EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON ORGANIZATIONAL PERFORMANCE IN HOSPITALS IN KISII COUNTY, KENYA

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DECLARATION AND APPROVAL

DECLARATION AND APPROVAL

Student Declaration

This thesis/project is my original work and has never been presented for any academic award in any institution.

Signature..... Date.....7/11/2024.....

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Approval by the supervisor

This thesis/project is being submitted for examination with our approval as University supervisor.

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DEDICATION

I dedicate this project to my beloved husband, Mr. Joshua Amisi, and my cherished children, Khloe, Noela, and Nolan. May God bless you all abundantly.

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I am sincerely grateful to Almighty God for providing me with strength, protection, and good health throughout my studies. My heartfelt thanks go to my research supervisor, Dr. Robert Omundi Obuba, for his invaluable critiques, insights, guidance, and unwavering support, which were crucial to the completion of this study. I also wish to acknowledge the entire teaching and non-teaching staff at Mount Kenya University for fostering a supportive learning environment. Finally, I am deeply thankful to my family for their prayers, encouragement,
and both moral and financial support.

ABSTRACT

Effective inventory management is essential for enhancing operational efficiency and financial success across industries. Strategic inventory practices directly impact an organization's profitability, customer satisfaction, and overall performance. In this context, the present study aimed to examine the critical role of inventory management practices on the performance of Kisii County Hospital. The specific objectives focused on evaluating the influence of inventory reduction, inventory tracking, accuracy of inventory records, and supplier collaboration on the hospital's performance. This research is expected to guide hospital management in adopting effective inventory strategies to boost productivity. The study was grounded in the theories of strategic choice, economic order quantity, and transaction cost. Employing a survey design to gather quantitative data, it targeted department employees involved directly or indirectly in inventory management, including those in purchasing, warehousing, auditing, and hospital committees—totaling 832 respondents. Yamane's formula was applied to determine the sample size, ensuring proportional representation across departments. Data were collected through questionnaires, with a pilot study conducted in Nyamira County hospitals, which have similar characteristics to Kisii County, to enhance the study's reliability and validity. Reliability testing indicated a Cronbach's alpha of 0.7 or above for all variables, confirming internal consistency, while construct validity was established with factor loadings of 0.5 or higher. The data were then coded and analyzed using SPSS, applying descriptive statistics, standard deviation, and linear regression analysis. Findings revealed that inventory shrinkage, inventory tracking, and record accuracy negatively predicted organizational performance in Kisii County Hospital, while collaboration with suppliers had a positive impact. The study concluded that inventory management practices significantly influenced hospital performance. It recommended that medical practitioners and hospital management invest in advanced inventory software for real-time tracking, low-stock alerts, and automated replenishment processes to enhance inventory control.

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ABBREVIATION AND ACRONYMS

ANOVA	Analysis of Variance
ERP	Enterprise Resource Planning
EOQ	Economic Order Quantity
JIT	Just-In-Time
KPI	Key Performance Indicators
Kshs	Kenya Shillings

NRFA	National Resource and Financial Agency
NGOs	Non-Governmental Organizations
RFID	Radio Frequency Identification
SMEs	Small and Medium-sized Enterprises
SCT	Strategic Choice Theory
SC	supply chain
SCM	supply chain management
TCA	Transactional Cost Approach
VMI	Vendor Managed Inventory

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter includes the following sections: Introduction, Background of the Study, Problem Statement, Purpose of the Study, Study Objectives, Research Questions, Significance of the Study, Scope of the Study, Study Limitations, Study Delimitations, Study Assumptions, and Operational Definitions of Key Terms.

1.1 Background to the study

Inventory management is a vital operational function that involves the systematic planning, control, and optimization of a company's stock of goods and materials (Of & Devis, 2024). Its primary importance lies in maintaining a balance between supply and demand, ensuring goods are available when needed while keeping holding costs low. Effective inventory management applies strategies like Just-In-Time (JIT) and Economic Order Quantity (EOQ) to optimize stock levels and enhance overall efficiency (Paul et al., 2023). With strong inventory practices, businesses can streamline production, reduce transportation costs, prevent stock-related issues, and ultimately improve customer satisfaction and profitability (Shukaili, Jamaluddin & Zulkifli, 2023).

Proper inventory control, often referred to as stock management, is essential for effective materials management (Vrat, 2014). In materials management, inventory frequently emerges as a crucial component. Broadly defined, inventory is the collection of items held to meet anticipated demand (Vrat, 2014). From a materials management perspective, however, inventory represents economically valuable resources held in reserve with potential for future use. Vrat (2014) notes that setting aside a specific stock level helps proactively address demand, thereby avoiding disruptions caused by shortages.

Khalid and Lim (2018) propose that effective inventory management is a key organizational function, essential for shaping policies aimed at achieving optimal inventory investment, which ultimately enhances liquidity and mitigates risk. Similarly, Chambers and Lacey (2011) emphasize that the goal of inventory management is to balance the benefits of holding inventory against the associated costs. Thus, according to Chambers and Lacey, the inventory management process is designed to maximize the advantages of inventory while minimizing the expenses involved.

Both academic and industry circles have shown strong interest in inventory management (Fosu, 2016). Inventory turnover, in particular, plays a critical role in driving company revenue and profits (Prempeh, 2016). With firms allocating over half of their investments to current assets, including a significant portion to inventory, maintaining the timely availability of the right inventory levels is paramount. Effective inventory management is crucial for maximizing capital productivity, as inventories represent idle resources for companies (Mensah, 2016).

1.1.1 Global Perspective of Inventory Management

Inventory management practices encompass the supervision and regulation of the procurement, storage, and utilization of items associated with an organization's production processes, either directly or indirectly (Lakshmi & Ranganath, 2016). Additionally, it involves coordinating all activities aimed at ensuring the timely acquisition of inventory in the correct quantities (Ondari & Gekara, 2013). The choice of an inventory management system directly or indirectly impacts a company's profits (Bah *et. al.*, 2016).

Effective inventory management extends across finance, procurement, and sales; thus, the synchronization of these three areas is crucial for its success (Balcik, Bozkir & Kundakciglu, 2016). Inventories constitute all the goods a company holds to facilitate its

production processes (Pandey, 2017). Inadequate inventory management can hinder a company from achieving its targeted profits and lead to customer dissatisfaction (Muller, 2019). The primary objectives of inventory management include providing the necessary inventories to support various operations at minimal costs (Gallino, Moreno & Stamatopoulos, 2017).

To enhance firm performance through accelerated inventory management, strategic decisions are being made to guide competitiveness and productivity (Haji, Khair, Kalash, Sabsabi, 2018). Empirical studies globally have yielded diverse findings on inventory management. For instance, Prempeh (2016) revealed a significant positive correlation between inventory management and profitability. Consistent with previous research (Luwumba, 2013; Appiah, 2014; Mwangi, 2016), evidence supports a direct relationship between inventory management and profitability. On the flip side,

Shanmugam *et al.*, (2016) conducted research indicating an inverse correlation. Nevertheless, a common oversight in these studies is the failure to recognize the impact of inventory management on the operational cash flows of businesses.

A prior investigation conducted by Eroglu and Hofer (2011) proposed a positive association between inventory management and performance. Their research focused on US manufacturing firms during the period of 2003-2008, revealing that a lean approach has a favorable impact on profit margins. Eroglu and Hofer (2011) asserted that companies leaner than the industry average generally experiences positive returns associated with leanness. The empirical leanness indicator served as their measure for inventory management. In contrast to our current study, their research concentrated on evaluating the correlation between inventory performance and overall firm performance. Criticism directed at this theory suggests its applicability only in situations involving

close, long-term collaboration and information sharing between a firm and its trading partners.

In the healthcare sector, Alshahrani et al. (2018) described the supply chain (SC) as the coordinated movement of various goods, involving multiple stakeholders to ensure that supplies meet both quality and quantity standards required by suppliers (Mathur et al., 2018). Effective supply chain management (SCM) in healthcare supports institutions in boosting productivity, enhancing quality, reducing operational time, lowering costs, and improving overall performance (Elmuti et al., 2013). Nonetheless, healthcare organizations must strive for operational efficiency through practical approaches that reduce costs without compromising patient safety (Uthayakumar & Priyan, 2013).

Inventory management in the healthcare system is complex due to its connection with multiple factors (Saha & Ray, 2019). Key influences on healthcare inventory management include demand and supply dynamics, the specific characteristics and classification of inventory items, storage facility organization, distribution system attributes, replenishment policies, service level growth, patient medical conditions, physicians' prescribing practices, the critical importance of certain inventory items, and the interrelationships among stakeholders (Saha & Ray, 2019).

Atnafu and Balda's (2018) research empirically examined how inventory management practices impact firm competitiveness and organizational performance. The study collected data from 188 micro and small enterprises within the manufacturing subsector. Results indicated that stronger inventory management practices are positively associated with enhanced competitive advantage and organizational effectiveness.

Furthermore, the study showed that competitive advantage significantly influences organizational effectiveness. Recommendations highlighted the need for policymakers, universities, NGOs, and other stakeholders to provide training and resources that foster

inventory management practices, aiming to improve organizational output. Notably, while this study focused on small enterprises in Ethiopia's manufacturing sector, there is a substantial gap in literature regarding inventory management's impact in the health sector, specifically in Kisii County. This proposed study seeks to address this gap.

1.1.2 Regional Perspective of Inventory Management

A study by Nuwagaba (2024) conducted in Uganda on inventory management and organizational performance in manufacturing firms in Mbarara City found that inventory management and employee competence account for 49.3% of the variations in organizational performance. This suggests that the remaining 50.7% is influenced by other factors not examined in this research. The study recommends that manufacturing firms focus on effectively managing different stock items, acknowledging that each item's role in production varies. Such a strategic approach can help control inventory costs, allocate limited resources effectively, and positively impact overall performance.

Similarly, a study by Haruna and Salome (2019) in Tanzania examined inventory management's impact on organizational performance in public sectors, focusing on the National Food Reserve Agency (NFRA). The study found that 72.5% of participants agreed that the Economic Order Quantity Model is integral to the NFRA's material acquisition decisions. Additionally, 90% of respondents recognized the agency’s use of technology in inventory management and control, while 50% agreed that NFRA employs qualified inventory management staff, indicating a high skill level among stores personnel. Furthermore, 95% of participants acknowledged significant challenges in managing inventories within the organization.

A study by Muchaendepi, Mbohwa, Hamandishe, and Kanyepe (2019) examined sustainable manufacturing practices in the context of global circular economy inventory management and the performance of small and medium-sized enterprises (SMEs) in

Harare's manufacturing sector. The findings indicated that most SMEs primarily utilize the Just-In-Time (JIT) inventory management method. However, the research highlighted a significant lack of awareness and adoption of alternative computerized systems and methods among these SMEs. This dependence on JIT creates challenges within the supply chain, as it requires ongoing communication with suppliers to ensure timely material delivery. Furthermore, the lack of computerized communication tools forces SMEs to order supplies only as needed, which can result in delays in fulfilling customer orders.

1.1.3 Local Perspective of Inventory Management

A study conducted in Kenya by Naliaka and Namusonge (2015) found that inventory management significantly influences the competitive advantage of manufacturing firms. The research also indicated that a company's competitive edge is closely linked to the quality and timely fulfillment of customer orders. Competitive advantage arises from essential management decisions and involves the unique capabilities that set an organization apart from its competitors (Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006). Although inventory investment represents a substantial portion of the budget for small businesses, inventory control is often overlooked in their management practices. Many small businesses face the problem of having excessive cash locked in inventory due to ineffective management, resulting in extended inventory accumulation. Poor inventory management directly affects a companies cash flow.

The significance of inventory management cannot be underestimated for organizations striving to improve performance and achieve high customer satisfaction. Nzuza (2015) highlighted that the materials owned by an organization constitute a considerable part of its assets, making effective material management essential for efficient stock management. An inadequately executed inventory management system can negatively

impact an organization's profitability and overall performance. Effective management of materials is crucial for assessing both material performance and the organization's performance as a whole.

In a case study of the Gianchore tea factory, Mogere, Oloko, and Okibo (2013) examined the influence of inventory control systems on operational performance within the tea industry. Through the use of a structured questionnaire and regression analysis, the study revealed that material requirement planning, distribution planning, and vendor-managed inventory positively impacted operational efficiency and, in turn, enhanced organizational performance.

Similarly, Lwiki, Ojera, Mugenda, and Wachira (2013) investigated the effects of inventory management practices on the financial performance of sugar manufacturing firms. By analyzing both primary and secondary data, the correlation analysis indicated a positive relationship between inventory management and both return on sales and return on equity for these companies.

Mwangi and Nyambura (2015) focused on the impact of inventory management on the performance of food processing firms. Utilizing a descriptive research design and multiple regression analysis, their research highlighted critical components of inventory management, such as production maintenance, cost control, record reduction of losses, and continuous supply, which significantly contribute to the performance of food processing companies.

Wangari and Kagiri (2015) studied the effects of inventory management practices on the competitiveness of Safaricom Kenya Ltd. Data were collected using drop-and-pick questionnaires. The regression analysis results indicated that inventory investment,

shrinkage, and turnover were significant predictors of competitiveness for Safaricom Ltd., thereby influencing the overall competitiveness of the organization.

In another study, Ngei and Kihara (2017) aimed to understand how inventory management systems affect the performance of gas manufacturing firms in Nairobi City County. Utilizing both primary and secondary data, the study employed multiple regressions for analysis. The findings demonstrated that Vendor Managed Inventory (VMI), Enterprise Resource Planning (ERP), Radio Frequency Identification (RFID), and e-procurement were significant predictors of performance for gas firms.

Mukopi and Iravo (2015) examined the impact of inventory management on performance within the sugar industry. Their study included 30 procurement professionals selected from a target population of 100 personnel working in sugar companies in Western Kenya. Using ANOVA, the research identified significant relationships between strategic supplier partnerships, learning inventory systems, legal policies, information technology, and inventory management, all of which affect firm performance.

Similarly, Kimaiyo and Onchiri (2014) explored the importance of inventory management at Kenya Cooperative Creameries by surveying 83 participants from a population of 500. Their descriptive research design demonstrated that effective inventory management, particularly regarding stock retention and the management of ordering costs, was vital for improving overall firm performance. Although the study highlighted the significance of inventory control in supply chain management across various sectors in Kenya, it also pointed out a notable absence of literature addressing its direct effects on the performance of textile firms in the country. To address this research gap, the study proposed the following hypothesis.

1.2 Statement of the Problem

Efficient management of inventory within healthcare supply chains constitutes a crucial element contributing to overall success, as highlighted by Santhi and Karthikeyan in their 2016 study. Inventory management stands as a key determinant of an organization's ability to meet customer demand while optimizing costs and minimizing wastage (De Vries & Huijsman, 2011). It represents a complex interplay between supply chain management, production planning, and sales forecasting, all of which are crucial elements in the smooth functioning of any business (Mathur *et al*., 2018).

According to the Health Products and Technology Unit (HPTU) they undertake stocktaking and proper forecasting of health products and supplies. Nevertheless, the peripheral facilities lack proper system of inventory taking and monitoring available stock. This has resulted in stock-outs of essential pharmaceuticals and non-pharmaceuticals in majority of the facilities especially in level 4 and level 5 health facilities.

The lack of a comprehensive and integrated inventory management system within these healthcare institutions contribute to a range of issues, including stock-outs, overstocking, increased operational costs, compromised patient care, and a reduction in the overall operational efficiency and effectiveness of healthcare services. This consequently affects the performance of these healthcare institutions.

According to the Sub-County Medical Officers, lack of essential pharmaceuticals and non- pharmaceuticals affects service delivery and facility targets. Despite the pivotal role of efficient inventory management in ensuring the availability of essential medical supplies and equipment, the prevailing organizational practices within public hospitals, the management of inventory within public hospitals especially level 4, level 3 and level 2 facilities, have emerged as a critical challenge, potentially influencing the overall

organizational performance and healthcare service delivery (Office of the Auditor General, 2012).

Equally, the absence of standardized inventory management protocols and the limited utilization of technology-driven solutions may be further exacerbating the challenges faced by these hospitals, hindering their ability to achieve optimal performance and meet the healthcare needs of the local population. Consequently, there is a pressing need for a thorough investigation into the current state of inventory management practices within public hospitals in Kisii County to identify the root causes of inefficiencies and to propose viable solutions that can enhance organizational performance and ensure the delivery of quality healthcare services to the community. Taking this viewpoint into consideration, the research aimed to determine the effects of inventory management practices impact the overall performance of hospitals in Kisii
County in Kenya.

1.3 Purpose of the Study

The purpose of the study was to evaluate the effects of inventory management practices on organizational performance in Hospitals in Kisii County, Kenya.

1.4 Objectives of the Study

1.4.1 Purpose of the study

The purpose of the study was to evaluate the effects of inventory management practices on organizational performance in hospitals in Kisii County, Kenya.

1.4.2 Specific Objectives

i. To determine the effect of inventory shrinkage on organizational performance of Hospitals in Kisii County. ii. To measure the impact of inventory tracking on organizational performance of

Hospitals in Kisii County.

iii. To evaluate the influence of inventory records accuracy on organizational performance of Hospitals in Kisii County. iv. To investigate the contribution of supplier collaboration on organizational performance of Hospitals in Kisii County.

1.5 Research Questions

i. What is the effect of inventory shrinkage on organizational performance of Hospitals in Kisii County? ii. What is the effect of inventory records accuracy on organizational performance of Hospitals in Kisii County? iii. What is the effect of inventory investment on organizational performance of

Hospitals in Kisii County? iv. What is the effect of inventory turnover on organizational performance of

Hospitals in Kisii County?

1.6 Significance of the Study

The findings of this research are significant for hospital management, as efficient inventory management is essential for maintaining the financial health of an organization. This can be achieved by reducing carrying costs, avoiding stock-outs, and optimizing working capital. As a result, these insights can inform the formulation of sound institutional policies for effective inventory management, leading to better resource allocation and improved organizational performance.

Informed recommendations from the study findings will also be crucial for customer satisfaction. Timely order fulfillment, accurate delivery, and reliable product availability are vital for ensuring customer satisfaction. Effective inventory management enhances customer service levels, which fosters loyalty and a positive brand image, ultimately driving increased sales and market share.

A robust inventory management system streamlines supply chain operations, reducing disruptions and improving overall efficiency within the supply chain network. This results in stronger supplier relationships, shorter lead times, and more efficient production processes, thereby enhancing operational performance.

Effective inventory management practices help mitigate risks related to inventory obsolescence, stock-outs, and overstocking, thereby minimizing the chances of operational disruptions and financial losses. By proactively managing inventory levels, organizations can better respond to market fluctuations and unexpected demand changes.

By implementing effective inventory management strategies, organizations can gain a competitive advantage in the marketplace. This enables businesses to swiftly adapt to changing market demands, efficiently launch new products, and offer competitive pricing, thereby strengthening their market position and ensuring long-term growth and profitability.

1.7 Scope of Study

The primary objective of this study was to examine the impact of corporate governance strategies on the financial performance of commercial banks in Kenya. To achieve this objective, the researcher identified five relevant parameters: Time Frame, Sample Population, Geographical Location, Content, and Theoretical Review. A data collection, analysis, interpretation, and presentation period of four months was established. The researcher purposively selected 163 health facilities within the county, from which 270 respondents were drawn.

The research was conducted in Kisii County across all chosen health facilities, which included Level 2, Level 3, Level 4, and Level 5 facilities. The scope of the content comprised four independent variables—inventory shrinkage, inventory tracking,

inventory accuracy, and supplier collaboration—and one dependent variable, organizational performance.

The study was framed by three theoretical perspectives: strategic choice theory, Wilson's Economic Order Quantity (EOQ) model, and transaction cost analysis theory, which informed the study's variables. Utilizing a survey design, the study aimed to assess the effects of inventory management practices on the performance of hospitals in Kisii County, Kenya. The research was conducted from January to October 2024, with a total budget of Kshs. 223,635.

1.8 Limitations of the Study

A number of constraints affected the effectiveness of this study hence, negatively affecting the generalizations of the study. The limitations included: The study lacked control over the respondents' attitude towards this study. This led them to withhold information which influenced the quality of generalizations of the study. To overcome this limitation, the study assured respondents of confidentiality and anonymity before involving them in the study.

The study lacked cooperation from some respondents who viewed the study with suspicion and fear that the information they gave may be used to their disadvantage. To minimize on this limitation, the researcher assured them that the findings of the study were for academic purposes only and that they had no reason to fear to give information and further that they could get a copy of the same if they so wished.

1.9 Delimitation

Geographical Scope: Limited the study to hospitals within Kisii County to maintain focus and relevance to the local context.

Timeframe: Restricted the study to three months to ensure data collection and analysis are feasible and manageable.

Sample Size: Limited the number of hospitals or departments within hospitals included in the study to maintain practicality and resource constraints.

