EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE IN MOMBASA COUNTY GOVERNMENT

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER DEGREE IN PROCUREMENT AND SUPPLIES MANAGEMENT OF

MOUNT KENYA UNIVERSITY

April, 2024

DECLARATION AND APPROVALS

I hereby declare that this research project is a result of my original efforts and has not been submitted anywhere for any degree award.

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Supervisor's approval

This research project has been submitted for examination with my approval as the supervisor.

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DEDICATION

This research project is dedicated to my wife Ann Kuria, family members, my brother Ayub Simwa, Jairus Khamal, who encouraged and supported my course tirelessly. To my close friends, Mr. Ashiono, Mr. Nangubo and Mr. Osogo as a way of appreciation for their support, patience and understanding throughout the duration of this course. To you all I say thank you.

ACKNOWLEDGEMENT

First, I take this opportunity to thank God for giving me strength and divine wisdom throughout my time of study. Special thanks to my researcher supervisor Dr. Peter Wamalwa Barasa, PhD for his unlimited guidance throughout the time of this research. Much thanks to my parents, brothers and sisters for their encouragement and support, throughout this study. Finally, I thank the entire management and staff of county government of Mombasa for allowing me to use their county as the case study.

ABSTRACT

Inventory management is the process of keeping track of all the stock in an organization. These include purchases and procurements such as raw material and other inputs. It also includes the work in progress items which include unfinished products. These items need to be managed in such a manner that wastages and losses are minimized and productivity optimized. This study aimed at establishing the effect of inventory management practices on the operational performance of Mombasa County government. The specific objectives included the following: to examine the impact of JIT model on the operational performance of Mombasa County government; to assess the effect of Activity Based Costing (ABC) on the operational performance of Mombasa County government; to determine the impact of Economic Order Quantity (EOQ) on the operational performance of Mombasa County government and to establish the impact of stock taking practice on the operational performance of Mombasa County government. The research problem that the study addressed stated that Mombasa County government faces many challenges in its operational performance which can be attributed ineffective inventory management practices. Interventions have been sought both at the national and county government levels in order to improve the operational performance of county governments in Kenya. However, despite all the efforts undertaken, the operational performance in the county governments in Kenya is not optimal. Although several studies have been undertaken to establish the factors influencing the operational performance in county governments none directly addresses the influence of the management of inventory on the performance in county governments. This research therefore sought to establish the effect of inventory management practices on the operational performance of Mombasa County government. The research study reviewed Just in Time Theory, ABC theory, EOQ theory and the Theory and the Systems Theory. This study used a descriptive survey design. The target population was all the 250 employees working in Mombasa County government that included ICT officers, Finance officers, Budgeting officers, Internal Audit officers and Procurement officers. Sample size of 96 employees was drawn from and was selected by the use of stratified random sampling. Data was collected using a questionnaire. Data analysis was done with the aid of SPSS version 28. The descriptive analysis of the study revealed that one can meet customer needs and improve product productivity and flexibility by implementing JIT supply chain management techniques. Customers, suppliers, goods, and supply chains are a part of these operations are allotted charges by ABC. EOQ is the inventory level at which ordering and holding expenses are minimized. And that there was a positive and significant correlation on the influence of Inventory Control Techniques on Service Delivery in Parastatals in Kenya. Inferential statistics was displayed by the use of correlations and regression analysis. The ethical considerations for this study included confidentiality, informed consent, privacy and anonymity. The study concluded that JIT practices have the strongest influence on operational performance. The county government should prioritize adopting and enhancing JIT practices to achieve significant performance improvements. Regular and accurate stocktaking has a substantial positive impact on operational performance. Investing in effective stocktaking procedures can lead to considerable enhancements in inventory management and overall efficiency. ABC practices positively affect operational performance by providing precise cost allocation and better resource management. Implementing ABC can help the county

government make informed decisions and improve operational efficiency. EOQ has the lowest, yet still significant, positive impact on operational performance. Optimizing order quantities through EOQ can help reduce costs and maintain optimal inventory levels, contributing to improved performance. The study recommended that Mombasa County government should Invest in advanced inventory management software that integrates JIT, ABC, EOQ, and stocktaking functionalities. This technology can provide real-time data, improve accuracy, and streamline inventory management processes. Regularly train staff on the latest inventory management practices and tools. Continuous professional development ensures that employees are equipped with the necessary skills to implement and maintain effective inventory management systems. Establish a culture of continuous improvement within the inventory management department. Regularly review and assess current practices, and make adjustments as needed to ensure optimal performance and adaptability to changing conditions. Foster strong relationships with suppliers to enhance coordination and reliability in the supply chain. Effective communication and collaboration with suppliers can support JIT practices and ensure timely delivery of materials. And implement key performance indicators (KPIs) to monitor the effectiveness of inventory management practices. Regularly track and analyze these metrics to identify areas for improvement and ensure that inventory management practices are contributing to overall operational performance.

