape retail supply chain efficiency and service delivery in Nairobi County. The study therefore contributes to both theory and practice by clarifying how EPOS-supported inventory control can be leveraged to improve supply chain outcomes in the supermarket sector.

Conceptual Framework

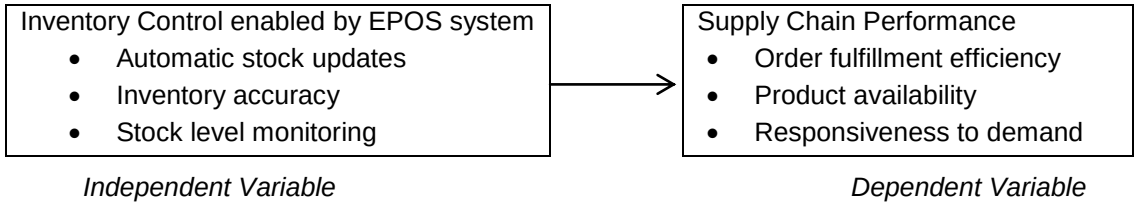

Figure 1: Conceptual Framework

Inventory control represents a key operational mechanism through which Electronic Point of Sale (EPOS) systems influence supply chain performance in supermarkets. Inventory control refers to the systematic process of managing stock levels, maintaining accurate inventory records, and ensuring timely replenishment of products in order to meet customer demand efficiently while minimizing operational costs (Christopher, 2016). In retail environments such as supermarkets, where large volumes of fast-moving consumer goods are handled daily, effective inventory control systems are essential for coordinating product flows and maintaining continuous product availability across the supply chain (Heizer et al., 2017). The adoption of EPOS systems has significantly transformed inventory control practices by enabling the automatic capture of sales transactions and real-time updating of inventory records. Through automated recording of transactions at the point of sale, inventory information is instantly updated whenever a product is sold, allowing organizations to maintain accurate and up-to-date stock records. This real-time visibility of inventory information improves the ability of managers to monitor product movement and make timely replenishment decisions, thereby reducing the likelihood of stock-outs and excess inventory (Ndegwa, 2021). Accurate and continuously updated inventory data also improves coordination between sales operations, procurement units, and warehouse functions, which is critical for effective supply chain planning and execution (Jacobs & Chase, 2018). In addition, accurate inventory records enhance the reliability of demand information used in procurement and distribution decisions. When inventory data accurately reflects the actual physical stock available within the supermarket, managers are better able to forecast product demand and coordinate supply chain activities accordingly. Reliable inventory information therefore supports better decision-making in procurement, ordering, and stock replenishment processes, which ultimately contributes to improved operational efficiency and reduced inventory-related losses (Silver et al., 2017).

Continuous monitoring of stock levels further strengthens the ability of supermarkets to respond effectively to fluctuations in customer demand. EPOS systems generate real-time inventory reports that enable managers to track stock levels across product categories and identify items that are approaching reorder thresholds. This monitoring capability allows supermarkets to initiate replenishment processes in a timely manner, ensuring that products remain available to customers while minimizing the costs associated with excess inventory holdings (Stadtler et al., 2015). Effective monitoring of inventory levels also enhances supply chain responsiveness by enabling supermarkets to adjust inventory positions quickly when demand patterns change (Wisner et al., 2014).

Within supermarket supply chains, inventory control plays a particularly important role because retail operations depend on the efficient management of high-volume product flows

and rapid customer transactions. By integrating sales data with inventory management systems, EPOS technology improves visibility of product demand and stock movements across the organization. This integration strengthens coordination between operational units and enhances the overall efficiency of supply chain processes, including procurement planning, stock replenishment, and distribution activities (Hugos, 2018).

RESEARCH METHODOLOGY

The study adopted a descriptive research design, which was suitable for collecting detailed information on inventory control enabled by epos system influences supply chain performance in supermarkets in Nairobi County (Hancock et al., 2021). The target population comprised 440 staff from the 110 supermarket registered by RETRAK including operations officers, procurement/supplies officers, ICT officers and Finance Officer. Since the respondents belonged to distinct functional categories, the study used stratified random sampling. The respondents were first grouped into four strata based on their departments. Thereafter, respondents were selected randomly from each stratum. Stratified random sampling was appropriate for this study because it ensured that all the key departments relevant to EPOS implementation and supply chain performance were represented in the sample. This improves the representativeness and reliability of the findings. Using Yamane's formula at a 5% margin of error, a sample size of 210 respondents was obtained. Data was collected using a structured questionnaire designed around the study objectives. The questionnaire contained close-ended items measured on a Likert scale to allow respondents to indicate the extent to which they agreed or disagreed with statements relating to EPOS-enabled inventory control and supply chain performance. The instrument was divided into sections covering respondent background information, inventory control practices enabled by EPOS systems, and indicators of supply chain performance.