Focus on Specific Variables: Concentrated on the variables of inventory shrinkage, inventory tracking, inventory records accuracy, and supplier collaboration to provide depth and specificity to the research.

Exclusion of External Factors: Did not consider external factors such as economic conditions or regulatory changes that may impact inventory management practices and organizational performance.

Language and Cultural Context: Acknowledged the influence of language and cultural nuances within Kisii County and how they affected inventory management practices and organizational performance.

1.10 Assumptions of the Study

i. The study assumed that there was sufficient and accurate data related to inventory management practices and organizational performance in hospitals in Kisii County is available for analysis. This included data on inventory levels, financial records, and performance metrics.

ii. The study also assumed that Hospitals in Kisii County follow consistent and standardized inventory management practices during the study period, allowing for meaningful comparisons and analysis of their impact on organizational performance.

iii. Further the study assumed that Stakeholders within the hospitals, including staff, management, and suppliers, cooperate and actively participate in the

implementation of inventory management practices, fostering a conducive environment for effective operations.

1.11 Operational definition of Key Terms

Hospital Organizational Performance	This is the effectiveness and efficiency with which a hospital or healthcare organization achieves its goals and objectives, including its ability to provide highquality patient care, manage resources efficiently, meet financial targets, and adapt to changes in the healthcare environment.
Inventory Management Practices	This refers to the strategies, policies, and procedures implemented by a business to control and optimize the levels of inventory.
Inventory Shrinkage	Often referred to as shrink, is a term used in retail and inventory management to describe the discrepancy between the amount of inventory a business believes it has on hand and the actual physical inventory count. In other words, it represents the loss of inventory between the point of purchase and the point of sale.
Inventory Records Accuracy	Is the degree of precision and correctness in the information and data maintained within an organization's inventory records.
Inventor Tracking	Is the process of monitoring and managing a company's physical goods, raw materials, work-in-progress, and finished products.
Supplier Collaboration	Is the strategic and cooperative partnership between a hospital and its suppliers to achieve shared goals, improve efficiency, and enhance overall performance throughout the supply chain.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section, an examination of the existing body of literature pertinent to the study is presented. The organization of this review encompasses two main components: the theoretical framework and the conceptual framework. The exploration of literature aligns with the established study objectives. The synthesis of information heavily relies on data sourced from various published references, including books, online magazines, and journals. This review aims to offer a comprehensive summary of previous research endeavors related to inventory management, elucidating their impact on organizational performance.

2.2 Theoretical Review

The study was founded on the Strategic Choice Theory, the Economic Order Quantity Theory, and Transaction Cost Analysis, as detailed below.

2.2.1 Strategic Choice Theory (SCT)

Strategic Choice Theory (SCT) investigates the relationship between the decisions made by top management and the performance of an organization, taking into account the dynamic interactions between internal and external factors. Emphasizing the critical influence of managerial decisions on organizational outcomes, Child (1972) noted that Campling and Michelson (1998) developed a strategic choice model to illustrate how environmental factors, organizational actions, and overall firm performance are interconnected. This model aims to achieve higher performance standards for greater efficiency, especially in resource-constrained settings. However, it is important to note that the theory does not sufficiently address contextual elements such as the environment,

technology, and operational scale, focusing mainly on the impact of organizational structure on performance while overlooking vital external factors.

Child (1972) further argues that organizations that delegate authority and responsibilities to managers for decisions regarding aspects like inventory investment and maintenance of inventory levels experience significant effects on their outcomes and performance. SCT posits that optimal management choices depend on environmental elements, including suppliers, procurement, and inventory management decisions.

Expanding on this viewpoint, Ketchen and Hult (2007) describe SCT as a framework that views managers as key decision-makers who shape and direct the decision-making processes within an organization. They suggest that changes in decision-making processes can be prompted by contextual factors such as environmental conditions and technological advancements. The adoption of new technologies in inventory management—like RFID, barcodes, and ERP systems—illustrates the technological shifts that require corporate-level decision-making supported by both business and functional areas.

Strategic Choice Theory is significant for inventory management as it offers a framework for comprehending how strategic inventory decisions affect organizational performance. By synchronizing inventory practices with overarching strategic objectives and adjusting to changes in the environment, organizations can enhance their performance results.

2.2.2 Theory of Economic Order Quantity (Wilson's EOQ Model)

Erlenkotter (2014) is acknowledged as a significant contributor to operations management, having created models to establish optimal inventory levels for organizations. Blackburn (2010) supports this by noting that the Economic Order Quantity (EOQ) model, initially formulated by Harris in 1913 and often referred to as the

Wilson EOQ model, is extensively used in various industries for inventory management. Král (2003) highlights that Harris provided a critical analysis of the EOQ model, which has been shown to increase certain costs—specifically, a decrease in ordering costs coupled with a rise in holding costs. The total costs associated with inventory reach a minimum point, indicating where overall inventory expenses are minimized.

The EOQ represents the inventory level that effectively reduces both holding and ordering costs. According to Coleman (2002) and Ogbo (2011), the model calculates order quantities that balance inventory holding costs against re-ordering costs. Ogbo (2011) identifies key assumptions for EOQ calculation, including constant stock holding costs, fixed ordering costs, steady demand rates, predictable lead time cycles, unchanging unit prices, instantaneous replenishment, simultaneous batch delivery, and no allowance for stock-outs.

A limitation of the EOQ model is its disregard for the need for buffer stocks, which are essential for accommodating fluctuations in lead times and demand—issues frequently encountered in practice. The model requires determining the optimal order point and quantity for each item in stock while assuming that all other variables remain constant, despite the typical uncertainties in business, such as demand variability, transport damage, and delivery delays.

Considering the uncertainties prevalent in the business environment, the Adjusted Economic Order Quantity (EOQ) model becomes pertinent, especially in sectors like healthcare where demand fluctuations are influenced by external factors. In hospital pharmacies, various internal and external elements impact inventory levels; while some factors, like prescribers' preferences, can be managed, others, such as war, are beyond control.

Given the simplistic assumptions of the traditional EOQ model, which seldom reflect real-world conditions, modifications are needed to account for uncertainties, thereby making the EOQ model more flexible in unpredictable business environments. The Theory of Economic Order Quantity is crucial for inventory management and organizational performance, offering a structured method for optimizing inventory levels. By harmonizing ordering and holding costs, the EOQ model assists organizations in minimizing total inventory costs, enhancing cash flow, improving customer service, and streamlining operations. Implementing the EOQ model or its variations can result in more efficient and effective inventory management, directly influencing overall organizational performance.

2.2.3 Transaction Cost Analysis

Research on inventory management highlights the necessity for organizations to reduce costs, which leads to the utilization of the Transaction Cost Approach (TCA) theory. Halldorsson et al. (2007) describe TCA as a framework aimed at minimizing costs throughout the supply chain. Originally introduced by mathematician economist Oliver Williamson in the early 1970s, TCA was integrated into the general equilibrium model, establishing the foundation for transaction cost economics within the firm theory.

Williamson (1975, 1981) suggests that organizations can lower transaction costs by pursuing vertical integration and fostering trust. This integration strategy not only decreases inventory management costs but also improves service levels for both internal and external customers, thereby freeing up capital for investment in other areas of the organization. Additionally, transaction costs within supply chains can be reduced through both vertical and horizontal integration, leveraging economies of scale by consolidating supply and/or demand. However, TCA has been critiqued for its emphasis on dependent

and independent economic factors while overlooking personal and social relationships. A notable criticism, as pointed out by Skjoett-Larsen (1999), is
TCA's failure to adequately address personal and social dimensions in its analysis.

The relevance of Transaction Cost Analysis Theory to inventory management and organizational performance lies in its provision of a framework for understanding and minimizing transaction-related costs. By applying TCA, organizations can refine their inventory management practices, choose suitable governance structures, and make strategic decisions that enhance efficiency, reduce costs, and improve overall performance.

2.3 Conceptual Framework

A conceptual framework serves as a network or "plane" of interconnected concepts that collectively offer a thorough understanding of a phenomenon (Jabareen, 2009). It consists of overarching ideas that illustrate the relationship between independent variables (factors) and dependent variables (outcomes). The conceptual framework connects the research title, objectives, methodology, and literature review (Jabareen, 2009). Figure 2.1 illustrates the relationship between the predictor and outcome variables.

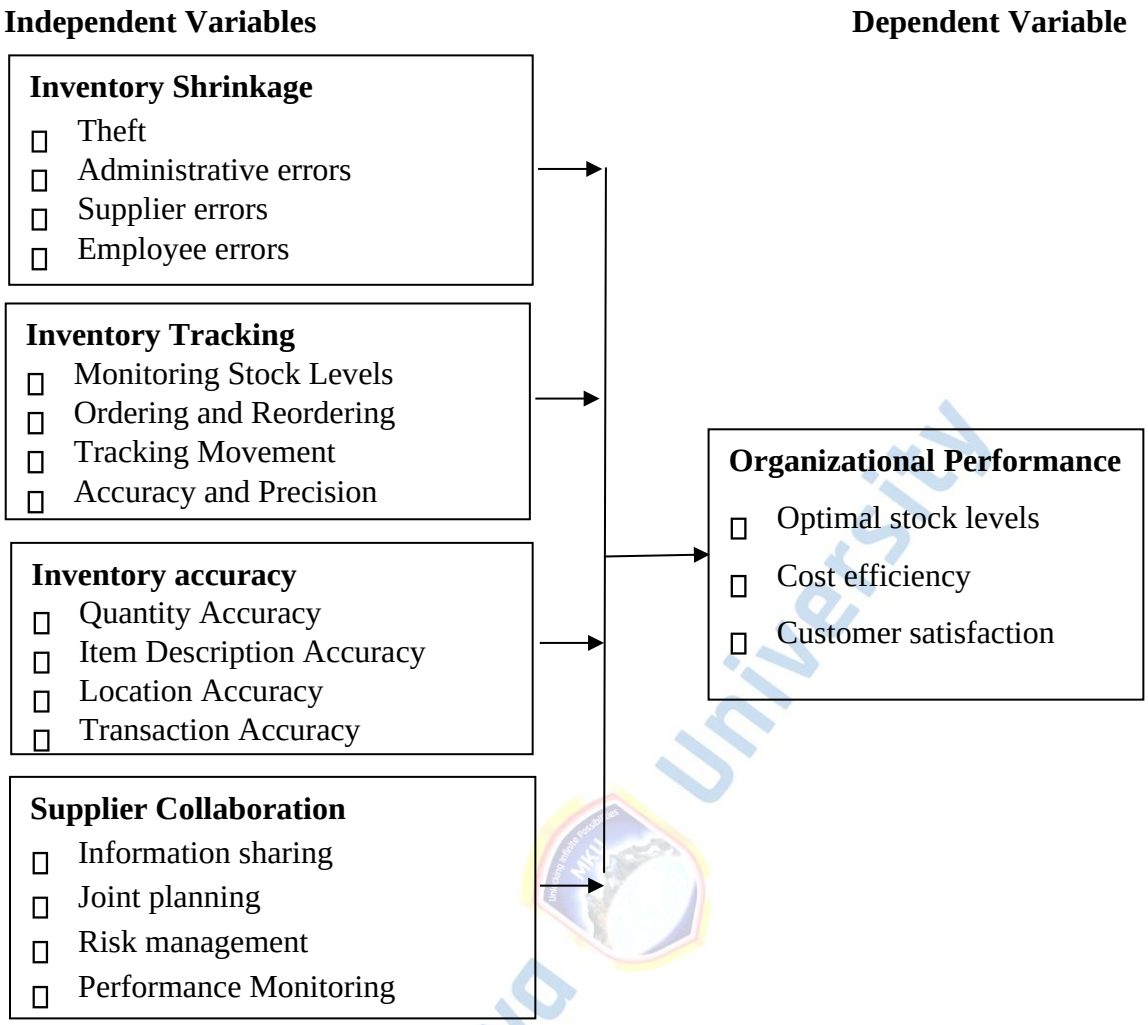


Figure 2.1 Conceptual framework

Source: Researcher, 2024

The dependent variable in this study will be the organizational performance of hospitals, assessed through optimal stock levels. It is posited that efficient inventory management allows a business to maintain the appropriate stock balance. This entails preventing stock-outs to satisfy customer demand while avoiding excess inventory that can immobilize capital and occupy storage space. Additionally, the study will evaluate customer satisfaction, arguing that an effectively managed inventory system ensures timely fulfillment of customer needs. With products readily available, lead times are reduced, enhancing overall customer satisfaction. Furthermore, streamlined inventory management helps lower holding costs associated with storage, insurance, and

obsolescence, as well as reduces ordering costs by optimizing order quantities and frequencies.

Inventory shrinkage refers to the difference between the actual physical inventory a business holds and the quantities recorded in its accounting systems. In simpler terms, it signifies the decrease in inventory levels that cannot be justified by sales, usage, or other legitimate reasons. Various factors contribute to inventory shrinkage, including theft, damage, transaction recording errors, administrative mistakes, and insufficient control measures. This issue can arise across different business types and industries, including retail, manufacturing, and distribution. Reducing inventory shrinkage is vital for businesses to maintain accurate financial records, enhance operational efficiency, and ultimately increase profitability. Common strategies to minimize inventory shrinkage include implementing robust inventory management systems, strengthening security measures, and providing employee training.

Inventory tracking, also known as inventory management or inventory control, involves the systematic monitoring and administration of a company's tangible assets, including physical goods, raw materials, work-in-progress items, and finished products. The main goal of inventory tracking is to ensure that a business maintains sufficient stock to meet customer demand while minimizing costs associated with excess inventory. This process includes monitoring stock quantities to prevent shortages or surpluses, determining optimal timing and amounts for reordering, and documenting the movement of goods, such as sales and returns. Additionally, it involves ensuring that recorded inventory levels match actual physical counts, often verified through regular physical counts or by using technologies like barcode scanners and RFID.

The accuracy of inventory records is defined by the precision of the data contained within an organization's inventory management system. Maintaining accurate and upto-date

records is crucial for businesses to efficiently manage their supply chains, meet customer demands, optimize stock levels, and make informed decisions. This includes ensuring that the recorded quantities of each item correspond to the actual physical inventory, verifying that item descriptions and specifications are correctly documented to avoid confusion during order picking, confirming that the recorded locations of inventory items align with their actual locations in storage facilities, and validating the accuracy of all inventory-related transactions, such as purchases, sales, returns, and adjustments. Any discrepancies in these transactions can lead to inaccuracies in inventory levels. Additionally, it is important to ensure that the monetary value assigned to each inventory item reflects its true cost, which is vital for financial reporting and assessing the overall inventory value.

Supplier collaboration cultivates an environment conducive to innovation, where suppliers can offer ideas for product enhancement, cost reduction, and process improvements that benefit both parties. Engaging in partnerships with suppliers allows organizations to gain better insights and manage risks within the supply chain effectively. This includes identifying potential disruptions and developing contingency plans to address challenges such as supply shortages, quality issues, or geopolitical factors. Establishing key performance indicators (KPIs) and consistently monitoring supplier performance are essential for ensuring that both parties fulfill their commitments, including evaluating delivery times, quality standards, and cost

efficiency.

2.4 Literature Review

The literature review looks into studies done by other scholars or researchers either directly or indirectly related to the study variables being; inventory shrinkage, inventory

records, inventory investment and inventory turnover and organizational performance as described below.

2.4.1 Organizational Performance

The concept of organizational performance pertains to assessing how effectively an organization attains its designated objectives, encompassing both financial and marketrelated goals (Bashaer *et al*., 2016). Specifically, organizational procurement performance involves evaluating efficiency and effectiveness, with efficiency gauging the successful conversion of inputs into outputs, and effectiveness measuring the accomplishment of desired outputs within the system (Bashaer *et al.,* 2016). Organizational performance entails the comparison of actual results or outputs with the intended ones. It encompasses three distinct dimensions of corporate performance: organizational performance, product market performance, and shareholder return, as outlined by Alex and Kazaara (2023). Notably, the prevailing focus in organizational performance measurement remains predominantly centered on financial data for the purposes of coordination and control.

Globally, the assessment of the organizational performance of manufacturing firms in the United States encompasses a thorough evaluation across various dimensions, including financial, operational, and strategic indicators. Financial metrics such as return on assets (ROA), return on equity (ROE), gross margin, and profitability ratios offer insights into a company's efficiency in utilizing its resources to generate profits (Ntirandekura, Friday, *et al.*, 2022). Operational metrics, including manufacturing efficiency, cycle times, and quality performance, provide an indication of a firm's ability to optimize processes and efficiently deliver products to meet customer demands. Numerous critical factors contribute to the organizational performance of

U.S. manufacturing firms. Technological advancements and digitization have transformed production processes, leading to increased efficiency and product quality. A skilled and motivated workforce is a driving force behind productivity and innovation, contributing to a firm's operational excellence. Tailoring products to customer preferences and considering sustainability further strengthens market presence and competitiveness (Turyatemba *et al*., 2022).

Scholars and researchers in the business field have extensively explored firm performances, with a particular focus on inventory management and its impact on the performance of listed manufacturing firms in Kenya, a subject that has not been extensively covered in evidence-based literature (Naliaka & Namusonge, 2015). This study aims to contribute to the existing body of knowledge by examining related literature, emphasizing immediate effects, and assessing relevance. Previous reviews of literature on the relationship between inventory management and firm performance (Prempeh, 2016) underscore the critical attention required for efficient inventory management to achieve success.

The existing literature presents conflicting perspectives on the impact of inventory management on firm performance in Ghana's manufacturing firms. Prempeh (2016) found a positive relationship, while Fosu (2016) reported a negative relationship. Prempeh's study focused on four listed manufacturing companies on the Ghana Stock Exchange, whereas Fosu examined a single Brewery company, Guinness Brewery Ltd. This current research extends its scope by investigating fourteen listed manufacturing firms on the Ghana Stock Exchange.

Manufacturing firms in Sub-Saharan Africa (SSA) exhibit a mixed performance marked by both opportunities and challenges. The region's manufacturing sector is influenced by various factors affecting its overall functioning, as highlighted by

Christopher (2022). On a positive note, there is a noticeable focus on economic diversification, technological advancements, and increased investment in infrastructure, which could potentially enhance the performance of manufacturing firms (African Development Bank Group, 2020). Furthermore, the introduction of the African Continental Free Trade Area (AfCFTA), designed to establish a unified market for goods and services across the continent, offers new possibilities for manufacturing firms to broaden their market reach (Moses *et al.*, 2022).

The manufacturing sector in Sub-Saharan Africa encounters substantial obstacles that hinder its overall performance. Factors such as limited access to financing, poor infrastructure, bureaucratic inefficiencies, and an unpredictable regulatory environment impede the growth and effectiveness of manufacturing firms (Wakjira et al., 2022). Additionally, the insufficient development of skills and human capital, along with low investment levels in research and development (R&D), restrict innovation and productivity. The region's heavy dependence on commodity exports, combined with vulnerability to global market fluctuations, further undermines the stability and growth prospects of the manufacturing sector.

Moreover, there is uncertainty regarding the factors influencing firm performance, including management efficiency (profitability), cash flow, firm size, and growth levels (Mwangi and Nyambura, 2015, 2016; Fosu, 2016; Prempeh, 2016). For instance, Prempeh (2016) measured firm performance based on profitability, while Mwangi and Nyambura (2015, 2016) considered various factors, such as management efficiency, profitability, cash flow, firm size, and growth levels, demonstrating a consistent significant positive correlation with firm performance. In contrast, Fosu (2016) found a negative relationship based solely on profitability.

Organizational performance is a prominent topic in contemporary literature, with scholars examining diverse factors that impact performance across various organizational contexts. Awino (2015) investigates the role of organizational structure in the performance of large manufacturing firms in Kenya, revealing that non-financial indicators, including customer satisfaction, internal processes, and firm image, play a significant role in performance outcomes.

Shisia, Sang, Matoke, and Omwario (2014) argue that strategic innovation can positively influence the performance of public universities in Kenya. The impact of human capital on organizational performance is also explored by Odhon'g and Omolo (2015), who analyze human capital investment in the pharmaceutical sector. Their study, utilizing inferential tests of association, indicates a link between organizational performance and investment in quality, relevance, and reliability of human capital.

Kinyua-Njuguna, Munyoki, and Kibera (2014) focus on the internal environment of community-based organizations addressing HIV and AIDS, finding that this environment significantly impacts the organizations' relevance, efficiency, and effectiveness. Mbalwa, Kombo, Chepkoech, Koech, and Shavulimo (2014) examine corporate governance as a potential influencer of organizational performance, revealing positive correlations between corporate governance practices and performance, particularly regarding board characteristics, top management, and stakeholder communication.

Kitonga Bichanga and Muema (2016) identify strategic leadership variables, such as human capital, ethical practices, and strategic direction, as positively associated with organizational performance in not-for-profit organizations. Conversely, Kariuki and Murimi (2015) investigate employee empowerment's effect on organizational performance in Tata Chemicals, Magadi, Kenya, concluding that employee

empowerment through information sharing and training has a moderate impact on performance.