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ABC	Activity Based Costing
EOQ	Economic Order Quantity
JIT	Just in Time
SPSS	Statistical Package for Social Sciences

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Inventory management, is vital for the functioning of an organization's supply chain, encompasses various essential activities. These activities encompass not only the mere ordering, storing, and utilization of raw materials, components, and finished products but also entail intricate planning, meticulous tracking, and optimization of inventory levels. Panigrahi, Mishra, Samantaray, & Jena (2022) delve into the intricate details of inventory management, elucidating its indispensable role in enhancing an organization's operational efficiency.

Effective inventory management lies in maintaining optimal inventory levels, which, in turn, facilitates streamlined production processes, reduces lead times, and ensures timely delivery to customers. This multifaceted approach not only augments productivity but also yields cost-saving dividends by curbing excess inventory and associated holding costs. Indeed, effective inventory management acts as the linchpin in the broader supply chain architecture, ensuring the judicious availability of resources at the right place and time to forestall stockouts and avert overstock predicaments that needlessly tie up capital.

As elucidated by Hayes (2022), inventory management transcends the mere physical handling of goods; it entails strategic planning and coordination of procurement, production, and distribution activities. Building upon this foundational understanding, Frye (2022) underscores the transformative potential of efficient inventory management, which engenders organizational responsiveness, efficiency, and

profitability. By aligning inventory levels with demand patterns and market dynamics, businesses can deftly navigate changes, capitalize on opportunities, and mitigate risks, thereby gaining a competitive edge and fostering sustainable growth.

Operational performance, as underscored by Kumar (2022), is the pursuit of productivity and efficiency through streamlined processes and resource utilization. However, achieving optimal operational performance necessitates more than merely minimizing effort; it demands a strategic amalgamation of modern technology, meticulous planning, and effective resource management to harmonize organizational capabilities with service and product delivery objectives.

Schmidt & Raman (2022) further underscore the pivotal role of internal controls, including robust inventory management practices, in fortifying operational performance. By curbing operational disruptions and mitigating company risk, such controls bolster organizational resilience in today's fiercely competitive landscape, instilling stakeholder confidence and enhancing market positioning.

Furthermore, Dora and Kumar (2022) advocate for the adoption of best operational strategies and unwavering commitments to drive productivity gains while simultaneously mitigating risks. This necessitates a holistic approach encompassing not only operational efficiency but also risk management and contingency planning, thereby fostering a culture of continuous improvement and adaptability.

Inventory management, as delineated by Hayes (2022), comprises a comprehensive array of activities aimed at meticulously tracking and controlling all stock within an organization. This entails not only the procurement and purchase of raw materials and inputs but also encompasses managing work-in-progress items and overseeing the inventory of finished goods ready for sale.

Various inventory management techniques and methodologies, such as the Just-In-Time (JIT) approach, the ABC (Activity-Based Costing) method, and the Economic Order Quantity (EOQ) model, have been devised to facilitate effective control and optimization of inventory levels. These methodologies, coupled with regular stocktaking procedures, ensure accuracy and accountability in inventory management, enabling organizations to identify discrepancies and adjust inventory levels as needed. Effective inventory management plays a pivotal role in driving operational performance across diverse sectors, contributing to streamlined operations, reduced lead times, and enhanced customer satisfaction. By aligning inventory management practices with organizational goals and objectives, businesses and institutions can unlock significant benefits, including improved operational efficiency, enhanced financial performance, and heightened customer satisfaction.

Globally, the importance of inventory management cuts across organizational structures, serving as a linchpin for efficient operations in diverse industries. Williamson (2022) explores the relationship between inventory turnover and profitability, revealing a direct link between inventory management and financial success. A high turnover rate signifies swift conversion of inventory into sales, maximizing resource usage and capital efficiency. Measured through ratios, this concept offers a numerical glimpse into inventory management prowess, quantifying an organization's ability to manage inventory and convert it into revenue. High turnover rates signal efficient inventory management, reflecting lean inventory systems, just-in-time manufacturing, and agile supply chains that respond rapidly to market shifts and seize revenue opportunities.