A pilot study comprising 10% of the study sample population was conducted to assess the suitability of the questionnaire for the study (Mugenda & Mugenda, 2014). The pilot respondents were drawn from registered supermarkets located in Nakuru County that shared similar operational characteristics with the study population but did not have operations in Nairobi County. This was necessary to avoid contaminating the actual study sample while still obtaining relevant feedback on the instrument. The purpose of the pilot study was to identify ambiguous or unclear questions, assess the sequence and flow of the questionnaire items, and determine the reliability of the instrument. Internal consistency of the questionnaire items was tested using Cronbach's alpha coefficient, where a reliability coefficient of 0.7 or above was considered acceptable for the study (Cronbach, 1951; Nunnally & Bernstein, 1994). The results

indicated that inventory control recorded a Cronbach's alpha value of 0.842, while supply chain performance recorded 0.816, thus meeting the recommended threshold of 0.7 and confirming that the instrument was reliable for the study.

After data collection, the completed questionnaires were checked for completeness, coded, and entered into Statistical Package for Social Sciences (SPSS) for analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data and describe the study variables. The analyzed results were presented through tables and charts for ease of interpretation. To establish the relationship between the variables, the study further applied inferential statistics. Pearson correlation analysis was used to determine the direction and strength of the relationship between inventory control enabled by EPOS systems and supply chain performance. In addition, simple regression analysis was employed to assess the extent to which inventory control enabled by EPOS systems predicts supply chain performance among supermarkets in Nairobi County. The findings from the analysis were then interpreted in line with the study objectives.

RESULTS AND DISCUSSION

Pilot Test Result

Reliability of the research instrument was assessed using Cronbach's alpha coefficient to determine the internal consistency of the measurement items. The pilot test was conducted using a sample drawn from a population similar to the study respondents, and the results were analyzed to establish the reliability of each construct. According to

A Cronbach's alpha value of 0.70 and above is considered acceptable for social science research (Cronbach, 1951). The results of the reliability analysis are presented in Table 1

Table 1: Summary of Cronbach Alpha Coefficient

Variable	Number of Items	Cronbach's Alpha	Remarks
Inventory Control	6	0.842	Reliable
Supply Chain Performance	6	0.816	Reliable
Overall Reliability	12	0.829	Reliable

The results indicate that all constructs achieved Cronbach's alpha values above the recommended threshold of 0.70, confirming that the instrument was reliable. Inventory control recorded an alpha coefficient of 0.842, while supply chain performance recorded 0.816, indicating good internal consistency among the items used to measure the variables. The

overall reliability coefficient of 0.829 further demonstrates that the instrument was suitable for data collection and subsequent analysis.

Response Rate

A total of 440 questionnaires were distributed to respondents from 110 registered supermarkets in Nairobi County, with 4 respondents per supermarket (Procurement & Stores Officer, Operations Officer, and ICT Officer). Out of these, 378 questionnaires were completed and returned, representing a response rate of 85.9%. The remaining 62 questionnaires were not returned, representing 14.1%. The response rate was considered adequate for analysis and generalization of the study's findings, as supported by Baruch and Holtom (2008), who suggest that a response rate above 50% is acceptable in social sciences research.

Table 2: Response Rate

Item	Frequency	Percentage
Distributed questionnaires	440	100
Completed and returned questionnaires	378	85.9
Unreturned questionnaires	62	14.1

Descriptive Analysis: Inventory Control

Respondents were asked to rate statements on inventory control facilitated by the EPOS system using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The focus was on three indicators: Automatic Stock Updates, Inventory Accuracy, and Stock Level Monitoring.

Table 3: Descriptive Results for Inventory Control

Statements	**N**	**Mean**	**Standard Deviation**
The EPOS system automatically updates inventory levels after each sale.	378	4.31	0.712
The EPOS system supports timely stock replenishment.	378	4.22	0.734
Barcode scanning through the EPOS system improves inventory accuracy.	378	4.28	0.698
The EPOS system helps reduce inventory discrepancies.	378	4.19	0.755
The EPOS system helps managers monitor stock levels effectively.	378	4.25	0.721
The EPOS system assists in preventing stock outs and overstocking.	378	4.20	0.739
Average Score		**4.24**	**0.727**

The results indicate that supermarkets in Nairobi County strongly agree that EPOS systems facilitate real-time inventory updates, improved accuracy, and effective stock monitoring. For instance, the statement regarding automatic updates after each sale registered a mean of 4.31 with a standard deviation of 0.712, highlighting strong consensus among respondents. The findings are consistent with recent research by Muturi and Wanjiru (2022), who demonstrated that EPOS-enabled inventory systems enhance operational efficiency and reduce stock discrepancies in Kenyan retail supermarkets. Open-ended responses further revealed that managers consider EPOS systems critical for timely decision-making, procurement planning, and avoiding both stockouts and overstocking, supporting similar findings by Njoroge et al. (2021), who emphasized the link between digital inventory systems and proactive stock management.

Descriptive Analysis: Supply Chain Performance

The study also examined the influence of inventory control via EPOS on supply chain performance, measured through Order Fulfillment Efficiency, Product Availability, and Responsiveness to Demand. Respondents rated the extent to which EPOS-enabled inventory control influenced these performance indicators.