Chimwani, Iravo, and Tirimba (2014) argue that for organizations to meet their procurement objectives—transforming functions into processes, inventory into information, products into customers, profit into performance, and transactions into relationships—ongoing monitoring of key procurement performance metrics is essential. They emphasize that successful procurement performance measurement relies on a limited number of indicators that can be identified using the balanced scorecard.

Furthermore, adherence to supply chain practices can reduce operational costs and better align outputs with organizational objectives (Muma et al., 2014). Kimotho (2014) emphasizes that effective procurement performance is crucial for enhancing firm profitability, supply quality, and competitiveness. Consequently, implementing suitable supply chain practices is regarded as a solution to the challenges facing the textile industry in Kenya. However, due to a lack of substantial evidence from the textile industry's perspective, this study seeks to identify supply chain determinants that can accurately predict firm performance in this vital sector.

According to Chene (2011), a business entity's performance is significantly influenced by its inventory management practices. Recently, the construction industry has faced numerous challenges in inventory management, adversely affecting the performance of many construction companies (Ondari & Gekara, 2013). Common issues include overstocking outdated materials, inventory theft during stocktaking, understocking, and delivery delays (Kimani, 2016).

2.4.2 Inventory Shrinkage on Organizational Performance

The research conducted by Obollah, Waiganjo, and Wachiuri in 2015 explored the assessment of inventory management practices and their impact on performance in health institutions, particularly focusing on Kenyatta National Hospital. The study's findings indicated a significant negative relationship between inventory shrinkage and organizational performance. Specifically, the research revealed that, after controlling for other factors, an increase in inventory shrinkage was associated with a proportional decrease in performance. Despite the insights gained from this study within the health sector at Kenyatta Hospital, a literature gap existed concerning Kisii Level Six Hospital, which operates under different management. As a result, the recommendations derived from the Kenyatta National Hospital study were not directly applicable, and it was this void that the present study aimed to address.

In a separate study conducted by Kohne and Pekeur in 2014, the investigation focused on assessing the impact of retail shrinkage on the sustainability and profitability of retail shops. This study, carried out in South Africa, identified a clear correlation between shrinkage and store profitability. The reduction of shrinkage provided an opportunity for an average XYC Franchise owner to enhance profitability. The study emphasized that shrinkage is a multifaceted issue that extends beyond external theft, requiring a comprehensive and coordinated approach that surpasses company and departmental boundaries. While this research was conducted in the profit-making industry in South Africa, there was a lack of literature regarding the potential effects of inventory shrinkage in the service industry in Kenya, specifically at Level Six Hospital
Kisii. It was this research gap that the proposed study sought to fill.

2.4.3 Inventory Tracking on Organizational Performance

Onchoke and Wanyoike (2016) conducted a study to investigate the influence of inventory control practices on the procurement performance of agrichemical distributors in Nakuru Central Sub-County. They utilized self-administered questionnaires that were distributed and collected manually. The results of their regression analysis revealed a positive and significant impact of inventory auditing, inventory security practices, and computerized inventory control on procurement performance. While their study focused on the agrichemical industry, a research gap existed in the government service sector, particularly in level six hospitals in Kisii. The proposed study aimed to address this gap.

In a separate study, Kitheka and Ondiek (2014) explored the impact of automation in inventory management on the performance of supermarkets in Western Kenya. Using a survey design, their research focused on supermarkets located in Kisumu, Kakamega, and Bungoma towns. The findings from their regression analysis demonstrated a clear and direct linear relationship between inventory management automation and supermarket performance. Although Kitheka and Ondiek's study investigated automation as a control mechanism in supermarkets, there was a scarcity of literature on the effects of stock control in the health service sector. The present study sought to fill this gap.

Acknowledging the diverse types of inventories within a business, it was imperative to find an effective inventory tracking system for identifying and monitoring inventory items (Onchoke & Wanyoike, 2016). In Africa, significant developments had occurred in inventory control software designed to assist with managing inventory levels (Tundura and Wanyoike, 2016). Barcoding and radio frequency identification (RFID) emerged as widely utilized systems for accessing efficient and accurate inventory information (Kiswii & Wandera, 2019).

2.4.4 Inventory Records Accuracy on Organizational Performance

An accurate inventory management system was crucial for businesses to ensure the timely availability of the correct products at designated locations and in the precise quantities required (Kull et al., 2013). Inventory record discrepancies arose when there was a misalignment between the documented inventory quantity and the actual physical inventory. Ideally, the recorded inventory quantity matched precisely with the physical inventory quantity (Kull et al., 2013).

In their study on inventory record inaccuracies and store-level performance, Amir et al. (2021) discovered a significant positive correlation between inventory inaccuracy and store-level performance. Moreover, analyzing store-level management into specific components, such as inventory management and sales management, proved highly advantageous in evaluating the impact of Inventory Replenishment and Improvement (IRI) on store-level performance. The numerical findings also demonstrated that the improvement in IRI was minimal for stores operating near efficiency levels but considerably substantial for stores characterized by high inefficiency.

2.4.5 Supplier Collaboration on Organizational Performance

In recent times, a notable shift occurred in the focus of strategic supply chain management (SCM), which placed a growing emphasis on supplier relationships (Awasthi & Kannan, 2016). This transformation moved away from transactional and short-term interactions towards the cultivation of collaborative, long-term partnerships, aimed at enhancing flexibility and creating additional value through cooperation. As a result, companies found it increasingly important to regularly evaluate their positions within a supply network, recognize the interactive dynamics inherent in buyer-supplier relationships, and understand strategies to influence the overall environment of these relationships (Sundquist, Gadde, & Hulthén, 2018). This shift compelled purchasing

companies to articulate their associations with suppliers clearly and to utilize their relationship management skills to optimize benefits from their supplier base. The focus then shifted to developing enduring partnerships that extended beyond mere transactions, highlighting collaboration and mutual value creation.

Shalle, Guyo, and Amuhaya (2014) observed that collaboration between buyers and suppliers enhanced procurement performance, leading to a competitive advantage achieved through shared information and joint decision-making in inter-organizational relationships. This implied that the degree of collaboration in the supply chain significantly influenced the connection between external resources and the performance of the buying firm. Collaborative exchanges between buyers and suppliers enabled greater access to external resources. The research findings underscored the importance of responsiveness, flexibility, commitment, and the shared beliefs of trading partners in dedicating efforts to sustain their relationships.

Mueni and Were's (2017) study on the role of supplier collaboration in organizational performance at the Kenya Urban Roads Authority suggested a strong correlation between effective supplier collaboration and the authority's organizational performance. This implied that a robust supplier collaboration platform served as a connecting link between buyers, suppliers, and their respective processes in daily operations. Based on these findings, the study recommended implementing Demand/Supply Planning and Management strategies to align resources with requirements. This involved establishing and communicating plans that aligned the supply chain with corporate financial objectives. It was also suggested to implement a Supplier Collaboration plan that actively contributed to achieving corporate financial goals, thereby enhancing overall organizational performance. The careful management of business rules and stage-gate

processes proved crucial for optimizing Supply Chain Performance Objectives, ensuring alignment with the identified findings and promoting efficiency within the supply chain.

Kamau and Odari's (2017) study on the effect of Supplier Collaboration on the Organizational Competitiveness of Manufacturing Firms in Kenya, which utilized a descriptive research design with a population of 150 respondents, indicated a significant enhancement in organizational competitiveness through supplier collaboration. Consequently, the study proposed that manufacturing firms should nurture close relationships with their suppliers, fostering long-term partnerships. This approach cultivated collaborative relationships, resulting not only in mutually beneficial situations but also in scenarios where both parties continually experienced heightened success.

2.5 Recap of Literature Review

A study conducted by Ondari and Gekara (2013) and Kimani (2016) indicated that issues in inventory management, such as overstocking, theft, and delivery delays, had negatively impacted performance. This highlighted the multifaceted nature of organizational performance, which encompassed financial, operational, and strategic dimensions. Inventory management played a crucial role, with varying impacts reported across different contexts and regions. Effective inventory management was linked to improved performance; however, challenges persisted, particularly in specific sectors like manufacturing and construction. Understanding these dynamics was essential for optimizing organizational performance and addressing industry-specific issues.

The Theory of Economic Order Quantity (EOQ) provided a systematic method for determining optimal inventory levels by balancing ordering and holding costs to minimize total inventory expenses. Although the model's assumptions did not always reflect real-world conditions, adjusted EOQ models were able to address uncertainties

and improve applicability across various sectors. Proper use of EOQ or its variants enhanced inventory management, contributing to better cash flow, customer service, and overall organizational performance.

Transaction Cost Analysis (TCA) was a theory focused on minimizing costs associated with transactions throughout the supply chain. Developed by economist Oliver Williamson in the early 1970s, TCA became foundational in understanding transaction costs within the theory of the firm. TCA emphasized the benefits of vertical and horizontal integration, along with trust-building, in reducing transaction costs. Despite facing criticisms for its narrow focus on economic factors and the neglect of personal and social dynamics, TCA remained relevant for optimizing inventory management practices. By applying TCA, organizations enhanced efficiency, reduced costs, and improved overall performance through better management of transactional relationships and governance structures.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter addressed the research design, the study population, sampling techniques and procedures, data collection methods, pilot study, reliability and validity, as well as data analysis and presentation.

3.2 Research Design

The general framework or plan that directed the gathering, processing, and interpretation of data for a research thesis was known as the research design (Sekaran, 2016). This step was essential in the research process as it established the parameters for the investigation. A well-structured research design ensured that the study was logical, valid, and reliable (Kothari, 2011). Since this study aimed to collect data that was quantitative in nature, it adopted a survey design. Surveys were applicable across various disciplines and topics. They were flexible and could be used to investigate a wide range of issues, from social behaviors and attitudes to consumer preferences and market trends. This approach was well-suited to the study's objective of examining the social behaviors and attitudes of teenage mothers, the psychosocial support they received, and its impact on completion rates. Furthermore, the design facilitated the collection of quantitative data, which could be statistically analyzed. This allowed researchers to identify patterns, trends, and relationships between variables, providing a more structured and rigorous analysis (Creswell, 1998).

3.3 Target Population

Asiamah et al. (2016) described a study population as a larger collection of all subjects from which a sample was drawn. The unit of observation was all 163 health facilities in the county, evaluated to determine whether they were involved in inventory management,

either directly or indirectly. The study further sampled crucial departments within the hospitals, including Procurement, Stores, Auditors, Social Workers, Donors, Hospital Committee, Patients, and the Inspection Committee. In total, 832 respondents were surveyed from the 163 hospitals in Kisii County, as shown in Table 3.1.

Table 3.1: Target Population

Hospital Level	**No. of Hospitals**	**Respondents**					
		Procurement	Stores	Auditors	Hospital committee	Inspection committee	TOT
Level 5	1	8	6	5	10	7	36
Level 4	22	22	44	44	88	3	201
Level 3	35	0	70	70	35	0	175
Level 2	105	0	210	210	0	0	420
Total	**163**	**31**	**332**	**332**	**137**	**15**	**832**

Source: Kenya Demographic and Health Survey 2022

3.4 Sample Size and Sampling Techniques

The sampling plan outlined the sampling unit, sampling frame, sampling procedures, and sample size for the study. The sampling frame provided a list of all population units from which the sample was drawn. According to Etikan (2016), an optimum sample is one that meets the criteria of efficiency, representativeness, reliability, and flexibility. This study employed the Yamene (1967) formula to determine the sample from the study population, as detailed below.

n=N/1+Ne2

Where n=Sample size

N=population and e being the margin of error. The formula uses 95% confidence p=0.05 are assumed. Hence,

n=832/1+832 (0.05^2)

n =832/1+2.08=n=832/3.08

N=270.12 =270

Based on the calculations using the Yamane formula, the sample for the study consisted of 270 respondents. After determining the total of 270 respondents, proportionate stratified sampling, as outlined by Krejcie and Morgan (1970), was employed to ascertain the sample size for each stratum (sector):

$$s = XS \div P$$

Where;

s = Sub-sample size for each sector

X = Population of staff in each sector

S = Total sample size for the study

P = Total population of all the sectors in the manufacturing firms.

The sample was distributed among the departments according to each department's population ratio, as illustrated in Table 3.2.

Table 3.2: Sample frame

Hospital Level	**Sample Size**					
	Procurement	Stores	Auditors	Hospital committee	Inspection committee	**TOT**
Level 5	3	2	2	3	2	12
Level 4	7	14	14	29	1	65
Level 3	0	23	23	11	0	57
Level 2	0	68	68	0	0	136
Total	**11**	**109**	**110**	**47**	**8**	**270**

Source: County Health Human Resource Manager (2024)

3.5 Data Collection Methods

Kombo and Tromp (2013) defined data collection as the process of compiling information to confirm or dispute specific truths. According to Creswell (2013), survey methods gathered quantitative data through instruments like questionnaires, which were

then analyzed to identify patterns in the respondents' answers. Data was collected using the questionnaires as explained below.

3.5.1 Questionnaire

According to Mugenda (2011), a questionnaire is a research tool that consists of a series of questions and prompts designed to collect data from respondents. Because questionnaires can quickly reach a large number of participants, they were deemed an appropriate tool for this research. Middle-level personnel were surveyed to gather data. The questionnaire comprised two sections: A and B. Section A collected generic and personal information, while Section B focused on gathering data based on the specific objectives. Open-ended questions and Likert Scale questions, which included five-point ratings from strongly disagree (1) to strongly agree (5), were utilized. As Heale et al. (2015) argued, these formats allowed respondents to express their opinions and share their ideas.

3.6 Pilot Study

Preliminary testing was crucial in the research process, as it involved the initial assessment of data collection tools and procedures. This step aimed to identify and rectify any issues that arose, allowing for necessary adjustments before the actual data collection from the intended population. In this context, a pilot study was conducted in the hospitals of Nyamira County, which shared similar characteristics with those in Kisii County (Miller, 2015). The pilot study included a sample size that comprised 10% of the overall study sample, as recommended by Kathuri and Pals (1993); therefore, 35 respondents from similar strata of the population were used as the pilot study sample.

3.6.1 Reliability

Reliability referred to the degree to which a questionnaire, test, observation, or any measurement method yielded consistent results upon repeated trials (Miller, 2015). It

pertained to the stability or uniformity of scores over time or across different situations, indicating the extent to which a test consistently assessed its intended construct.

Table 3.3: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.960	.966	5

To ensure reliability in this study, the examination of internal consistency for the instrument was conducted, with the aim of achieving a Cronbach's alpha reliability coefficient that exceeded 0.7, in accordance with the standards outlined by Sekaran (2016).

Table 3.4: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IS	11.2466	27.934	.823	.896	.960
IT	12.0772	29.042	.950	.955	.947
IRA	12.4563	26.243	.970	.976	.936
SC	12.4629	25.092	.935	.962	.942
OP	12.6022	25.222	.827	.744	.965

Source: Field data (2024)

Table 3.4 indicated that the rotated component matrix facilitated the interpretation of the factors extracted from the data. The values in the matrix represented the strength and direction of the relationships between variables and components. Consequently, the variables with loadings exceeding the 0.5 threshold on a specific component were regarded as closely associated with that component. Therefore, since all factors for each component loaded above the minimum threshold of 0.5, they were deemed valid for the study.

3.6.2 Validity

Heale and Alison (2015) define validity as the degree to which a test accurately assesses what it is designed to measure. Mugenda (2011) emphasizes the importance of data

collection tools being both valid and reliable to ensure the generation of useful and precise information. Valid results are obtained when these tools accurately measure their intended variables. The assessment of validity involves considering the test's format, purpose, and the target population. To validate data collection tools, content validity, as determined by expert opinions, was employed.

Table 3.5: Construct validity

	Component	
	1	2
IS	.914	
IS1	.869	
IS2	.864	
IS3	.794	.545
IS4	.837	.507
ITS	.919	
ITS1	.846	.506
ITS2		.920
ITS3		.898
ITS4		.898
IRA		.914
IRA1	.667	.709
IRA2	.765	.600
IRA3	.561	.759
IRA4		.846

Source: Field data (2024)

Table 3.5 observed that the matrix displays the loadings of each variable on the extracted components (or factors). The loadings above 0.5 reading on the scale represent the

correlations between the variables and the components. The Higher loadings indicated stronger relationships between variables and components.

3.7 Data Analysis and Presentation

Peersman (2014) defined data analysis as the process of examining, purifying, transforming, and modeling data to uncover valuable information, derive conclusions, and facilitate decision-making. This approach involved clearly delineating the objectives and inquiries that would be addressed through data analysis. Additionally, it included the collection of pertinent data from diverse sources, ensuring accuracy and comprehensiveness, and identifying and rectifying errors, inconsistencies, and missing values in the dataset to guarantee data quality. Subsequently, the quantitative data gathered underwent coding and entry into the Statistical Package for the Social Sciences (SPSS), followed by analysis using descriptive measures such as frequencies, percentages, means, and standard deviations, as well as regression analysis.

The statistics that were created included both descriptive and inferential results. The specific descriptive outcomes comprised the averages and standard deviations. The inferential results included Pearson correlations to assess the association between variables and multiple regression approaches. The ANOVA test was employed to evaluate the adequacy of the model. The coefficients of the equation assessed the relationship between Kaizen systems and the performance of tea companies. The level of confidence used in this study was 95%.

3.7.1 Model Specification

To determine the link between the dependent and independent variables, a multiple regression equation was employed. The regression model was as follows:

$$Y = \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y is the dependent variable (organizational performance), β_0 is the Y-intercept, β_1, β_2, β_3, β_4 are the regression coefficients of the four variables which are:

X_1 is inventory shrinkage,

X_2 is inventory tracking

X_3 is inventory records accuracy and

X_4 is supplier collaboration while ε is an error term at 95% confidence level.

Table 3.6: Data Analysis Plan

Objective	**Independent Variable**	**Dependent Variables**	**Unit of Measurement**	**Data Analysis**
To determine the effect of inventory shrinkage on organizational performance of Hospitals in Kisii County.	Inventory shrinkage	organizational performance	Interval scales Ordinal scales	Descriptive analysis Two-way ANOVA
To establish the effect of inventory tracking on organizational performance of Hospitals in Kisii County.	Inventory tracking	organizational performance	Interval scales Ordinal scales	Descriptive analysis Two-way ANOVA
To determine the effect of Inventory records accuracy on organizational performance of Hospitals in Kisii County.	Inventory records accuracy	organizational performance	Interval scales Ordinal scales	Descriptive analysis Two-way ANOVA

To establish the effect of supplier collaboration on organizational performance of Hospitals in Kisii County.	Supplier collaboration	organizational performance	Interval scales Ordinal scales	Descriptive analysis Two-way ANOVA

3.8 Ethical Considerations

The researcher need assistance from other individuals who would have to commit significant time and divulge a great deal of personal data in order for this research to be successful. Before beginning the study, the researcher obtained an introduction letter, an official letter from Mount Kenya University, a research permit from NACOSTI, and authorization from the County Director of Education.

In cases where a respondent voluntarily declined to engage in the research, the researcher did not force them to do so. After being advised of the procedures and any potential dangers, the potential research volunteers granted their agreement to take part. The researcher also gave the participants the assurance that their privacy would be protected during the investigation and that the data.

The study establishes safe environments where individuals feel comfortable expressing their thoughts and emotions without fear of judgment or retribution. This could be in the formed of support groups, counseling sessions, or moderated discussions. To combat societal misconceptions and controversies, accurate information was provided. Promote critical thinking and encourage individuals to question assumptions and stereotypes.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presented the findings and discussions derived from the research methodology outlined in the previous chapter. The results shed light on the effects of inventory management practices on organizational performance in hospitals in Kisii County, Kenya. The analysis focused on four components predicting inventory shrinkage: inventory shrinkage practices, inventory tracking practices, inventory records accuracy practices, and supplier collaboration, all in relation to the organizational performance of hospitals in Kisii County. It encompassed a comprehensive analysis of the response rate, the reliability of the research instrument, and the characteristics of the study variables. Furthermore, the chapter included correlations and regression analyses to explore the relationships between these variables and discussed the key findings and their implications.

4.2 Response Rate

The study targeted a study sample of 270 to represent the larger target population in the data collection. The response rates obtained were captured in Table 4.1.

Table 4.1: Response return rate Type of Hospital Total Issued Total returned Percentage Rate

Level 5	12	12	100
Level 4	65	58	89.2
Level 3	57	49	86.0
Level 2	136	129	94.85
Total	**270**	**248**	**91.85**

Source: Field data (2024)

Table 4.1 above indicated that 91.85% of the tools sent to the field were completed and returned successfully. This high response rate was significant as it reduced the risk of sampling bias (Fincham, 2008). This response rate was deemed adequate for data analysis, as it surpassed the minimum threshold of at least 70% necessary to minimize sampling bias (Saldivar, 2012).