In Malaysia, the retail sector grapples with the imperative of upholding precise inventory and robust warehousing systems, as emphasized by Vatumalae, Rajagopal, Sundram, & Hua (2022). With consumer preferences evolving and market dynamics intensifying, retailers must deploy efficient inventory practices to stay ahead and meet customer expectations. Stocktaking, a multifaceted process of physical inventory counts, emerges as a pivotal aspect, ensuring accuracy and preventing discrepancies, stockouts, and shrinkage. Integration with financial systems enhances transparency and decision-making, aligning inventory with accounting standards and promoting accountability.

In India, Panigrahi, Mishra, Samantaray, & Jena (2022) explore inventory management's broad impact on operational efficiency within steel manufacturing. By optimizing resource use and slashing production costs, robust inventory management fuels operational success.

In Africa, from Nigeria to Rwanda and Tanzania, effective inventory management proves paramount for organizational performance. Ogah, Asiegbu, & Moradeyo (2022) warn of the perils of subpar inventory management in Nigerian manufacturing, citing quality issues and sluggish production. In Rwanda, Sylvere & Irechukwu (2022) uncover the benefits of integrated inventory systems, forecasting, and JIT practices, boosting efficiency, cost savings, and customer satisfaction. Tanzanian firms, as revealed by Mbugi & Lutego (2022), can bolster performance through inventory optimization initiatives, while healthcare institutions in Nigeria, per Olanipon, Akinola, & Oladele (2022), reap rewards of efficient inventory management, enhancing patient care and cost containment.

In Kenya, inventory management's impact on operational efficiency resonates across industries, with studies by Musivo & Chege (2022) and Kamau & Thogori (2022) revealing its positive correlation with productivity and customer satisfaction. Collins & Patrick (2021) shed light on stocktaking's significance in milk processing, enhancing accuracy and efficiency. Rumenser (2022) underscores the economic gains of regular stocktaking, fortifying organizational performance in Indonesia.

The JIT model, highlighted by Collins & Patrick (2021), emerges as a potent tool for cost reduction and operational efficiency in Kenya. The challenges confronting Mombasa County extend beyond procurement to encompass inventory management, hindering operational performance and service delivery. Okeyo & Kaplelach (2022) unearth financial discrepancies and inefficiencies, eroding public trust and diverting resources from critical services. Idle inventory compounds these challenges, draining resources and impeding progress.

Addressing these hurdles demands good governance, enhanced transparency, and technology-driven solutions. By embracing best practices, Mombasa County can elevate operational performance, optimize resource allocation, and deliver quality services, fostering sustainable development and prosperity for its population.

1.2 Statement of the Problem

Mombasa County government faces many challenges in its operational performance which can be attributed ineffective inventory management practices. According to Musiyo & Chege (2022), poor operational performance resulting from inept inventory management practices is among the determinants of most county governments in Kenya losing the support international organizations for community-based projects.

Njoroge & Opuodho, (2022) attribute poor financial performance of property developers to inventory management among other reasons.

Interventions have been sought both at the national and county government levels in order to improve the operational performance of county governments in Kenya. The auditor general publishes annual reports depicting the status of the operational performance of county governments and gives recommendations for improvement. The oversight role of the parliament, senate and county assemblies also aim at fostering the improvement of the operational performance county governments in Kenya. However, despite all the efforts undertaken, the operational performance in the county governments in Kenya is not optimal (Muthoka, & Waswa, 2021).

Several studies have been undertaken to establish the factors influencing the operational performance in county governments (Mohamud, (2023); Jumanne, Njoroge, & Moi, (2023); Musiega, Tsofa, Nyawira, Njuguna, Munywoki, Hanson, & Barasa, (2023); Tsofa, Waweru, Munywoki, Soe, Rodriguez, & Koon, (2023). However, none of these studies directly addresses the influence of the management of inventory on the performance in county governments. This research therefore seeks to answer the research question, what are the effects of the management of inventory on operational performance of Mombasa County government?

1.3 Purpose of the Study

The purpose of this research was to establish the effect of inventory management practices on the operational performance of Mombasa County government

1.4 Specific objectives of the study

i. To examine the Influence of Just in Time (JIT) Model on Operational performance of the county government of Mombasa.

ii. To establish the effect of Activity Based Costing (ABC) on Operational performance of the county government of Mombasa.

iii. To determine the effect of Economic Order Quantity (EOQ) on operational performance in Mombasa County government

iv. To assess the effect of Stock Taking on Operational performance of the county government of Mombasa.