Table 4: Descriptive Results for Supply Chain Performance

Statements	N	Mean	Standard Deviation
Customer orders are fulfilled efficiently in the supermarket.	378	4.18	0.743
The supermarket processes customer purchases quickly.	378	4.12	0.769
Products are usually available when customers need them.	378	4.25	0.701
Stock availability has improved in recent years.	378	4.19	0.734
The supermarket responds quickly to changes in customer demand.	378	4.21	0.722
The supermarket adjusts inventory levels quickly when demand changes.	378	4.16	0.738
Average Score		**4.18**	**0.734**

The descriptive statistics show that respondents generally agree that inventory control through EPOS contributes positively to supply chain performance. The highest mean of 4.25 was recorded for product availability, suggesting that real-time inventory management has enhanced stock accessibility for customers. These results align with recent studies by Kamau and Oduor (2022), who found that digital inventory systems improve customer satisfaction and supply chain responsiveness in Kenyan supermarkets. Open-ended responses indicated that

EPOS systems enable faster order processing, better stock forecasting, and more responsive replenishment, which are key to improving operational performance and reducing lost sales due to stock outs.

Correlation Analysis

Pearson's correlation was used to assess the strength and direction of the relationship between inventory control (independent variable) and supply chain performance (dependent variable).

Table 5: Pearson Correlation between Inventory Control and Supply Chain Performance

Variable	Inventory Control	Supply Chain Performance
Inventory Control	1	0.642**
Supply Chain Performance	0.642**	1
N	378	378

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

The results indicate a strong positive correlation ($r = 0.642$, $p < 0.01$) between inventory control and supply chain performance, suggesting that improvements in EPOS-enabled inventory management are associated with enhanced operational outcomes in Nairobi supermarkets. These findings are consistent with Wanjiru and Mwangi (2021), who emphasized the critical role of digital inventory systems in enhancing responsiveness and efficiency in retail supply chains.

Regression Analysis

A simple linear regression was conducted to determine the predictive effect of inventory control on supply chain performance.

Table 6: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.642	0.412	0.410	2.573

The coefficient of determination ($R^2 = 0.412$) implies that 41.2% of the variation in supply chain performance can be explained by inventory control practices enabled by EPOS systems.

Table 7: Regression Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	8.741	1.113		7.852	0.000
Inventory Control	0.623	0.061	0.642	10.213	0.000

The regression equation is: **$Y = 8.741 + 0.623X + \varepsilon$**

This suggests that a unit increase in inventory control leads to a 0.623 unit increase in supply chain performance, holding other factors constant. The model is statistically significant ($p < 0.05$), indicating a reliable predictive relationship.

Discussion

The findings indicate that EPOS-enabled inventory control significantly improves supply chain performance in Nairobi supermarkets. Real-time stock updates, enhanced inventory accuracy, and effective monitoring were identified as critical mechanisms through which performance outcomes are enhanced. Strong correlations and significant regression results confirm that systematic inventory management contributes to order fulfillment efficiency, product availability, and responsiveness to customer demand. These results resonate with current research by Kamau and Oduor (2022) and Muturi and Wanjiru (2022), which highlight the transformative role of digital inventory systems in enhancing operational efficiency, reducing stock discrepancies, and improving responsiveness in retail supply chains. Open-ended feedback also emphasizes that timely decision-making and proactive stock management are central to sustaining high performance in competitive supermarket environments.

CONCLUSION AND RECOMMENDATIONS

The study established that inventory control enabled by EPOS systems has a positive and significant effect on the supply chain performance of supermarkets in Nairobi County. Both descriptive and inferential analyses indicate that accurate, automated, and monitored inventory practices improve order fulfillment, product availability, and responsiveness to demand.

The study recommends that supermarkets in Nairobi County prioritize investments in advanced EPOS systems that seamlessly integrate inventory, sales, and procurement data, thereby enabling real-time stock visibility and improving overall supply chain coordination. To maximize the benefits of such systems, targeted training programs should be implemented for

staff involved in inventory management, ensuring that personnel are proficient in utilizing EPOS functionalities for accurate reporting and proactive stock replenishment. Additionally, management should establish continuous monitoring and auditing mechanisms to maintain the reliability of inventory data and minimize discrepancies, which can undermine operational efficiency and customer satisfaction. Furthermore, supermarkets are encouraged to adopt predictive analytics and demand forecasting tools integrated with EPOS systems to anticipate shifts in consumer demand, allowing for more responsive inventory planning and reducing the risk of stockouts or overstocking. Collectively, these strategies contribute to a robust inventory control framework that strengthens supply chain performance, enhances operational efficiency, and supports timely delivery of products to meet dynamic market needs.

AREAS FOR FURTHER RESEARCH

This study focused on supermarkets in Nairobi County. Future research could examine other retail sectors, such as wholesale and e-commerce, or regional comparisons across Kenya, to explore variations in EPOS adoption and supply chain performance. Additionally, investigating the cost-benefit analysis of EPOS investments and their impact on profitability could provide further managerial insights.

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