4.3 Demographic Representation

The study sought to establish the demographic information of the respondents to help the study minimize some basic biases based on the demographic characteristics as present below.

4.3.1 Age of the Respondents

Respondents were asked to indicate their ages according to the provided age brackets, which were presented in Figure 4.1.

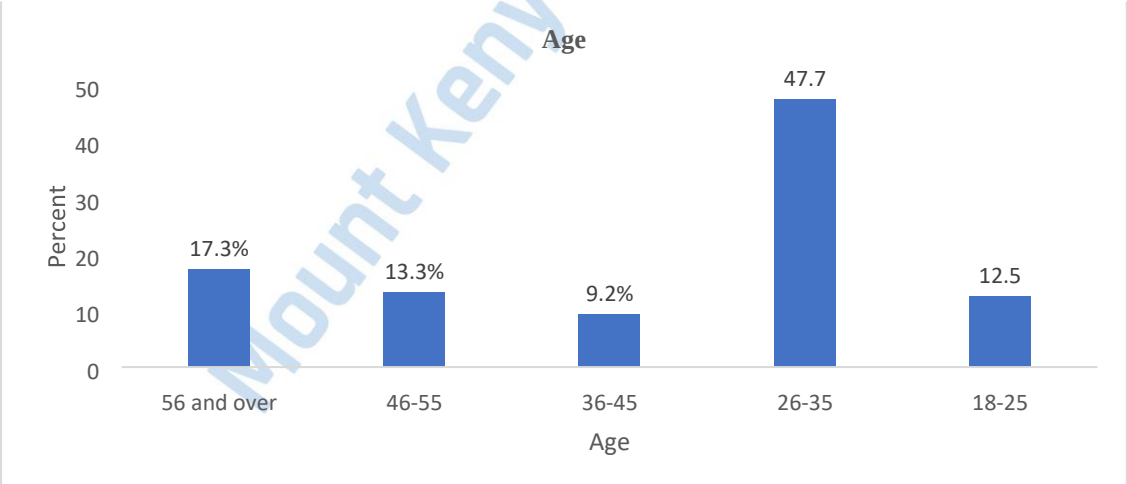
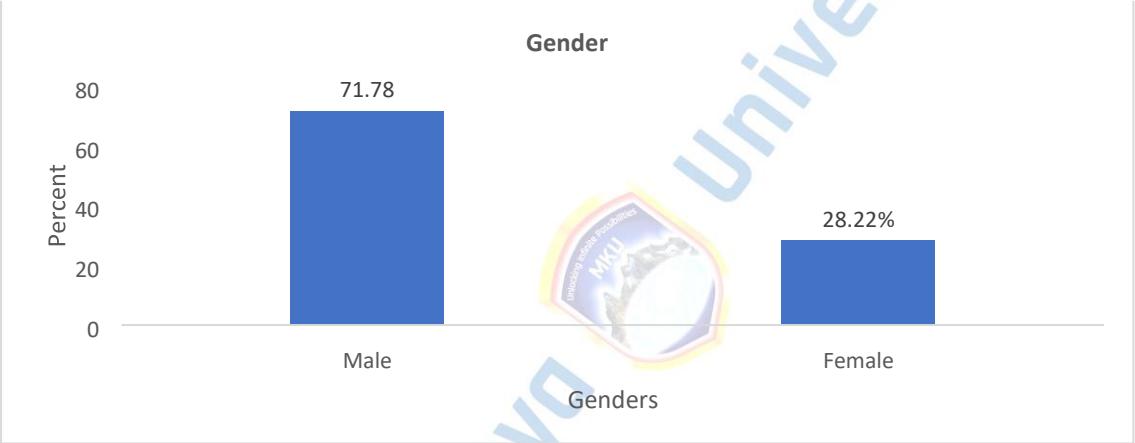


Figure 4.1: Age of the respondents

From figure 4.1, it was observed that majority of the respondents 47.7% were between ages 26-35 years, 17.3% were over 56 years, 13.3% were 46-55 years, 12.5% were between 18-25 years old while 9.2% were between 36-45 years old.

4.3.2 Gender of the Respondents

Respondents were asked to indicate their gender and their responses were recorded t in Figure 4.2.



The findings in Figure 4.2 revealed that the majority of respondents, 71.78%, were female, while 28.22% were male. Kothari (2004) asserted that a ratio of at least 1:2 in either gender representation in the study was sufficiently representative. Gender distribution was an important aspect of this study, as it helped eliminate the possibility of biased research based on gender.

4.3.3 Position held by the respondent

Respondents were asked to indicate their gender and their responses were recorded t in Figure 4.3.

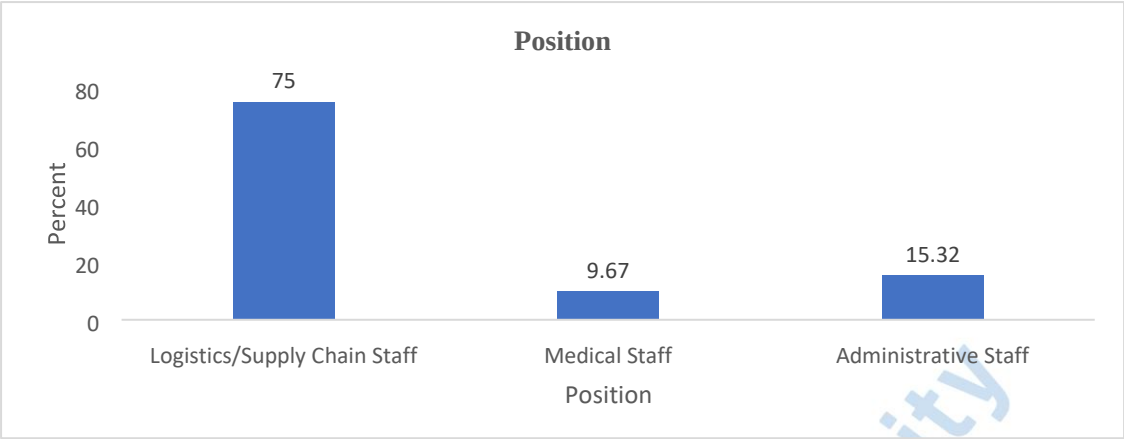


Figure 4.3: Position held by the respondent

Figure 4.3 revealed that the majority of the respondents, 75%, were staff in the logistics and supply chain department, 15.32% held administrative positions, while 9.67% worked in the medical division. These findings represented a good mix of relevant information on the subject of inventory management, providing rich data from which to generate generalizations.

4.4 Descriptive Analysis

Prior to conducting regression analysis to extrapolate insights from the descriptive data, a preliminary assessment was performed. It was crucial to elucidate the use of mean values in assessing the data for this study. Participants were instructed to utilize a 5-point Likert scale, as outlined by Joshi, Kale, Chandel, and Pal (2015), and Nemoto and Beglar (2014). The scale's interpretations were as follows: 4.3-5 = Strongly Agree, 3.5-4.2 = Agree, 2.5-3.4 = Undecided, 1.9-2.6 = Disagree, and 1-1.8 = Strongly Disagree. Means were calculated to represent the average score for each variable, providing a clearer picture of central tendency compared to the median. Additionally, standard deviations were computed to measure the spread of data points around the mean, indicating how much individual responses varied from the average.

4.4.1 Inventory Shrinkage on Organizational Performance of Hospitals

The study sought to establish the frequency of audit held at the different levels of hospitals in Kisii county. the findings were recorded in Figure 4.4.

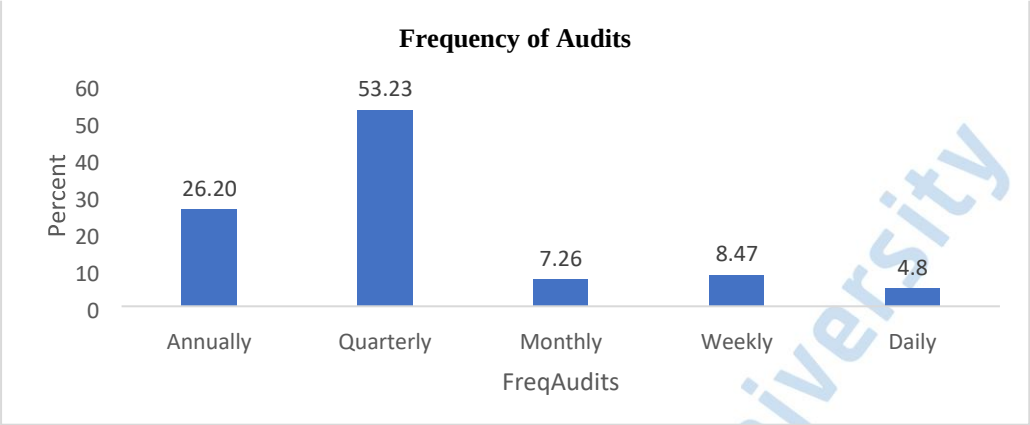


Figure 4.4: Frequency of Audits

Figure 4.4 showed that majority of the respondents 53.23% were of the view that the inventory audits are held quarterly, with 26.20% saying annually. 8.47% said the audits were done weekly and 7.26% and 4.8% said monthly and daily respectively. This finding reveals that the institution of the hospitals in Kisii County lacked a policy on inventory audits, a practice that could be exposing the inventory into shrinkage leading to negative effect on organizational performance.

4.4.2 Familiarity to shrinkage of inventory

The study further sought to establish if respondents were familiar to shrinkages of inventory among the hospitals in Kisii County. Figure 4.5 recorded the findings of the study.

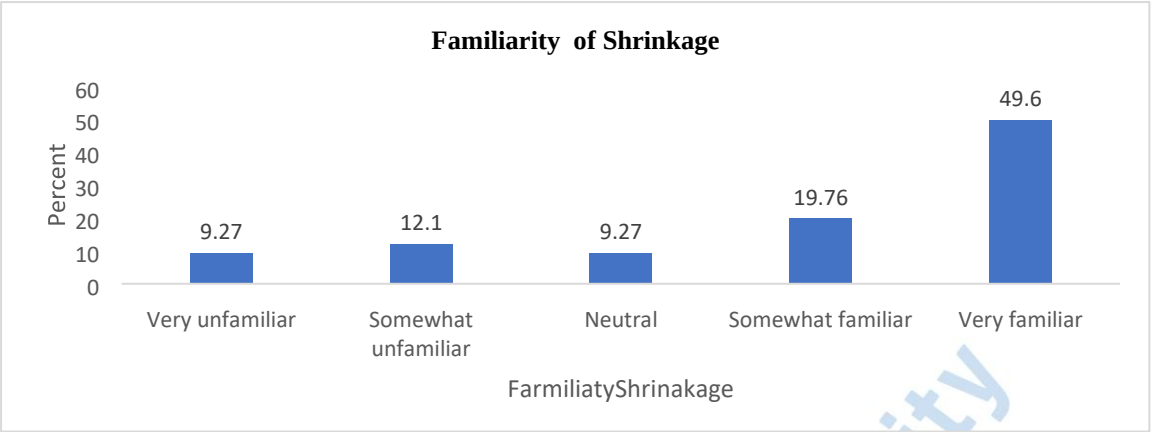


Figure 4.5: Familiarity of Shrinkage

Figure 4.5 observed 49.6% were very familiar to inventory shrinkage practices among the hospitals in the county, 19.76% saying that they were somewhat familiar ad compare to the difference that either were somewhat familiar 12.1 and 9.27% very unfamiliar. On aggregate, majority of the respondents therefore were aware of the inventory shrinkage hence, better positioned to give information on inventory management among the hospitals in the county.

4.4.3 Contributors of the Inventory Shrinkage

The study further wanted to establish from the respondents what they thought would be the possible contributors to shrinkage in the hospitals among the hospitals in Kisii County and their responses were recorded in Figure 4.6.

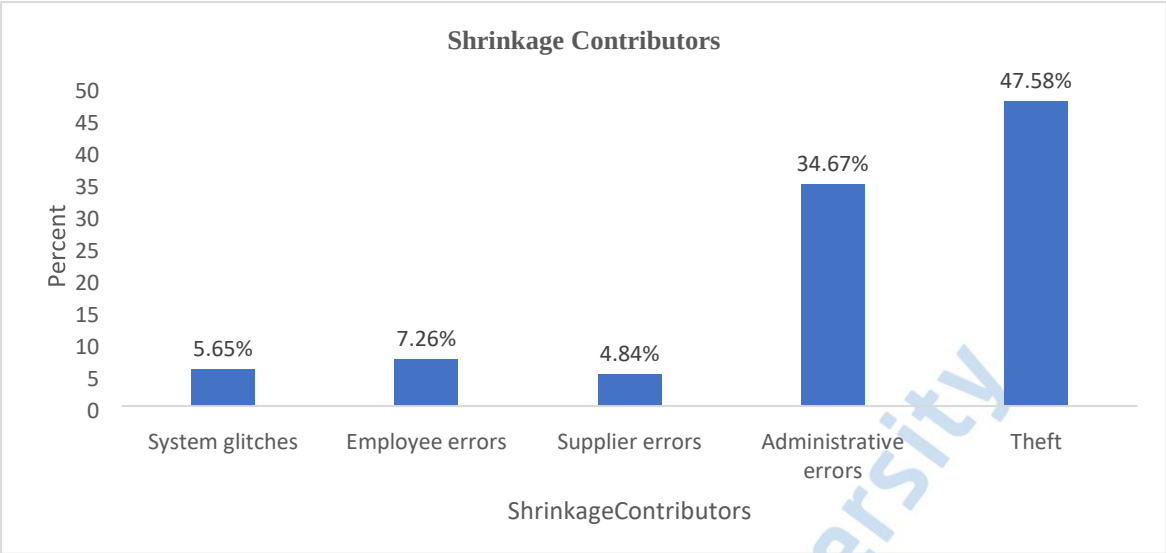


Figure 4.6: Observed Shrinkage

Figure 4.6, observed that 47.58% were of the opinion that out right theft of the inventory contributed to the shrinkage, 34.67% was as a result of the administrative errors, 7.26% was contributed by employee errors whereas 5.65% and 4.84% was as a contribution of system glitches and supplier errors respectively. From this observation therefore, it was imperative that the leading shrinkage contributor was outright theft of the inventory in the hospitals in Kisii County.

4.4.4 Impact of Inventory Shrinkage on Performance Hospitals

The study further sought to establish from the respondents the impact of inventory shrinkage on the performance among the hospitals in Kisii County and their responses were recorded in Figure 4.7.

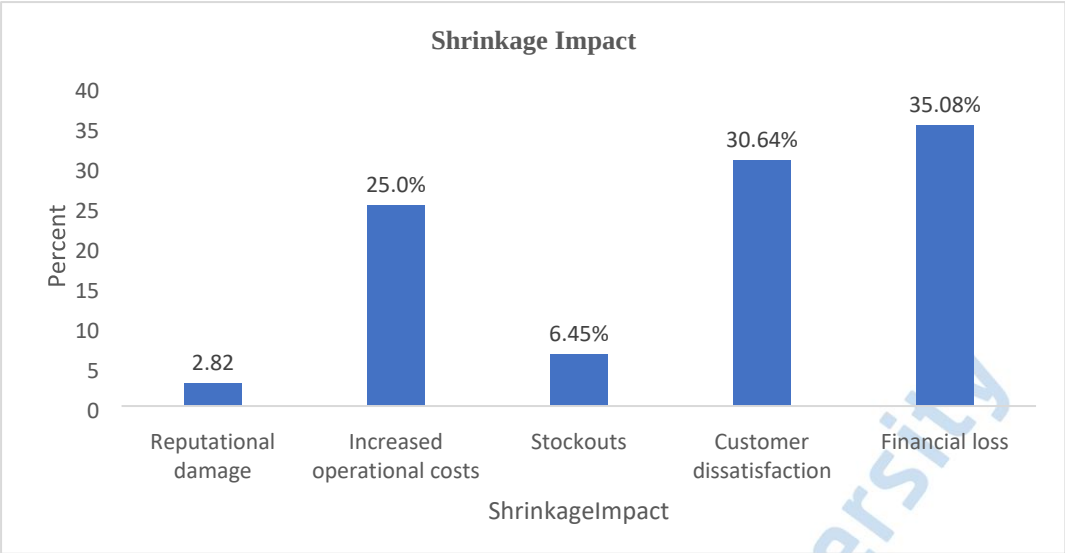


Figure 4:7: Shrinkage Impact

Figure 4.7 show that 35.08% were of the view that inventory shrinkage led to financial losses, 30.64% were of the view that it led to customer dissatisfaction, 25.0%, increased operational costs while, 6.45% and 2.82% said stock-outs and reputational damage respectively. It was therefore imperative that majority of the respondents felt that customer dissatisfaction and huge financial losses were the greatest negative effect of inventory shrinkage among hospitals in Kisii County.

4.4.5: Solutions to the Inventory Shrinkage

The study further sought to establish from the respondents the level of considered the solutions by the duty bearer, the county government, on addressing the issue of inventory shrinkage in hospitals in Kisii County and their responses were recorded in Figure 4.6.

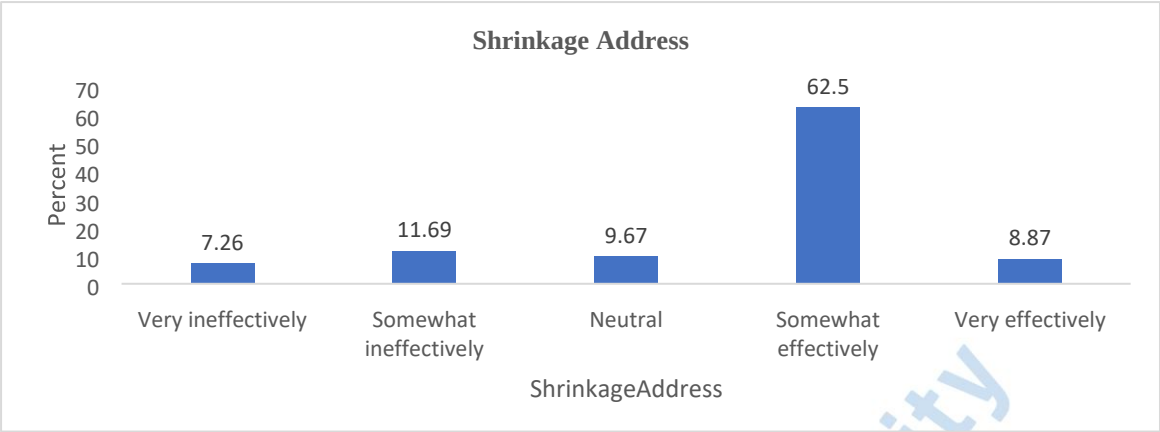


Figure 4.8: Shrinkage address

Figure 4.8 show that 62.5% were of the opinion that the inventory shrinkage address was somewhat effective, 11.69% said it was somewhat ineffective, 8.87% said it was very effective while 7.26 said it was very ineffective. In aggregate it could be said therefore that the efforts to address the inventory shrinkage in Kisii County was not effective.

4.4.6 Inventory Shrinkage Practices on Organizational Performance

Participants were asked to express their views on this matter using a Likert scale ranging from 1 to 5, where 1 indicated Strongly Disagree and 5 indicated Strongly Agree. The responses obtained were recorded and summarized in Table 4.2.

Table 4.2: Inventory shrinkage practices and organizational performance

Statement	N	Min	Max	Mean	Std. Dev
The organization experiences significant financial losses due to inventory shrinkage	248	1	5	4.40	1.145
Inventory shrinkage negatively impacts customer satisfaction and loyalty	248	1	5	3.83	1.386
The organization has effective measures in place to detect and prevent inventory shrinkage	248	1	5	3.81	1.464
Employees are adequately trained to handle inventory management, reducing the likelihood of shrinkage	248	1	5	3.81	1.512

The organization regularly conducts audits assess and address inventory shrinkage issues	248	1	5	3.54	1.704 to

Source: Field data (2024)

Table 4.2 show that most respondents, with a mean of 4.40 (SD = 1.145), strongly agreed that the organization incurs significant financial losses due to inventory shrinkage. Additionally, a majority of respondents agreed that inventory shrinkage negatively affects customer satisfaction and loyalty, with a mean of 3.83 (SD = 1.386). The study also found that most respondents, with a mean of 3.81 (SD = 1.464), agreed that the organization has effective measures to detect and prevent inventory shrinkage. Furthermore, the majority agreed, with a mean of 3.81 (SD = 1.512), that employees receive adequate training in inventory management, which helps reduce the risk of shrinkage. Lastly, most respondents agreed, with a mean of 3.54 (SD = 1.704), that the organization regularly conducts audits to evaluate and address inventory shrinkage issues. Overall, the majority of respondents concurred that inventory shrinkage has an impact on organizational performance in hospitals in Kisii County.