1.5 Research Questions

i. How does Just in Time (JIT) Model Influence the operational performance of the county government of Mombasa?

ii. How does Activity Based Costing (ABC) influence the operational performance of the county government of Mombasa?

iii. How does Economic Order Quantity (EOQ) affect the operational performance of the county government of Mombasa?

iv. How does stock-taking affect the operational performance of the county government of Mombasa?

1.6 Hypotheses

$H1_0$: The Just in Time (JIT) Model does not have a significant influence on the operational performance of the county government of Mombasa.

$H1_1$: The Just in Time (JIT) Model has a significant influence on the operational performance of the county government of Mombasa.

$H2_0$: Activity Based Costing (ABC) does not have a significant effect on the operational performance of the county government of Mombasa.

$H2_1$: Activity Based Costing (ABC) has a significant effect on the operational performance of the county government of Mombasa.

$H3_0$: Economic Order Quantity (EOQ) does not have a significant effect on the operational performance of the county government of Mombasa.

$H3_1$: Economic Order Quantity (EOQ) has a significant effect on the operational performance of the county government of Mombasa.

$H4_0$: Stock Taking does not have a significant effect on the operational performance of the county government of Mombasa.

$H4_1$: Stock Taking has a significant effect on the operational performance of the county government of Mombasa.

1.7 Significance for the study

1.7.1 County government

The County government of Mombasa will benefit from this study since it will provide a roadmap to formulate a sound inventory system which will translate to a more efficient operational performance. Other county governments will also benefit from the study in that they will reflect upon the findings to decipher what would be useful for them. Policy makers at national and county government levels will benefit from the research because it will assist them in formulating that will enhance innovatory management and operational performance.

1.7.2 Researchers and other Scholars

Researchers will benefit from the study since it will provide empirical literature that will inform them about the state of the management of inventory operational performance on the area of research.

1.7.3 Community

The community and other stakeholders will also benefit from the study because the research will be a source of valuable information on how county governments can perform better by practicing targeted inventory management practices. This will enable the county governments to deliver better services to the community members.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations of the Study

This study had a limitation whereby among the respondents, some were not open enough to give honest answers to the questions due to the fear that financial issues are very sensitive and could lead to victimization. In order to overcome the limitation, the researcher assured the respondents about confidentiality and anonymity and the respondents were not required to write their names on the questionnaires and their responses were only confined within the academic circles.

1.8.2 Delimitations of the Study

The delimitations of the study included trust, anonymity and confidentiality. The research was conducted in Mombasa County government and the focus was on the

staff members in the revenue and procurement departments. Since the information obtained from the respondents involved financial matters and was very sensitive, the respondents were not willing to be open about it hence to mitigate this, the respondents were assured of confidentiality and they were fully informed on the purpose of the research as it was solely for academic.

1.9 Scope of the study

In the current study, the researcher sought to investigate the effects of the management of the inventory on operational performance in Mombasa County government. It aimed at establishing the relationship that exists between JIT, ABC, EOQ and stocktaking and the operational performance of the county government of Mombasa. The respondents that were involved in the research included the employees in the Mombasa County treasury department. The research was conducted in Mombasa County and was conducted between month of July and November 2023.

1.10 Operational definition of terms

Activity based costing It involves putting items into categories according to how they are valued. In inventory management, items are identified and matched with the customer's needs and demands

Economic order quantity: It is the accurate calculation of the number of items which are the most economical so as to minimize costs and at the same time maximize the value when restocking the inventory

Inventory: It is the record of all the physical and nonphysical resources in an organization

Just-in-time: It refers to focusing on the reduction and elimination of costs and enables an organization to translate high operational performance into deliverables

Key: It refers to elements or factors that are of crucial importance or fundamental significance in influencing the outcomes under study. Specifically, it denotes the primary and most impactful aspects of inventory management practices that significantly affect the operational performance of the Mombasa County government.

Stock taking: It involves the physical counting of all the stock on the organizations premises or rented space

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section involved the theoretical review, Empirical review and Conceptual framework

2.2 Theoretical Review

This research reviewed Just in Time Theory, Activity Based Costing Theory, the Economic Order Quantity Theory and the Systems Theory.