4.5.1 Inventory Tracking on Organizational Performance of Hospitals

The study sought to evaluate the level of inventory tracking use among the hospitals in Kisii County. The findings were recorded in Figure 4.9

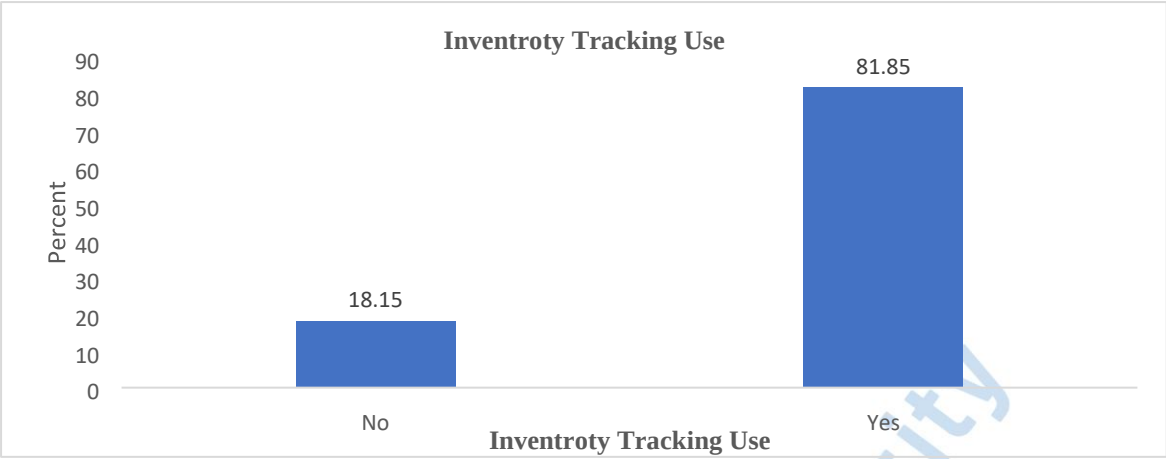


Figure 4.9: Inventory Tracking Use

The findings revealed that majority of the respondents 81.85% said there was inventory tracking use while 18.15% felt that there was no inventory tracking system in use.

4.5.2 Type of ICT used in the hospitals

The study sought to evaluate the types of ICTs used among the hospitals in Kisii County. The findings were recorded in Figure 4.10

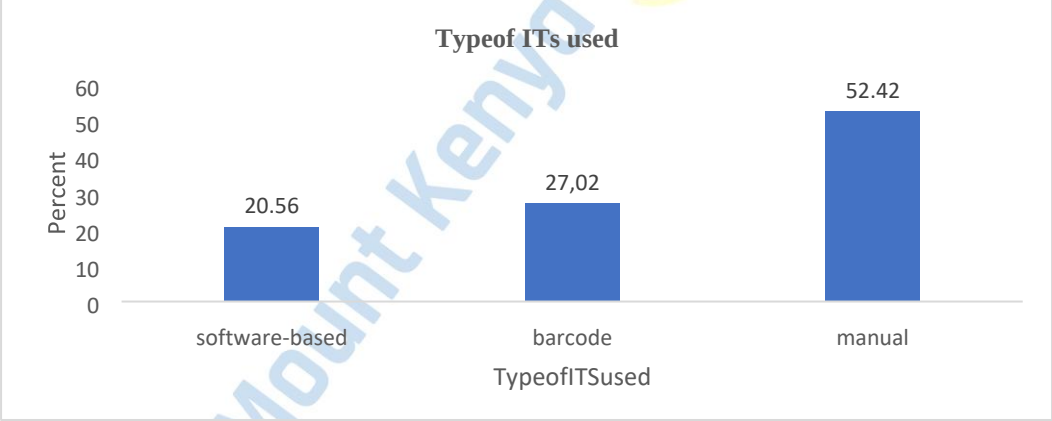


Figure 4.10: Type of ITs used

Figure 4.10 indicated that 52.42% of hospitals utilized manual methods for inventory management, whereas 27.02% employed barcode systems, and the remaining 20.56% relied on software-based systems. This highlights that a significant number of hospitals

in Kisii County continue to manage their inventory manually, which may increase the likelihood of inventory shrinkage.

4.5.2 Inventory Tracking Integration and Organizational Performance

The study sought to find establish the inventory tracking integration among hospitals in Kisii County Hospitals and Figure 4.10 recorded the findings from the respondents.

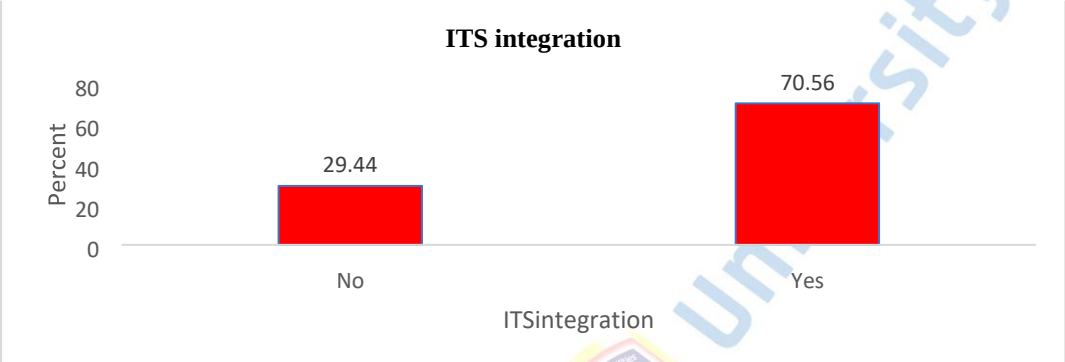


Figure 4.11: Inventory tracking integration

The findings revealed that a significant majority of respondents, 70.56%, reported the presence of inventory tracking integration, while 29.44% expressed indifference, suggesting that they perceived a lack of such integration. This divergence in opinions reflects a degree of uncertainty regarding inventory tracking practices in the hospitals of Kisii County.

4.6.1 Inventory Tracking Practices on Organizational Performance

The study sought to evaluate the effect of inventory tracking practices on organizational performance in hospitals located in Kisii County, Kenya. Participants were invited to share their opinions on this topic using a Likert scale from 1 to 5, with 1 representing Strongly Disagree and 5 representing Strongly Agree. The collected responses were documented and summarized in Table 4.3.

Table 4.3: Inventory tracking and organizational performance

Statement	N	Min	Max	Mean	Std. Dev
The current inventory tracking system provides accurate information about the quantity of items in stock.	248	1	5	4.38	1.167
The inventory tracking system updates in real-time, providing timely information on stock levels.	248	1	5	3.78	1.429
The inventory tracking system is user-friendly and easy to navigate.	248	1	5	2.21	1.171
The inventory tracking system seamlessly integrates with other organizational systems (e.g., sales, procurement).	248	1	5	2.17	1.096
The use of the inventory tracking system has led to a noticeable reduction in errors related to stock levels and order fulfillment.	248	1	5	2.08	1.088

Source: Field data (2024)

Table 4.3 indicates that most respondents agreed with a mean score of 4.38 (SD = 1.167) that the current inventory tracking system provides accurate information regarding the quantity of items in stock. Additionally, a majority agreed with a mean score of 3.78 (SD = 1.429) that the inventory tracking system updates in real-time, offering timely information on stock levels. However, the findings also revealed that most respondents disagreed with a mean score of 2.21 (SD = 1.171) on the userfriendliness and navigability of the inventory tracking system, suggesting that it requires specialized skills for effective use, leading to reluctance in its usage. Furthermore, a majority disagreed with a mean score of 2.17 (SD = 1.096) regarding the seamless integration of the inventory tracking system with other organizational systems, such as sales and procurement. Lastly, most respondents disagreed with a mean score of 2.08 (SD =

1.088) that the use of the inventory tracking system has significantly reduced errors related to stock levels and order fulfillment. Overall, the findings indicate that most respondents believe the accuracy of the inventory tracking system is not optimal, suggesting it does not significantly impact hospital performance.

4.7.1 Inventory Records Accuracy and Organizational Performance

The study sought to find out the effect of records accuracy and organizational performance of hospitals in Kisii County and the findings were recorded in Figure 4.12.

Figure 4.12: Inventory records accuracy

The results indicated that a significant majority of respondents, 58.06%, believe that inventory records are accurately maintained, while 41.91% feel that the records are not kept accurately. This divided opinion suggests a concern regarding the accuracy of the records, particularly given the substantial number of respondents expressing dissatisfaction with how the records are managed. Additionally, the study aimed to assess the effectiveness of communication regarding the accuracy of inventory records, with the findings illustrated in Figure 4.13.

4.7.2 Inventory Records Accuracy on Organizational Performance

The findings on the inventory accuracy communication were recorded in Figure 4.13

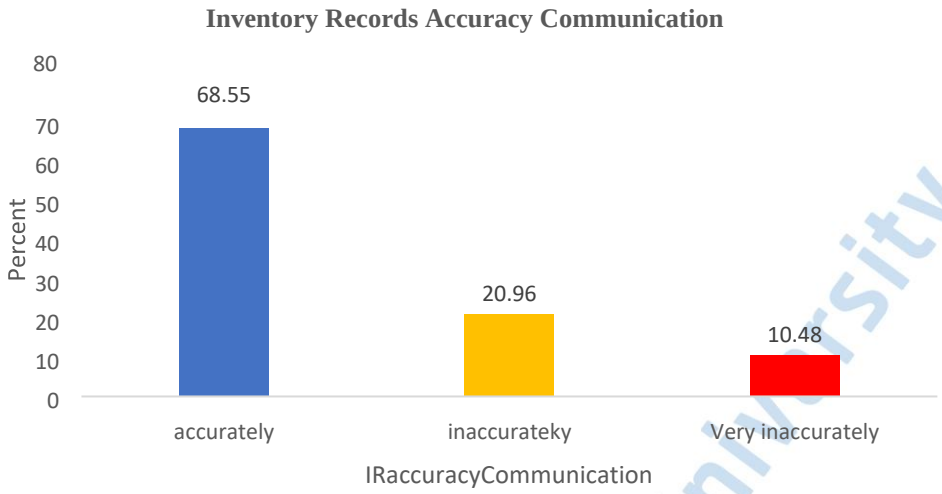


Figure 4.13: Inventory records accuracy communication

It was noted that the majority of respondents, 68.55%, felt that the accuracy of the inventory records was clearly communicated, whereas 20.96% believed it was inaccurate, and 10.48% thought it was very inaccurate.

4.7.3 Extent of Inventory records training

Further, the study sought to establish the extent of inventory records training. The findings were recorded in Figure 4.14.

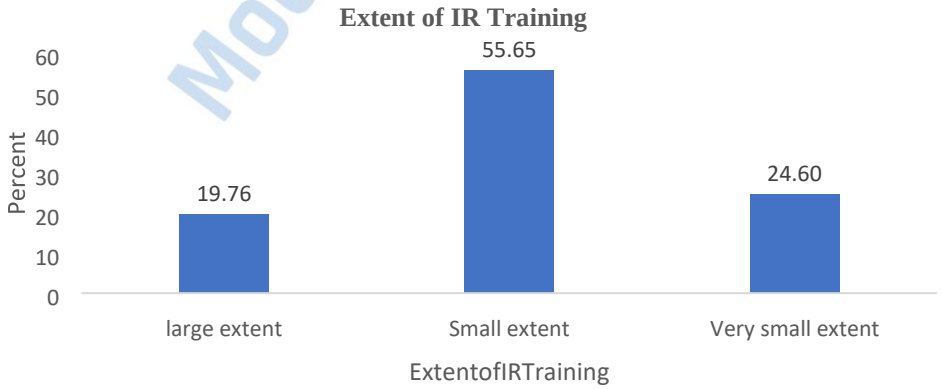


Figure 4.14: Extent of Inventory records training

Figure 4.14 observed that 55.65% were of the view that the extent the inventory records training was to a small extent and 24.6% with only 19.76% saying to large extent there is adequate training.

4.7.4 Inventory Records Accuracy on Organizational Performance

Participants were invited to share their opinions on this topic using a Likert scale from 1 to 5, with 1 representing Strongly Disagree and 5 representing Strongly Agree. The collected responses were documented and presented in Table 4.4.

Table 4.4: Inventory records accuracy on organizational performance

	N	Min	Max	Mean	Std. Dev
The current level of accuracy in our inventory records is satisfactory.	248	1	5	3.63	1.368
The accuracy of inventory records affects our ability to meet customer demand	248	1	5	3.11	1.479
Inaccurate inventory records contribute to financial losses due to stockouts or excess inventory.	248	1	5	3.07	1.442
Our organization has effective procedures in place to ensure inventory records accuracy.	248	1	5	2.74	1.551
Our current inventory management software/tools effectively support accurate record-keeping.	248	1	5	2.10	1.144

Source: Field data (2024)

Table 4.4 indicates that the majority of respondents agreed that the current level of accuracy in inventory records is satisfactory, with a mean score of 3.63 (SD = 1.368). However, most respondents were uncertain about whether the accuracy of these records impacted their ability to meet customer demand, reflected in a mean score of 3.11 (SD = 1.479). Additionally, many respondents were undecided regarding the extent to which

inaccurate inventory records contributed to financial losses from stock-outs or excess inventory, as evidenced by a mean score of 3.07 (SD = 1.442).

Furthermore, the data showed that most respondents disagreed with the notion that their hospitals had effective procedures in place to ensure the accuracy of inventory records, resulting in a mean score of 2.74 (SD = 1.551), suggesting a significant issue with inventory management. Lastly, a mean score of 2.10 (SD = 1.144) revealed that respondents were indifferent about the effectiveness of their hospitals' current inventory management software/tools in supporting accurate record-keeping, indicating a potential risk of inventory pilfering that could adversely affect hospital performance.

4.8.1 Supplier Collaboration on Organizational Performance of Hospitals

The study sought to establish the level of inventory records accuracy communication. The findings were recorded in Figure 4.

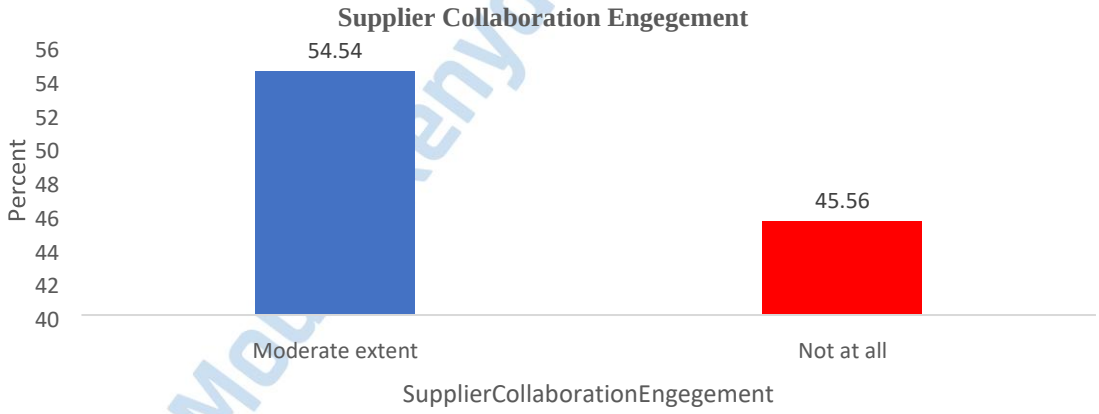


Figure 4.15: Supplier collaboration engagement

Figure 4.15 indicates that 54.54% of respondents reported that supplier collaboration was carried out to a moderate extent, while 45.56% stated that it was not conducted at all. This suggests that the level of supplier collaboration, which is expected to positively

influence organizational performance, may not be as effective due to its moderate engagement.

4.8.2 Collaborative Activities and Organizational Performance

The study sought to establish the level of collaborative activities. The findings were recorded in Figure 4.16.

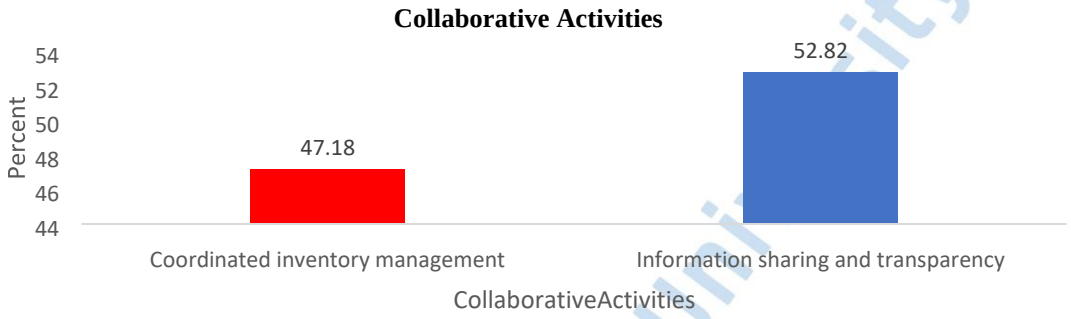


Figure 4.16: collaborative activities done at the organization

Figure 4.16 indicates that 52.83% of respondents believe that information sharing and transparency are the most frequently performed activities within the organization, while 47.18% view coordinated inventory management as such. This suggests that the organization excels in information sharing and transparency.

4.8.3 Inventory Management Practices on Organizational Performance

Participants were asked to express their views on this matter using a Likert scale ranging from 1 to 5, where 1 indicated Strongly Disagree and 5 indicated Strongly Agree. The responses obtained were recorded and summarized in Table 4.5.

Table 4.5: Supplier collaboration on organizational performance

Statement	N	Min	Max	Mean	Std. Dev
The communication channels with our suppliers are clear and effective	248	1	5	2.83	1.505

Our organization actively seeks feedback from suppliers to improve collaboration	248	1	5	2.79	1.441
There is a mutual understanding of goals and expectations between our organization and our suppliers	248	1	5	2.77	1.454
Our organization shares relevant information with suppliers to enhance joint decision-making	248	1	5	2.69	1.583
Collaboration with our suppliers has positively impacted the efficiency and effectiveness of our supply chain	248	1	5	2.67	1.594

Source: Field data (2024)

Table 4.5 indicates that respondents, with a mean score of 2.83 (SD = 1.505), disagreed that the communication channels with suppliers were clear and effective, suggesting that this could negatively impact supplier collaboration and, consequently, organizational performance in the hospitals of Kisii County. Additionally, the majority of respondents, with a mean score of 2.79 (SD = 1.441), disagreed that their hospitals actively sought feedback from suppliers to enhance collaboration. The findings also showed that most respondents, with a mean score of 2.77 (SD = 1.454), disagreed regarding the mutual understanding of goals and expectations between their organization and suppliers. Furthermore, the study found that a majority of respondents, with a mean score of 2.69 (SD = 1.583), disagreed that their hospitals shared relevant information with suppliers to improve joint decision-making. Lastly, most respondents, with a mean score of 2.67 (SD = 1.594), disagreed that collaboration with suppliers positively impacted the efficiency and effectiveness of their supply chain. Overall, these findings reflect a general disagreement among respondents regarding supplier collaboration.

4.9.1 Organizational Performance of Hospitals in Kisii County

Participants were asked to express their views on this matter using a Likert scale ranging from 1 to 5, where 1 indicated Strongly Disagree and 5 indicated Strongly Agree. The responses obtained were recorded and summarized in Table 4.6.

Table 4.6: organizational performance of hospitals in Kisii County.

Statement	N	Min	Max	Mean	Std. Dev
The hospital has effective optimal stock levels that fosters a positive organizational performance.	248	1	23	2.94	1.946
The hospital efficiently manages its financial resources to support optimal performance.	248	1	45	2.90	4.214
Communication within the hospital is clear and facilitates efficient information flow.	247	1	5	2.81	1.487
The hospital demonstrates a commitment to continuous improvement in its operations.	248	1	5	2.30	1.362
The hospital has a strong commitment to patient satisfaction and quality care.	248	1	5	2.09	1.245

Source: Field data (2024)

Table 4.6 indicates that most respondents, with a mean score of 2.94 (SD = 1.946), disagreed with the assertion that the hospital maintains effective optimal stock levels that promote positive organizational performance. This suggests that the existing stock levels do not contribute to enhancing the hospital's overall performance.

Additionally, the study found that a majority of respondents, with a mean of 2.90 (SD = 4.214), disagreed that the hospital effectively manages its financial resources to support optimal performance, indicating potential financial mismanagement due to inventory practices. Furthermore, most respondents disagreed with the statement that communication within the hospital is clear and facilitates efficient information flow,

reflected in a mean score of 2.81 (SD = 1.487), which points to a predictor of poor performance. The study also revealed that a majority of respondents, with a mean of 2.30 (SD = 1.362), disagreed that the hospital shows a commitment to continuous improvement in its operations. Lastly, most respondents expressed indifference regarding the hospital's commitment to patient satisfaction and quality care, with a mean of 2.09 (SD = 1.245), indicating an area of concern for hospital performance that requires attention.

4.3 Regression Analysis

Prior to analyzing the results of regression analysis, which focused on predicting inventory management practices and organizational performance in hospitals in Kisii County, the study implemented measures to ensure the model's validity. This process involved evaluating several key assumptions: the absence of influential outliers, the normal distribution of residuals, the lack of multicollinearity among predictors, homogeneity of variance (homoscedasticity), and the existence of linear relationships between the predictors and the dependent variables of inventory management practices and organizational performance. By addressing these assumptions, we aimed to enhance the model's reliability and interpretability, thereby providing more robust insights into the factors influencing inventory management practices and organizational performance in Kisii County.

Tests of Normality

Osborne (2013) highlights the significance of evaluating the distribution of regression residuals to ensure the validity of the predictive model. The normality of residuals is essential for reducing bias in regression coefficients. Thus, it is crucial for regression residuals to conform to a normal Gaussian distribution, which is indicated by skewness

and kurtosis values falling within acceptable limits. In this study, the normality of regression residuals was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests, following the recommendations of Loy, Follet, and Hoffman (2014) as well as Osborne (2013). Furthermore, the results of these statistical tests were supplemented by an analysis of the histogram of standardized residuals.

Table 4.7: Normality tests of assumption

	Kolmogorov-Smirnov[a]			Shapiro-Wilk df		
	Statistic	df	Sig.	Statistic		Sig.
IS5	.293	248	.054	.764	248	.054
IT5	.196	248	.051	.932	248	.051
IRA5	.127	248	.052	.912	248	.052
SC5	.232	248	.054	.845	248	.054
OP5	.179	248	.051	.812	248	.051

Source: Field data (2024)

The results in Table 4.7 revealed that the data set was parametric, as the KolmogorovSmirnov probability value was not statistically significant. According to the rule of thumb, an insignificant probability value indicates that the data set is parametric, which justified the use of linear regression for analysis. Additionally, to thoroughly verify this assumption, a Log_10 normality test was conducted, as presented in Table

4.8.

Table 4.8: Tests of Normality Log_10

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Log_10IS	.263	248	.051	.712	248	.051
Log_10IT	.258	248	.056	.853	248	.056
Log_10IRA	.115	248	.054	.915	248	.054
Log_10SC	.160	248	.053	.878	248	.053
Log_10OP	.112	248	.057	.931	248	.057

Source: Field data (2024)

To further validate the characteristics of the dataset, the results in Table 4 indicate that the dataset is parametric because the Kolmogorov-Smirnov probability value is not statistically significant. According to the rule of thumb, an insignificant probability value suggests that the dataset is parametric, which justifies the use of linear regression for data analysis. Based on these assumption tests, the decision was made to analyze the data using linear regression, as outlined below.

4.3.1 Inventory Shrinkage on Organizational Performance of Hospitals

Before conducting the linear regression analysis and generating inferential statistics, it was essential to verify that the data satisfied the assumptions of linearity. Therefore, the diagnostic tests presented in Figure 4.17 were performed.

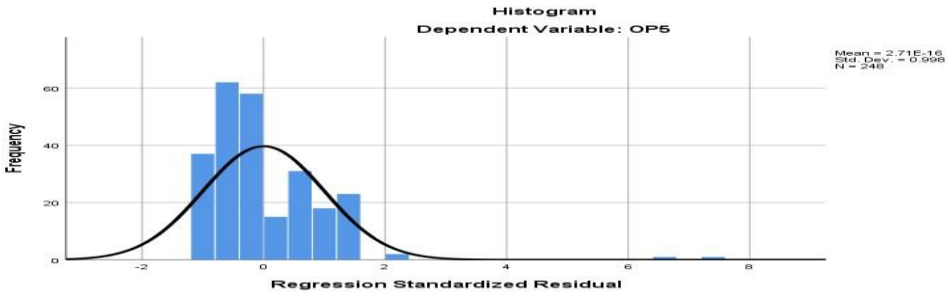


Figure 4.17: Histogram test for inventory shrinkage and performance

Figure 4.17 illustrates the evaluation of assumptions using histograms, focusing on whether the data distribution is approximately normal or symmetric, without any significant skewness or distortion. The histogram of residuals, which shows a normal distribution shape, indicates that the assumption is met, as shown in Figure 4.18.

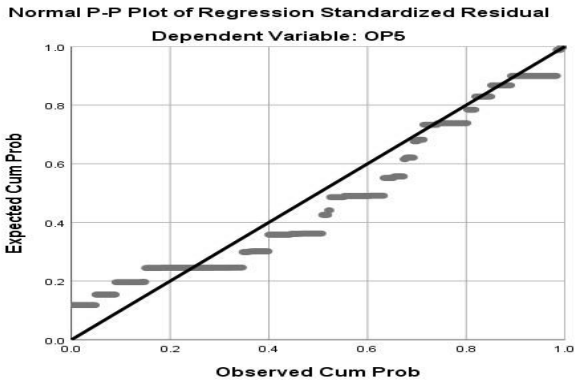


Figure 4.18: P-P Test for inventory shrinkage and organizational performance

A P-P plot provides a comprehensive visual representation of the relationship between two variables (Moore, Notz, & Fligner, 2013). A relationship is deemed linear when one variable increases at a rate comparable to the change of one unit in the other variable. A useful guideline for evaluating linearity in a P-P plot is that the line should nearly follow a 45-degree angle from left to right. This is demonstrated in the results of the P-P plot. Overall, it is concluded that the assumption of normality is satisfied, allowing for the linear regression analyses presented below.

The study performed a linear regression analysis to draw inferences from the descriptive analysis regarding the impact of inventory shrinkage factors on organizational performance in hospitals within Kisii County. The resulting statistics are detailed in Tables 4.9, 4.10, and 4.11.

Table 4.9: ANOVA for inventory shrinkage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	284.496	1	284.496	191.833	.000[b]
	Residual	364.826	246	1.483		
	Total	649.322	247			

Source: Field data (2022)

Table 4.9 shows that the ANOVA (F-Statistics) assesses the overall significance of the model. It indicates the levels of variability within the regression model, serving as a foundation for significance testing. The results affirm the significance of the regression model for the data, as evidenced by an ANOVA (F-statistic) value of 191.833 and an associated probability value of 0.000 ($F = 191.833$, $p < 0.05$), which is considered significant at the 5% level.

Table 4.10: Model summary for inventory shrinkage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.662[a]	.438	.436	1.21780	.438	191.833	1	246	.000	.908

Source: Field data (2024)

Table 4.10 indicates that the R^2 value is 0.438, suggesting that 43.8% of the variations in organizational performance can be attributed to the independent variable, inventory shrinkage, while the remaining 56.2% is accounted for by the error term. The adjusted R^2 value of 0.436 further reveals that 43.6% of the changes in organizational performance within hospitals in Kisii County are explained by inventory shrinkage, with the remaining 56.4% attributed to the error term. This indicates that the model demonstrates a good fit at 14.1% (Cohen, 1988).

Table 4.11: Coefficients of regression for inventory shrinkage

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	-.583	.243		-2.397	.017	-1.061	-.104		

IS5	.805	.058	.662	13.850	.000	.691	.919	1.000	1.000

Source: Field data (2024)

Table 4.11 displays the regression coefficients, focusing on the unstandardized coefficients that indicate the estimated values reflecting the magnitude of change, along with t-statistics used to assess the statistical significance of each regression coefficient in relation to the p-value. The findings indicate that the Pearson regression coefficient for inventory shrinkage practices was 0.805. This suggests that a unit increase in inventory shrinkage practices leads to an average increase of 0.805 units in organizational performance within hospitals in Kisii County, demonstrating a direct positive correlation between these practices and organizational performance. Additionally, the study found a calculated t-value of 13.850 for the relationship between inventory shrinkage practices and organizational performance, with a corresponding p-value of 0.000. Given that the p-value is less than 0.05 at the 5% significance level, the study concludes that inventory shrinkage practices significantly and positively impact organizational performance in hospitals in Kisii County. Consequently, the null hypothesis—stating that there is no significant effect of inventory shrinkage practices on organizational performance in these hospitals—is rejected since $\rho < 0.05$, leading to the acceptance of the alternative hypothesis that inventory shrinkage practices do significantly influence organizational performance.

The regression equation predicting organizational performance in hospitals in Kisii County based on inventory shrinkage practices is expressed as $Y = 0.583 + 0.805X$, indicating that inventory shrinkage practices have a significant positive effect on organizational performance ($B = 0.583$, $p < 0.05$).

From this analysis, we can conclude that IS5 is a strong and significant predictor of inventory shrinkage in the model. The positive coefficient suggests that increases in IS5 are associated with increased inventory shrinkage. The model shows no signs of multicollinearity issues, making the findings robust.

4.3.2 Inventory Tracking on Organizational Performance of Hospitals

Before conducting the linear regression analysis and generating inferential statistics, it was essential to verify that the data satisfied the assumptions of linearity. Therefore, the following diagnostic tests were performed, as illustrated in Figure 4.12.

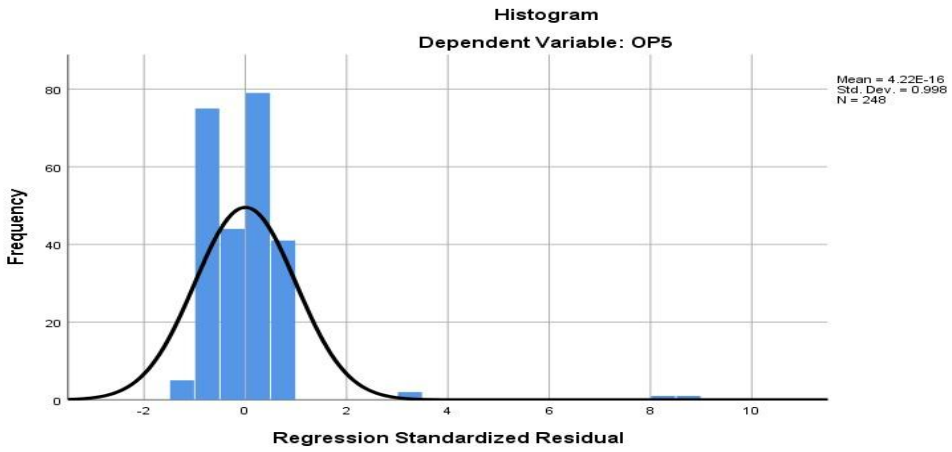


Figure 4.19: P-P Test for inventory tracking and organizational performance

Figure 4 illustrates the evaluation of assumptions using histograms, focusing on whether the data distribution appears to be approximately normal or symmetric, with minimal skewness or distortion. The histogram of residuals, which displays a shape characteristic of a normal distribution, confirms that this assumption holds true, as shown in Figure 4.20.

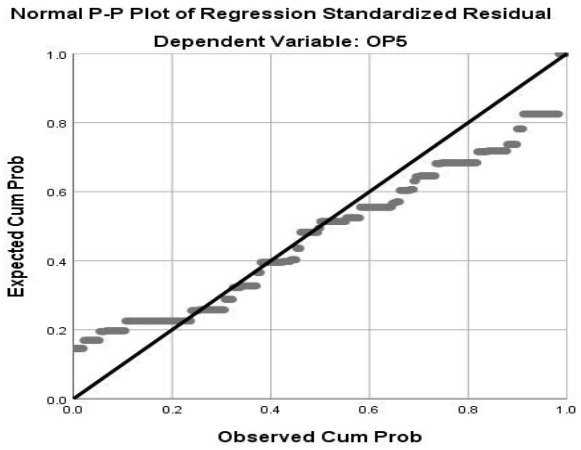


Figure 4.20: P-P Test for supplier collaboration and organizational performance A P-P plot provides a comprehensive visual representation of the relationship between two variables (Moore, Notz, & Flinger, 2013). A relationship is deemed linear when one variable increases at a rate that is approximately equal to the change of one unit in the other variable. A common guideline for evaluating linearity in a P-P plot is that the line should be nearly 45 degrees from left to right. This is demonstrated in the P-P plot results. Overall, it can be concluded that the assumption of normality is satisfied, allowing for the linear regression analyses presented in Tables 12, 13, and 14.

Table 4.12: ANOVA for inventory shrinkage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	408.616	1	408.616	417.603	.000[b]
	Residual	240.706	246	.978		
	Total	649.322	247			

Source: Field data (2024)

Table 4.12 shows that the ANOVA (F-Statistics) assesses the overall significance of the model. It reveals the levels of variability within the regression model, providing a foundation for significance tests. The results indicate that the regression model is significant for the data, as evidenced by an ANOVA (F-statistic) value of 417.603 and

a corresponding probability value of 0.000 (F = 417.603, p < 0.05), which is significant at the 5% level.

Table 4.13: Model summary for inventory tracking and performance

				Std. Error of the	R Square	Change Statistics				
Model	R	R Square	Adjusted R Square	Estimate	Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.793	.629	.628	.98918	.629	417.603	1	24	.000	1.385 [a]

Source: Field data (2024)

Table 4.13 indicates that the R^2 value is 0.629, suggesting that 62.9% of the variations in organizational performance can be attributed to the independent variable, inventory tracking, while the remaining 37.1% is accounted for by the error term. The adjusted R^2 value of 0.628 further reveals that 62.8% of the changes in organizational performance among hospitals in Kisii County are explained by inventory tracking, with the remaining 37.2% captured by the error term. This demonstrates that the model has a good fit, with an effect size of 14.1% (Cohen, 1988).

Table 4.14: Coefficients for inventory tracking and organizational performance

	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	-1.110	.193		-5.767	.000	-1.490	-.731		
IT5	1.187	.058	.793	20.435	.000	1.072	1.301	1.000	1.000

a. Dependent Variable: OP5

Source: Field data (2024)

Table 4.14 presents the regression coefficients, focusing on the unstandardized coefficients that indicate the estimated magnitude of change, along with the t-statistics used to assess the statistical significance of each regression coefficient in relation to the p-value. The findings reveal that the coefficient value for inventory tracking practices is -5.767, suggesting that an increase of one unit in inventory tracking practices is associated with a decrease in organizational performance in hospitals in Kisii County by 1.187 units. This indicates a direct negative relationship between inventory tracking practices and organizational performance in these hospitals. The study found that the computed t-value for the relationship between inventory tracking practices and organizational performance in hospitals in Kisii County was 5.767, with a corresponding p-value of 0.000. Since the p-value is less than 0.05 at the 5% significance level, the study concludes that inventory tracking practices have a significant negative impact on organizational performance in these hospitals. Therefore, the null hypothesis—stating that there is no significant effect of inventory tracking practices on organizational performance—was rejected, and the alternative hypothesis was accepted, indicating that inventory tracking practices significantly negatively affect organizational performance in hospitals in Kisii County.

The regression equation used to predict organizational performance in hospitals in Kisii County based on inventory tracking practices is expressed as $Y = -1.110 + 1.187X$, which further supports the finding that inventory tracking practices have a significant negative impact on organizational performance ($B = 0.577$, $p < 0.05$).

4.3.3 Inventory Records Accuracy on Organizational Performance of Hospitals

Prior to conducting the linear regression analysis and generating inferential statistics, it was essential to verify that the data satisfied the assumptions of linearity. Consequently, the following diagnostic tests were performed, as illustrated in Figure 4.21.

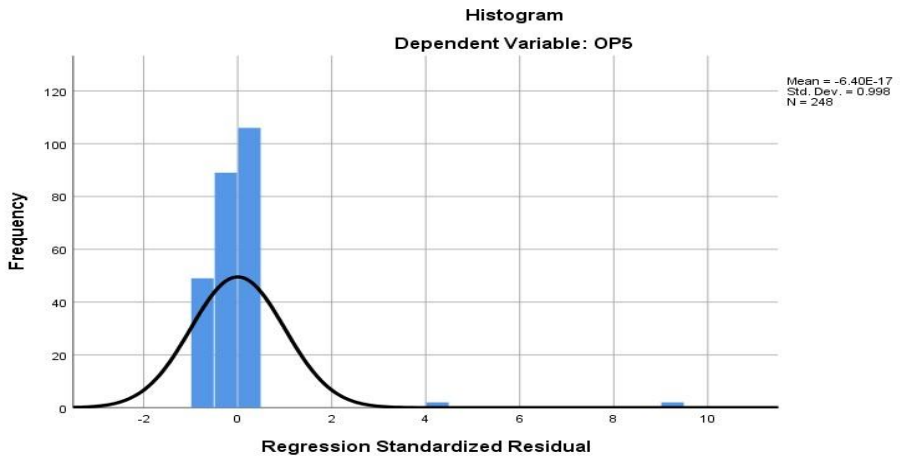


Figure 4.21: P-P Test for inventory records accuracy and organizational performance Figure 4.21 illustrates the assessment of assumptions using histograms by evaluating if the data distribution is approximately normal or symmetric, showing no significant skewness or distortion. The histogram of residuals, which exhibits a normal distribution shape, confirms that this assumption is met, as shown in Figure 4.22.

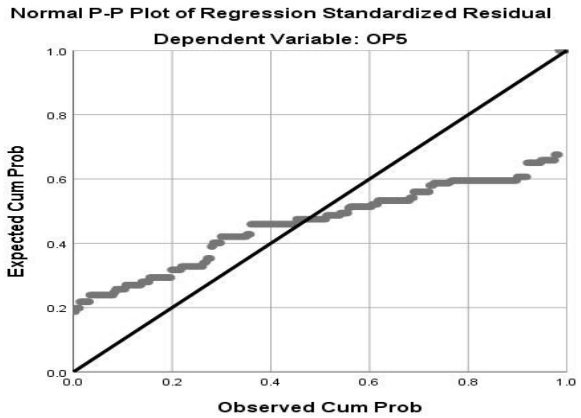


Figure 4.22: P-P Test for supplier collaboration and organizational performance A P-P plot provides a comprehensive visual representation of the relationship between two

variables (Moore, Notz, & Flinger, 2013). A linear relationship exists when the increase in one variable corresponds closely to a one-unit change in the other variable. A common guideline for evaluating linearity is that the P-P plot line should approximately follow a 45-degree angle from left to right. This pattern is evident in the results presented in the P-P plot. Overall, it can be concluded that the normality assumption is satisfied, allowing for the linear regression analyses shown in Tables 15, 16, and 17.

Table 4.15: ANOVA for inventory shrinkage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	471.448	1	471.448	652.014	.000[b]
	Residual	177.874	246	.723		
	Total	649.322	247			

Source: Field data (2022)

Table 4.18 shows that the ANOVA (F-Statistics) assesses the overall significance of the model. It reveals the variability levels within the regression model, providing a foundation for significance testing. The results indicate that the regression model is significant for the data, as evidenced by the ANOVA (F-statistic) value of 652.014 and an associated probability value of 0.000 ($F = 652.014$, $p < 0.05$), which is significant at the 5% level.

Table 4.16: Model summary for inventory records accuracy and performance

				Std. Error of the Estimate	Change Statistics				
Model	R	R Square	Adjusted R Square		R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.852[a]	.726	.725	.85033	.726	652.014	1	246	.000	1.885

a. Predictors: (Constant), IRA5

b. Dependent Variable: OP5

Source: Field data (2024)

Table 4.16 indicates that the R^2 value of 0.726 signifies that 72.6% of the variations in organizational performance can be attributed to the independent variable, inventory records accuracy, while 27.4% are accounted for by the error term. Additionally, the adjusted R^2 value of 0.725 suggests that 72.5% of the changes in organizational performance within hospitals in Kisii County are explained by records accuracy, with the remaining 27.5% attributable to the error term. This demonstrates a model that fits well, with a 14.1% effect size (Cohen, 1988).

Table 4.17: Regression coefficients for inventory records accuracy

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	-.239	.124		-1.928	.055	-.483	.005		
IRA5	1.034	.040	.852	25.535	.000	.954	1.113	1.000	1.000

a. Dependent Variable: OP5

Source: Field data (2024)

Table 4.17 displays the regression coefficients, focusing on the unstandardized coefficients that illustrate the estimated coefficients indicating the size or magnitude of change, along with the t-statistics that assess the statistical significance of each regression coefficient in relation to the p-value. The findings reveal that the coefficient value for inventory records accuracy factors is 1.034, suggesting that an average unit

increase in inventory records accuracy factors leads to an increase in organizational performance in hospitals in Kisii County by 1.034 units. This indicates a direct positive correlation between inventory records accuracy factors and organizational performance in these hospitals.

The study also determined that the calculated t-value for the relationship between inventory records accuracy factors and organizational performance was 1.034, with an accompanying p-value of 0.000. Since the p-value is less than 0.05 at a 5% significance level, it can be concluded that inventory records accuracy factors significantly and positively affect organizational performance in hospitals in Kisii County.

As a result, the null hypothesis—that there is no significant effect between inventory records accuracy factors and organizational performance in hospitals in Kisii County—was rejected, as $\rho < 0.05$. Instead, the alternative hypothesis was accepted, confirming that inventory records accuracy factors have a significant impact on organizational performance in hospitals in Kisii County.

The regression equation used to predict organizational performance in these hospitals based on inventory records accuracy factors is expressed as $Y = -0.239 + 1.034X$, which indicates that inventory records accuracy factors have a significant positive effect on organizational performance ($B = 1.034$, $p < 0.05$).

4.3.4 Supplier Collaboration on Organizational Performance of Hospitals

Before generating inferential statistics for linear regression analysis, it was essential to verify that the data satisfied the assumptions of linearity. Therefore, the diagnostic tests depicted in Figure 4.23 were conducted.

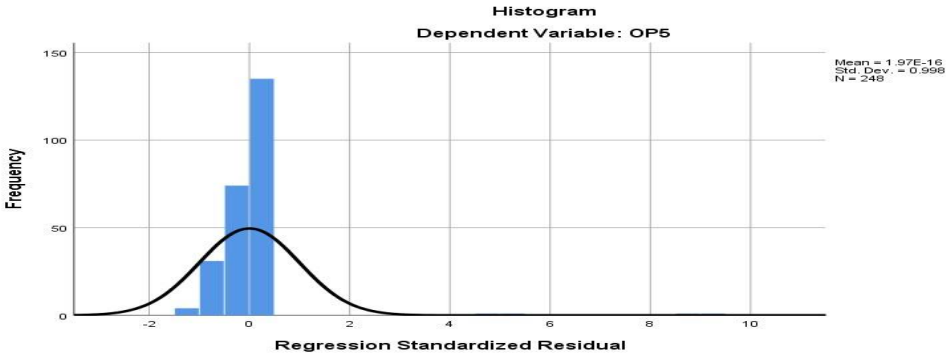


Figure 4.23: Histogram test for supplier collaboration and organizational performance

Figure 4.23 illustrates the assessment of assumptions using histograms by evaluating whether the data distribution is roughly normal or symmetric, with minimal skewness or distortion. The histogram of residuals, which exhibits a normal distribution shape, verifies that this assumption is met, as shown in Figure 4.24.

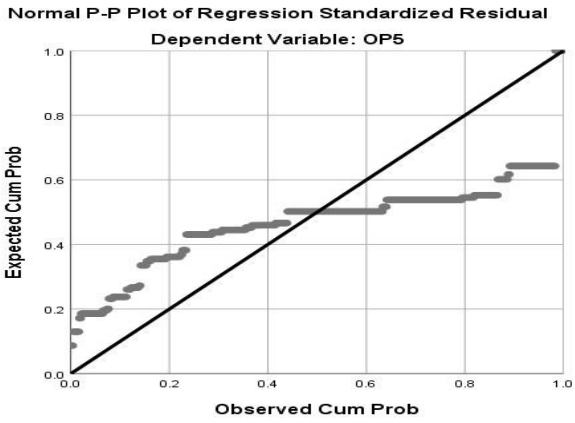


Figure 4.24: P-P Test for supplier collaboration and organizational performance

A P-P plot provides a comprehensive visual representation of the relationship between two variables (Moore, Notz, & Flinger, 2013). A linear relationship exists when an increase in one variable corresponds closely to a one-unit change in the other variable. As a general guideline, the line in a P-P plot should approximately follow a 45-degree angle from left to right, which is confirmed by the results presented in the P-P plot.

Overall, this indicates that the assumption of normality is satisfied, supporting the linear regression analyses in Tables 4.18, 19, and 20.

Table 4.18: ANOVA for inventory shrinkage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	469.426	1	469.426	641.921	.000[b]
	Residual	179.896	246	.731		
	Total	649.322	247			

Source: Field data (2024)

Table 4.18 shows that the ANOVA (F-Statistics) assesses the overall significance of the model. It reveals the levels of variability within the regression model, serving as a foundation for significance testing. The results indicate that the regression model is significant for the data, as evidenced by the ANOVA (F-statistic) value of 641.921 and its associated probability value of 0.000 ($F = 641.921$, $p < 0.05$), which is significant at the 5% level.

Table 4.19: Model summary for supplier collaboration and performance

				Std. Error of	Change Statistics				
Model	R	R Square	Adjusted R Square	the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.850[a]	.723	.722	.85515	.723	641.921	1	246	.000	1.859

a. Predictors: (Constant), SC5
b. Dependent Variable: OP5

Source: Field data (2024)

Table 4.19 indicates an R^2 value of 0.723, suggesting that 72.3% of the variations in organizational performance can be attributed to the independent variable, supplier collaboration, while the remaining 27.7% is accounted for by the error term. Additionally, the adjusted R^2 value of 0.722 reveals that 72.2% of the changes in

organizational performance within hospitals in Kisii County were explained by supplier collaboration, with the remaining 27.8% represented by the error term. This demonstrates a model with a good fit, as indicated by the 14.1% (Cohen, 1988). **Table 4.20: coefficient of regression for supplier collaboration**

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	.073	.114		.637	.525	-.152	.297		
SC5	.923	.036	.850	25.336	.000	.851	.995	1.000	1.000

a. Dependent Variable: OP5

Source: Field data (2024)

Table 4.20 presents the regression coefficients, highlighting the unstandardized coefficients that reflect the estimated values indicating the extent of change, alongside the t-statistics that assess the statistical significance of each regression coefficient in relation to the p-value. The findings reveal that the coefficient value for inventory records accuracy factors is 0.923, indicating that, on average, a one-unit increase in supplier collaboration results in an increase of 92.3 units in organizational performance within hospitals in Kisii County. This demonstrates a direct positive correlation between supplier collaboration and organizational performance in this context.

Additionally, the study found that the calculated t-value for the relationship between supplier collaboration and organizational performance in hospitals in Kisii County is 0.637, with a corresponding p-value of 0.000. Since the p-value is less than 0.05 at a 5% significance level, the study concludes that supplier collaboration significantly and positively impacts organizational performance in hospitals in Kisii County.

Consequently, the null hypothesis stating that there is no significant effect of supplier collaboration on organizational performance in hospitals in Kisii County was rejected, and the alternative hypothesis was accepted, confirming that supplier collaboration has a significant effect on organizational performance in this setting. The regression equation used to predict organizational performance in hospitals in Kisii County based on supplier collaboration is expressed as $Y = 0.073 + 0.923X$, indicating that supplier collaboration has a positive and significant effect on organizational performance ($B = 0.923$, $p < 0.05$).

4.4 Multiple Regression

Prior to conducting the multiple regression analysis and generating inferential statistics, it was essential to verify that the data fulfilled the assumptions of linearity.

Therefore, the diagnostic tests illustrated in Figure 4.25 were performed.

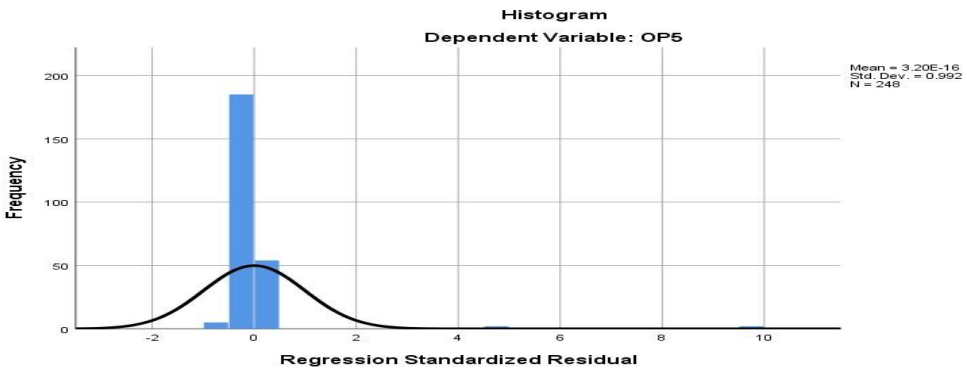


Figure 4.25: Histogram Test for multiple and organizational performance

Figure 4.25 for assessing assumptions through histograms involves examining whether the distribution of data appears approximately normal or symmetric without significant skewness or distortion. The histogram of residuals displaying a normal distribution shape confirms that the assumption is satisfied, as depicted in Figure 4.26.

Figure 4.26: P-P Test for multiple regression and organizational performance A P-P plot provides a comprehensive visual representation of the relationship between two variables (Moore, Notz, & Flinger, 2013). A relationship is deemed linear when the increase in one variable is approximately proportional to the change of one unit in the other variable. A common guideline for evaluating linearity in a P-P plot is that the line should extend at nearly a 45-degree angle from the left to the right. This criterion is satisfied, as demonstrated by the P-P plot results. Overall, it can be concluded that the assumption of normality is fulfilled.

Table 4.21: ANOVA for inventory shrinkage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	483.188	4	120.797	176.686	.000[b]
	Residual	166.135	243	.684		
	Total	649.322	247			

Source: Field data (2024)

Table 4.21 shows that the ANOVA (F-Statistics) assesses the overall significance of the model. It reveals the variability levels within the regression model, serving as a foundation for significance testing. The results indicate that the regression model is significant for the data, as evidenced by an ANOVA (F-statistic) value of 176.686, with

an associated probability value of 0.000 (F = 176.686, p < 0.05), which is significant at the 5% level.

Table 4.22: Model summary for multiple regressions

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.863[a]	.744	.740	.82685	.744	176.686	4	243	.000	2.018

Source: Field data (2024)

Table 4.22 indicates that the R^2 value is 0.744, suggesting that 74.4% of the variations in organizational performance can be attributed to the independent variables: inventory shrinkage, inventory tracking, inventory records accuracy, and supplier collaboration, with the remaining 25.6% accounted for by the error term.

Additionally, the adjusted R^2 value of 0.740 demonstrates that 74.0% of the changes in organizational performance in hospitals in Kisii County can be explained by these same variables, while the remaining 26.0% is represented by the error term. This indicates a model with a good fit, as reflected by the 14.1% value (Cohen, 1988).

Table 4.23: Coefficients for multiple regression and organizational performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	-.138	.189		-.734	.000	-.510	.233		
IS5	-.391	.120	-.321	-3.269	.001	-.626	-.155	.109	9.174
IT5	.607	.227	.406	2.680	.008	.161	1.054	.046	21.802
IRA5	.571	.252	.471	2.265	.004	.074	1.068	.024	41.044
SC5	.298	.180	.275	1.653	.100	-.057	.654	.038	26.233

Source: Field data (2024)

Table 4.23 presents the regression coefficients, focusing on the unstandardized coefficients that estimate the magnitude of change and the t-statistics, which assess the statistical significance of each regression coefficient in relation to the p-value. The study found that the coefficient for inventory shrinkage practices was -0.391, indicating that a one-unit increase in these practices results in an average decrease of 0.391 units in organizational performance in hospitals in Kisii County. This demonstrates a direct negative relationship between inventory shrinkage practices and organizational performance.

Additionally, the coefficient for inventory tracking practices was found to be 0.607, with a corresponding p-value of less than 0.05. This suggests that a one-unit increase in inventory tracking practices leads to an average increase of 0.607 units in organizational performance in hospitals in Kisii County, reflecting a direct positive relationship.

The study also revealed that the coefficient for inventory records accuracy practices was 0.571, with a p-value of less than 0.05, indicating that a one-unit increase in accuracy practices corresponds to an average increase of 0.571 units in organizational performance. This again shows a direct positive effect.

Furthermore, the coefficient for supplier collaboration practices was found to be 0.298, with a p-value greater than 0.05. This indicates that while a one-unit increase in supplier collaboration practices results in an average increase of 0.298 units in organizational performance, this effect is statistically insignificant.

The calculated t-value for the relationship between inventory management practices and organizational performance in hospitals in Kisii County was -0.734, with a pvalue of 0.001. Given that the p-value is less than 0.05, the study concludes that inventory management practices have a significant negative effect on organizational performance in these hospitals. Consequently, the null hypothesis—asserting no significant effect between inventory management practices and organizational performance—was rejected, supporting the alternative hypothesis that inventory management practices significantly negatively impact organizational performance.

The regression equation for predicting organizational performance in hospitals in Kisii County based on inventory management practices is expressed as $Y = -0.138 - 0.391X1 + 0.607X2 + 0.571X3 + 0.298X4$. This indicates a significant negative effect of inventory management practices on organizational performance ($B = -0.138$, $p < 0.05$). The study concludes that, in order of impact, inventory tracking has the most substantial effect on organizational performance, followed by inventory records accuracy, supplier collaboration, and inventory shrinkage practices.

4.5 Correlational Analysis

Evaluating the statistical significance of a computed correlation coefficient from a randomly selected sample provides insights into the likelihood of observing a similar coefficient in the overall population from which the sample originates (Bryman & Bell, 2011). In this research, correlation analysis was crucial, as it formed the basis for understanding the relationships among the study variables. It is essential to emphasize that correlation does not imply causation or influence, a significant consideration in this study. The aim was to identify the correlations between the variables under

examination. The Pearson correlation coefficient (r), which quantifies the linear relationship between two continuous variables, ranges from -1 to 1, where -1 signifies a perfect negative linear relationship, 0 denotes no linear relationship, and 1 represents a perfect positive linear relationship.

Table 4.24: Correlation analysis

		IS5	IT5	IRA5	SC5	OP5
IS5	Pearson Correlation	1	.933	.834	.771	.662
	Sig. (2-tailed)		.000	.000	.000	.000
	N	248	248	248	248	248
IT5	Pearson Correlation	.933	1	.937	.894	.793
	Sig. (2-tailed)	.000		.000	.000	.000
	N	248	248	248	248	248
IRA5	Pearson Correlation	.834	.937	1	.978	.852
	Sig. (2-tailed)	.000	.000		.000	.000
	N	248	248	248	248	248
SC5	Pearson Correlation	.771	.894	.978	1	.850
	Sig. (2-tailed)	.000	.000	.000		.000
	N	248	248	248	248	248
OP5	Pearson Correlation	.662	.793	.852	.850	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	248	248	248	248	248

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

Source: Field data (2024)

Table 4.24 indicates that the correlation between inventory shrinkage practices and inventory tracking practices was significant ($p < 0.05$) but exhibited a poor model fit at 93.3%. The findings also showed a significant correlation between inventory shrinkage practices and the accuracy of inventory records, with a p-value of < 0.05, indicating a moderate model fit with a Pearson moment correlation of 83.4%. Additionally, the study found a strong correlation

between inventory shrinkage practices and supplier collaboration practices, with a p-value of < 0.05, demonstrating a good model fit at 77.1%. Furthermore, inventory shrinkage practices were strongly correlated with supplier organizational performance, again with a p-value of < 0.05 and a good model fit at 66.2%. Lastly, inventory tracking practices showed a strong correlation with inventory record accuracy, with a p-value of < 0.05 and a good model fit at 93.3%.

CHAPTER FIVE

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study aimed to assess the impact of inventory management practices on the performance of hospitals in Kisii County, Kenya. It focused on four factors influencing inventory shrinkage: inventory shrinkage practices, inventory tracking methods, accuracy of inventory records, and supplier collaboration, all in relation to organizational performance. The analysis was conducted with a response rate of 91.85% from the total number of data collection tools distributed. The data collected represented a diverse demographic, including variations in age, gender, educational background, and job positions, all of which exhibited knowledge of inventory management. The chapter includes a thorough analysis of the response rate, the reliability of the research instrument, and the characteristics of the study variables. Additionally, it presents a summary of findings, conclusions, and recommendations based on the study results.

5.2 Summary of the Study Findings

Below is the thematic summary of the study, organized according to the variables examined in the research findings.

5.2.1 Inventory Shrinkage on Organizational Performance of Hospitals

The study aimed to determine the frequency of audits conducted at various levels of hospitals in Kisii County. The findings indicate that hospitals in Kisii County do not have a policy regarding inventory audits, which may lead to inventory shrinkage and adversely affect organizational performance. This observation suggests that the primary

contributor to shrinkage is theft of inventory in these hospitals. The research also highlighted that customer dissatisfaction and significant financial losses are the most severe consequences of inventory shrinkage in Kisii County hospitals. Furthermore, the study found that efforts to address the widespread theft of inventory were inadequate. Overall, most respondents agreed that inventory shrinkage affects organizational performance in the hospitals.

The regression analysis demonstrated that inventory shrinkage practices significantly predict organizational performance in Kisii County hospitals, explaining 43.8% of the variance in organizational performance, while 56.2% is attributed to other factors. The analysis revealed that for each unit increase in inventory shrinkage practices, there is an average decrease of 0.805 units in organizational performance. This indicates a direct negative relationship between inventory shrinkage practices and organizational performance in Kisii County hospitals, as represented by the model $Y = 0.583 - 0.805X$, confirming that inventory shrinkage has a significant negative impact on organizational performance ($B = -0.583$, $p < 0.05$).

5.3.2 Inventory Tracking on Organizational Performance of Hospitals

The study aimed to assess the extent of inventory tracking usage among hospitals in Kisii County. It found that while some form of inventory tracking system was in place, it was not implemented in all hospitals. Many facilities still relied on manual inventory management methods, which could lead to increased inventory shrinkage. Additionally, there was a lack of clarity regarding inventory tracking practices across hospitals in Kisii County. The research indicated that the existing inventory tracking systems were capable of providing accurate information about stock levels. Most respondents agreed

that the systems updated in real-time, offering timely insights into inventory. However, there was consensus that these systems were not user-friendly. The study also noted that the inventory tracking system was not well-integrated with other organizational systems, such as sales and procurement, and had not resulted in a significant reduction in errors related to stock levels and order fulfillment. Overall, the findings suggested that most respondents disagreed that the accuracy of inventory tracking was optimal, indicating it had minimal impact on hospital performance. The regression analysis results confirmed the significance of the regression model, supported by an ANOVA (F-statistic) value of 417.603 and an associated probability value of 0.000 ($F = 417.603$, $p < 0.05$), significant at the 5% level. This indicated that 62.9% of the variance in organizational performance could be explained by the independent variable, inventory tracking, while 37.1% was attributed to the error term. Consequently, the study established that the coefficient value for inventory tracking practices was -5.767, suggesting that a unit increase in inventory tracking practices would, on average, decrease organizational performance in hospitals in Kisii County by 1.187 units, demonstrating a direct negative relationship between inventory tracking practices and organizational performance.

5.4.3 Inventory Records Accuracy and Organizational Performance

The study aimed to investigate the impact of records accuracy on the organizational performance of hospitals in Kisii County. It was noted that there is a lack of clarity regarding the accuracy of inventory records, as they are not consistently maintained. Moreover, it was found that any communication about inventory accuracy was often superficial. Additionally, the study indicated that staff training in inventory management was not as thorough as anticipated.

The study found that the current accuracy level of inventory records was satisfactory, and that staff believed this accuracy impacted their ability to meet customer demand. However, most respondents disagreed that their hospitals had effective procedures to ensure accurate inventory records, indicating issues with inventory management. This suggests that the current inventory management software and tools may be inadequate for maintaining accurate records, potentially leading to inventory theft and negatively affecting hospital performance.

Regression analysis indicated that the regression model was significant, as shown by the ANOVA (F-statistic) value of 652.014 and a corresponding probability value of 0.000 ($F = 652.014$, $p < 0.05$), which was significant at the 5% level. The study also revealed that 72.6% of the variation in organizational performance could be explained by the independent variable, inventory records accuracy, while 27.4% was attributed to the error term. Furthermore, the coefficient for inventory records accuracy was found to be 1.034, indicating that a one-unit increase in inventory records accuracy factors is associated with a decrease in organizational performance in hospitals in Kisii County by 1.034 units. This highlights a direct negative relationship between inventory records accuracy factors and organizational performance in these hospitals.

5.5.4 Supplier Collaboration and Organizational Performance of Hospitals

The study aimed to assess the accuracy of inventory records communication. The results indicated that the level of supplier collaboration was moderate, suggesting a limited impact on organizational performance among hospitals in Kisii County.

Additionally, the hospitals demonstrated good practices in information sharing and transparency, which, when compared to customer satisfaction rates, could be perceived as merely formal communication of theoretical inventory records. The study also highlighted a lack of clarity in communication with suppliers, which negatively affected supplier collaboration and, consequently, organizational performance in these hospitals. Furthermore, it was found that hospitals in Kisii County did not actively seek feedback from suppliers to enhance collaboration. While there was a mutual understanding of goals and expectations between hospitals and suppliers, relevant information-sharing practices needed improvement to facilitate joint decision-making. Ultimately, there was a general consensus that collaboration with suppliers positively influenced supply chain efficiency and effectiveness, although the overall impact of supplier collaboration on organizational performance was limited.

From the regression analysis, the results confirmed the significance of the regression model for the collected data, as indicated by the ANOVA (F-statistic) value of 641.921 and an associated probability value of 0.000 ($F = 641.921$, $p < 0.05$), which was significant at the 5% level. The study found that when all other factors were held constant, 72.3% of the variations in organizational performance were explained by the independent variable of supplier collaboration, while 27.7% was attributed to the error term. The study established a supplier collaboration coefficient value of 0.923, indicating that a one-unit increase in supplier collaboration was associated with an average increase of 92.3 units in organizational performance for hospitals in Kisii County, demonstrating a direct positive effect of supplier collaboration on organizational performance.

5.2.5 Organizational Performance of Hospitals in Kisii County

The study aimed to assess organizational performance in hospitals located in Kisii County, Kenya. Findings indicated that hospitals in this region have struggled to maintain effective optimal stock levels, which are essential for positive organizational performance. Additionally, the research identified inefficiencies in the management of financial resources, hindering optimal performance. A lack of clear communication flow was also noted, which negatively impacted the efficiency of information exchange and overall hospital performance. Furthermore, the majority of hospitals did not demonstrate a commitment to continuous operational improvement, nor did they prioritize patient satisfaction and quality care—factors indicative of poor performance that require attention.

Regression analysis confirmed the significance of the model for the data, as evidenced by the ANOVA (F-statistic) value of 176.686 and a corresponding probability value of 0.000 ($F = 176.686$, $p < 0.05$), significant at the 5% level. The findings revealed that 74.4% of the variance in organizational performance could be attributed to independent variables such as inventory shrinkage, inventory tracking, inventory records accuracy, and supplier collaboration, while 25.6% was attributed to the error term.

The analysis further indicated that the calculated t-value for the relationship between inventory management practices and organizational performance in hospitals in Kisii County was -0.734, with a p-value of 0.001. Given that the p-value is less than 0.05, the study concludes that inventory management practices have a significant negative impact on organizational performance in these hospitals.

5.3 Conclusions

The study finds that inventory management practices significantly negatively affect organizational performance in hospitals in Kisii County. It also identifies inventory shrinkage as a significant negative predictor of organizational performance in the same hospitals. Furthermore, the research reveals that inventory tracking practices directly negatively impact organizational performance. Additionally, the accuracy of inventory records is a significant negative predictor of organizational performance in hospitals in Kisii County. Lastly, the study concludes that supplier collaboration positively influences organizational performance in these hospitals.

5.4 Recommendations

Based on the study conclusions, the following recommendations are suggested as described below.

5.4.1 Inventory shrinkage practices and hospitals performance

The study suggests that the duty bearers and hospital management should invest in advanced inventory management software that enables real-time tracking of inventory levels, provides alerts for low stock, and automates replenishment processes. Additionally, they should implement barcode or RFID technology to enhance accuracy in inventory tracking and minimize shrinkage caused by human error or theft.

Furthermore, the study recommends that the county government should establish comprehensive training programs for hospital staff involved in inventory management. These programs should emphasize the significance of accurate recordkeeping, proper handling of supplies, and recognizing signs of shrinkage. A culture of accountability

and transparency should be encouraged by motivating employees to report any discrepancies or suspicious activities related to inventory.

Security protocols within hospital premises should be strengthened, including the installation of surveillance cameras, access control systems, and regular patrols by security personnel in sensitive areas such as storage rooms and supply corridors. Regular audits and spot checks can help deter theft and unauthorized access to inventory, and strict consequences should be enforced for individuals found guilty of misconduct.

Clear and standardized policies for inventory management should be developed, outlining procedures for receiving, storing, and dispensing supplies, as well as protocols for regular inventory counts and reconciliations. These measures will ensure compliance with regulatory requirements and industry best practices, minimizing the risk of shrinkage and maintaining accurate records.

Partnerships with suppliers and vendors should be strengthened to improve order fulfillment accuracy, reduce lead times, and negotiate favorable terms for bulk purchases and consignment arrangements. Implementing Vendor Managed Inventory (VMI) programs or Just-In-Time (JIT) inventory systems can optimize stock levels and reduce excess inventory that may be prone to shrinkage.

Periodic reviews of inventory management policies and procedures should be conducted to adapt to changing operational needs, technological advancements, and emerging threats to inventory security. This can be accomplished by soliciting feedback from frontline staff, department managers, and stakeholders to identify areas for improvement and refine inventory control strategies accordingly. By implementing

these recommendations, hospitals can mitigate the effects of inventory shrinkage on organizational performance and ensure the continuous delivery of quality healthcare services to patients.

5.4.2 Inventory Tracking on Organizational Performance of Hospitals

The study suggests that the County Government of Kisii, along with the relevant hospital management, should take the following actions:

Implement modern inventory management systems that incorporate technologies such as barcode scanning, RFID, or other automated tracking methods. These systems will help streamline inventory processes, minimize manual errors, and provide real-time insights into stock levels, ultimately enhancing efficiency and achieving cost savings.

Develop uniform protocols and procedures for inventory management across all hospital departments. This standardization will ensure consistent tracking methods, inventory levels, and reorder points, leading to optimized inventory utilization and reduced waste.

Offer thorough training programs for hospital staff involved in inventory management. Training should encompass proper handling of medical supplies, effective inventory recording techniques, and proficient use of inventory management software to enhance staff competency and accuracy.

Utilize data analytics tools to analyze historical consumption patterns and forecast future demand for medical supplies. By employing predictive analytics, hospitals can optimize

inventory levels, avoid stockouts and overstocking, and ensure the timely availability of essential supplies.

Build strong relationships with suppliers and distributors to streamline procurement processes and enhance supply chain efficiency. Consider developing Vendor Managed Inventory (VMI) or consignment stock agreements to transfer inventory management responsibilities and alleviate the administrative burden on hospital staff.

Identify and monitor KPIs related to inventory management, such as inventory turnover ratio, stock-out rate, and carrying costs. Regularly evaluate performance against these indicators to pinpoint areas for improvement and assess the impact of inventory management initiatives on overall organizational performance.

Promote a culture of ongoing improvement by regularly reviewing inventory management strategies and adapting them to meet changing organizational needs and industry trends. Actively seek feedback from frontline staff and stakeholders to identify challenges and opportunities for optimization.

5.4.3 Inventory Records Accuracy and Organizational Performance

The study suggests that the County Government of Kisii and the relevant hospital management should take several steps to improve inventory management. First, they should implement advanced inventory management software that utilizes barcode or RFID technology. This would enhance accuracy by automating data entry and minimizing human errors. It is essential to evaluate different software options and choose one that aligns with the organization's requirements and budget.

Furthermore, the county should provide comprehensive training programs for employees involved in inventory management. This training will ensure staff members understand the

significance of accurate record-keeping and become proficient in using the inventory management systems (Rahimi et al., 2019). Regular refresher courses can be instituted to reinforce their knowledge and skills.

Establishing clear and standardized procedures for recording, tracking, and updating inventory data is also vital. Standard Operating Procedures (SOPs) should define responsibilities, workflows, and guidelines for addressing discrepancies or exceptions. These SOPs must be regularly reviewed and updated to align with any changes in processes or technology.

To enhance inventory accuracy, the county should replace or complement periodic physical inventories with ongoing cycle counting. This systematic approach involves assigning dedicated staff or teams to conduct regular counts of specific inventory items, enabling the prompt identification and correction of discrepancies.

Additionally, fostering strong communication and collaboration with suppliers is crucial for improving the accuracy of inbound inventory data. Implementing processes that facilitate real-time information sharing regarding orders, deliveries, and returns can help reduce discrepancies and prevent stock-outs.

It is also recommended to establish key performance indicators (KPIs) to monitor inventory accuracy and its impact on organizational performance. Metrics such as inventory accuracy rate, order fulfillment rate, and frequency of stock-outs can provide valuable insights into areas needing improvement and assess the effectiveness of the implemented strategies.

Lastly, benchmarking inventory management practices against industry standards and leading organizations can reveal opportunities for enhancement. Analyzing successful case

studies and adopting proven strategies will optimize inventory accuracy and overall organizational performance.

5.4.4 Supplier Collaboration and Organizational Performance of Hospitals

The study recommends that the County Government of Kisii, along with the relevant hospital management, take several actions to improve supplier relationship management (SRM). First, they should develop and implement strong SRM processes to promote closer collaboration with key suppliers. This includes establishing clear communication channels and holding regular meetings to share information, resolve issues, and align objectives between hospitals and suppliers.

Additionally, investment in technology and data-sharing platforms is essential. By utilizing technology-enabled systems such as electronic procurement and supply chain management software, the hospitals can facilitate seamless data exchange and collaboration with suppliers. They should also consider leveraging data analytics tools to evaluate supplier performance metrics and identify areas for enhancement in collaboration and efficiency.

Co-creation of performance metrics with suppliers that align with the organizational goals is also crucial. Emphasizing aspects like quality, cost, delivery reliability, and innovation will help in this regard. A balanced scorecard approach can be implemented to comprehensively assess supplier performance and drive ongoing improvements in collaboration and overall organizational performance.

Moreover, collaboration with suppliers to develop contingency plans and risk mitigation strategies is necessary to address potential supply chain disruptions, including natural disasters, geopolitical events, or pandemics. This may involve

diversifying the supplier base and establishing alternative sourcing options to minimize reliance on single-source suppliers, thereby enhancing supply chain resilience.

The study further advises that the duty bearer should promote collaboration and knowledge sharing across various hospital departments, including procurement, supply chain, operations, and quality assurance. Encouraging cross-functional teams to work together with suppliers can lead to innovative solutions, streamlined processes, and improved overall organizational performance.

To enhance suppliers' capabilities in areas like quality management, lean manufacturing, and innovation, the duty bearer should provide training and capacitybuilding programs. Additionally, implementing incentive and recognition schemes can motivate suppliers to contribute positively to organizational performance improvements and collaboration efforts.

Lastly, it is important for the duty bearer to conduct regular performance review meetings with suppliers to evaluate the effectiveness of collaboration initiatives and pinpoint opportunities for further enhancement. Gathering feedback from both internal stakeholders and external partners will help assess the impact of supplier collaboration on organizational performance and identify areas for refinement.

5.5 Areas for Further Research

The study recommends conducting further research through longitudinal studies to evaluate the long-term impacts of changes in inventory management practices on key organizational performance indicators, such as financial performance, patient satisfaction, and quality of care within hospitals. By tracking trends over time, this

research could identify patterns of improvement or stagnation and support informed strategic decision-making.

Additionally, the study advocates for a comparative analysis aimed at promoting cross-sectoral learning by examining inventory management practices from other industries, such as manufacturing, retail, and logistics, and adapting relevant insights to the healthcare context. This research could investigate transferable concepts, innovative technologies, and best practices that have effectively optimized inventory management and enhanced organizational performance in various sectors.

Furthermore, the study suggests exploring the feasibility and advantages of implementing patient-centric inventory management strategies in hospitals. This research could assess how aligning inventory levels with patient demand and treatment pathways can improve resource utilization, reduce waste, and ultimately enhance patient outcomes.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR MIDDLE LEVEL MANAGERS

I kindly request you to assist with some information by filling this questionnaire. The information you will give will be treated with utmost confidentiality and will be used for purposes of this study only. Do not write your name or the name of your institution. Please answer the questions as honestly and truthfully as possible by ticking and writing in the spaces provided.

Section 1: Demographic Information

1. Age: 18-25 [ ] 26-35 [ ] 36-45 [ ] 46-55 [ ] 55[ ]

2. Gender: Male [ ] Female [ ]

3. Position/Role: Administrative Staff [ ] Medical Staff [ ] Logistics/Supply Chain Staff [ ]

Other (please specify) _____

4. How would you describe the overall inventory management practices in your organization? Excellent [ ] Good [ ] Fair [ ] Poor [ ]

5. How frequently does your organization conduct inventory audits?

Daily [ ] Weekly [ ] Monthly [ ] Quarterly [ ] Annually[ ] Other (please specify)

Section 3: Inventory Shrinkage Assessment

6. How familiar are you with the term "inventory shrinkage"?

Very familiar [ ] Somewhat familiar [ ] Neutral [ ] Somewhat unfamiliar [ ] Very unfamiliar [ ]

7. Have you observed any instances of inventory shrinkage in your organization in the past 12 months? Yes [ ] No [ ]

If yes, please briefly describe the extent and nature of the inventory shrinkage incidents……

……

8. What factors do you believe contribute to inventory shrinkage in your organization? (Select all that apply)

Theft [ ] Administrative errors [ ] Supplier errors [ ] Employee errors [ ] System glitches [ ] Other (please specify)……

9. How do you perceive the impact of inventory shrinkage on your organization? (Select all that apply)

Financial loss [ ] Customer dissatisfaction [ ] Stockouts [ ] Increased operational costs [ ] Reputational damage [ ] Other (please specify)……

11. How effectively do you think your organization addresses the identified causes of inventory shrinkage?

Very effectively [ ] Somewhat effectively [ ] Neutral [ ] Somewhat ineffectively[ ]

Very ineffectively [ ]

12. What measures does your organization currently employ to prevent or mitigate inventory shrinkage?……..……
……

13. Thank you for participating in this survey. Your input is valuable in understanding the perceived impact of inventory shrinkage in your organization. Please indicate your level of agreement with the following statements. Please rate each statement on a scale of 1 to 5, where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree.

Statement	1	2	3	4	5
The organization experiences significant financial losses due to inventory shrinkage					
Inventory shrinkage negatively impacts customer satisfaction and loyalty					
The organization has effective measures in place to detect and prevent inventory shrinkage					
Employees are adequately trained to handle inventory management, reducing the likelihood of shrinkage					
The organization regularly conducts audits to assess and address inventory shrinkage issues					

Objective 2: Inventory Tracking System

14. Do you currently use an inventory tracking system?

Yes [ ] No [ ]

If yes, please specify the type of inventory tracking system you use (e.g., Manual, [ ] Barcode [ ] Scanning, [ ] RFID, [ ] Software-based) [ ]

15. How often is your inventory updated?

Daily [ ] Weekly [ ] Monthly [ ] Quarterly [ ] Annually [ ]

Other (please specify)…….

16. Are you considering or currently integrating advanced technologies (e.g., IoT, AI) into your inventory tracking system?

Yes [ ] No [ ] Considering [ ]

17. Here's a five-point Likert scale questionnaire on inventory tracking: Please rate each statement on a scale of 1 to 5, where: 1 = Strongly Disagree,2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree.

Statement	1	2	3	4	5
The current inventory tracking system provides accurate information about the quantity of items in stock.					
The inventory tracking system updates in real-time, providing timely information on stock levels.					
The inventory tracking system is user-friendly and easy to navigate.					
The inventory tracking system seamlessly integrates with other organizational systems (e.g., sales, procurement).					
The use of the inventory tracking system has led to a noticeable reduction in errors related to stock levels and order fulfillment.					

Objective 3: Inventory Records Accuracy

18. On a scale of 1 to 5, with 1 being extremely inaccurate and 5 being extremely accurate, how would you rate the overall accuracy of our inventory records?

Extremely inaccurate

[ ] Inaccurate [ ] Undecided [ ] Extremely accurate [ ] Accurate [ ]

21. How effectively do you think the accuracy of inventory records is communicated across different departments?

Very inaccurate [ ] Inaccurate [ ] Accurately [ ] Very accurately [ ]

27. To what extent would you say there are training on how to accurately update and maintain inventory records?

Very small extent [ ] Small extent [ ] Large extent [ ] Very extent [ ]

28. Thank you for participating in this survey. Your feedback is essential for understanding the impact of inventory records accuracy on various aspects of business operations. Please respond to the following statements by indicating your level of agreement or disagreement. Strongly Disagree (1) Disagree (2) Neutral (3) Agree (4) Strongly Agree (5).

Statement	**1**	**2**	**3**	**4**	**5**
The current level of accuracy in our inventory records is satisfactory.					
The accuracy of inventory records affects our ability to meet customer demand					
Inaccurate inventory records contribute to financial losses due to stockouts or excess inventory.					
Our organization has effective procedures in place to ensure inventory records accuracy.					
Our current inventory management software/tools effectively support accurate record-keeping.					

Section: Supplier Collaboration

29. To what extent does your organization engage in collaboration with suppliers?

[ ] Not at all [ ] Moderate extent [ ] High extent [ ] Very high extent

30. Which of the following collaborative activities does your organization participate in with its suppliers? (Check all that apply)

[ ] Joint product development [ ] Information sharing and transparency

[ ] Coordinated inventory management [ ] Co-investment in technology or processes

[ ] Joint cost reduction initiatives [ ] Other (please specify)

31. What challenges or obstacles do you encounter when trying to collaborate with suppliers?

……

……

33. Thank you for participating in this survey. Your feedback is essential for understanding the impact of supplier relations on organizational performance in the hospitals in kisii county. Please respond to the following statements by indicating your level of agreement or disagreement. Strongly Disagree (1) Disagree (2) Neutral (3) Agree (4) Strongly Agree (5).

Statement	**1**	**2**	**3**	**4**	**5**
The communication channels with our suppliers are clear and effective					
Our organization actively seeks feedback from suppliers to improve collaboration					
There is a mutual understanding of goals and expectations between our organization and our suppliers					
Our organization shares relevant information with suppliers to enhance joint decision-making					
Collaboration with our suppliers has positively impacted the efficiency and effectiveness of our supply chain					

Section D: Organizational Performance

38. Thank you for participating in this survey. Your feedback is essential for understanding the organizational performance in the hospitals in kisii county. Please respond to the following statements by indicating your level of agreement or disagreement. Strongly Disagree (1) Disagree (2) Neutral (3) Agree (4) Strongly Agree (5).

Statement	**1**	**2**	**3**	**4**	**5**
The hospital has effective optimal stock levels that fosters a positive organizational performance.					
The hospital efficiently manages its financial resources to support optimal performance.					

Communication within the hospital is clear and facilitates efficient information flow.					
The hospital demonstrates a commitment to continuous improvement in its operations.					
The hospital has a strong commitment to patient satisfaction and quality care.					

APPENDIX II: ERC CERTIFICATE

Mount Kenya University

REF: **MKU/ISERC/3678**
TO: **FIONA OKENAGWA**

Date: 30 April 2024

REG: **MPSM/2021/80766**

Dear Sir/Madam,

RE: INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE IN HOSPITALS IN KISII COUNTY, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2722.** The approval period is **30/04/2024 - 29/04/2025.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

APPENDIX III: UNIVERSITY APPROVAL CONSENT

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MPSM/2021/80766

3rd May, 2024

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: FIONA OKENAGWA – REGISTRATION NO. MPSM/2021/80766

The purpose of this letter is to introduce the above named student who is pursuing **Master of Science in Procurement and Supplies Management** in the Department of **Management** in the **School of Business and Economics.**

The title of the research is **"Inventory Management Practices and Organizational Performance in Hospitals in Kisii County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **May 2024, and July 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P.O. Box 342-01000, THIKA
Office of the Director
Graduate Studies

Dr. Samuel M. Karenga, Ph.D
Director, Graduate Studies
Enc.

APPENDIX IV: RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **607092**

Date of Issue: **22/May/2024**

RESEARCH LICENSE

This is to Certify that Ms.. FIONA OKENAGWA of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kisii on the topic: INVENTORY MANAGEMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE IN HOSPITALS IN KISII COUNTY, KENYA for the period ending : 22/May/2025.

License No: **NACOSTI/P/24/35478**

607092

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

APPENDIX V: AUTHORITY TO COLLECT DATA

KISII COUNTY GOVERNMENT
MINISTRY OF HEALTH
OFFICE OF THE COUNTY DIRECTOR OF HEALTH

Telegramme "Medical"
Telephone: 0721422400/0753122723
E-Mail: kisiicountyhealthcoordinator@gmail.com
When replying quote:
REF: KS/C/HS/42 VOL.III/ (47)

Kisii County
P.O Box 92 – 40200,
KISII

Date: 14TH March, 2024

TO WHOM IT MAY CONCERN

RE: AUTHORITY TO CARRY OUT RESEARCH –
FIONA OKENAGWA – ADM. NO. MPSM/2021/80766

The above named is a student at Mount Kenya University undertaking a Degree in Master of Science in Procurement. She has been authorized to carry out a study on ***"Inventory Management Practices and Organizational Performance in Hospitals"*** in Kisii County.

This is after the Kisii County Research Committee has gone through the student's proposal on the above title and approved it for the study at Kisii County.

The study will be carried out subject to adherence to the laid down procedures. Confidentiality of the study subjects should be observed by the researcher who should submit the final data to the County Research Unit for retention and use.

The purpose of this letter is therefore to request the relevant facilities to accord the researcher the necessary assistance.

Thank you.

KISII COUNTY HEALTH DIRECTOR
P. O. Box 92 – 40200
KISII.

DR. MATIKO GIABE
COUNTY DIRECTOR OF MEDICAL SERVICES
KISII COUNTY

APPENDIX VI: TURNITIN

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Fiona OKENAGWA

RESEARCH

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BCOM
Mount Kenya University

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MOUNT KENYA UNIVERSITY KISII CAMPUS CO-ORDINATOR SCHOOL OF POST GRADUATE STUDIES

APPENDIX VII: KISII COUNTY MAP