2.2.1 Just in Time theory

Just in Time (JIT) Theory is a cornerstone of lean management philosophy, originating from the Toyota Production System (TPS) in the automotive industry. JIT emphasizes the elimination of waste through efficient inventory management practices, aiming to deliver the right quantity of products at the right time to meet customer demand. According to Ohno (1988) and Monden (2011), JIT principles advocate for minimizing inventory holding costs, reducing lead times, and improving production flow. This theory suggests that by implementing JIT practices, organizations can achieve significant improvements in operational performance by streamlining processes, reducing inventory carrying costs, and enhancing overall efficiency. Understanding JIT theory is crucial for evaluating the impact of JIT inventory management practices on the operational performance of the Mombasa County government, as it provides insights into how minimizing waste and optimizing processes can lead to better outcomes in government operations.

Just-In-Time (JIT) methodology encompasses various elements that collectively contribute to its effectiveness in enhancing operational efficiency and driving continuous improvement within organizations. One key aspect of JIT is the relentless pursuit of waste elimination across all facets of production and operations. By identifying and eliminating non-value-added activities, such as excess inventory, overproduction, unnecessary transportation, and waiting times, organizations can streamline processes, reduce costs, and optimize resource utilization. Moreover, JIT fosters a culture of continuous improvement, whereby organizations are committed to ongoing refinement and enhancement of their processes and practices. Through regular review, analysis, and feedback loops, JIT enables organizations to identify inefficiencies, address bottlenecks, and implement corrective actions to drive incremental improvements in productivity, quality, and customer satisfaction. Embracing JIT principles enables organizations to make their production processes more efficient and practical, thereby gaining a competitive edge in the marketplace. By synchronizing production with customer demand signals, organizations can minimize lead times, reduce inventory holding costs, and improve overall responsiveness to changing market dynamics. This agility positions JIT adopters ahead of competitors in the public market pool, as they can swiftly adapt to evolving customer preferences and market trends. Central to the success of JIT is its focus on customer satisfaction through timely delivery of products and services that meet or exceed customer expectations. By producing only what is required, organizations can ensure that customer needs are met at the right time and in the right quantity, fostering greater customer loyalty and repeat business. Furthermore, JIT facilitates direct communication between producers and customers, enabling organizations to tailor

their offerings to specific customer requirements and deliver products that adhere to the highest quality standards. The implementation of JIT methodology not only enhances operational efficiency but also leads to improvements in product quality. By reducing waste and optimizing production processes, organizations can minimize defects, errors, and rework, resulting in higher-quality products that meet stringent customer standards. This focus on quality improvement contributes to enhanced customer satisfaction, brand reputation, and long-term competitiveness in the marketplace.

While Just-In-Time (JIT) methodology offers numerous benefits in terms of efficiency, cost savings, and customer satisfaction, it is not without its inherent risks and challenges. One of the primary risks associated with JIT implementation is its vulnerability to unexpected demand spikes or disruptions in the supply chain. When demand exceeds expectations or unforeseen events occur, organizations may struggle to meet customer needs in a timely manner, potentially leading to dissatisfaction and operational setbacks.

2.2.2 Activity Based Costing Theory

Activity Based Costing (ABC) Theory is an accounting method that assigns costs to activities based on their consumption of resources. Developed as an alternative to traditional overhead allocation methods, ABC provides more accurate cost information by tracing costs to specific activities. Kaplan and Cooper (1998) and Cooper and Kaplan (1991) highlight the importance of ABC in providing insights into the true costs of activities and products, thus enabling better resource allocation and decision-making. ABC theory suggests that by accurately allocating costs to

activities, organizations can identify areas of inefficiency and prioritize resources effectively. Understanding ABC theory is essential for assessing the impact of ABC practices on operational performance in the Mombasa County government, as it helps in evaluating how cost transparency and efficiency can contribute to better government operations.

2.2.3 Economic Order Quantity Theory

Economic Order Quantity (EOQ) Theory is a classic inventory management model used to determine the optimal order quantity that minimizes total inventory costs, including ordering costs and holding costs. First proposed by Harris (1913) and further developed by Wilson (1934), EOQ theory provides a framework for balancing the costs of holding inventory with the costs of ordering inventory. The theory suggests that maintaining optimal inventory levels can lead to cost savings and improved operational efficiency. Understanding EOQ theory is important for evaluating the impact of optimizing order quantities on operational performance in the Mombasa County government, as it provides insights into how inventory management practices can contribute to cost reduction and efficiency improvement.

2.2.4 Systems Theory

This theory revolves around the inherent flexibility ingrained within the components of the supply chain. It posits that a system comprises interconnected parts functioning harmoniously towards a shared objective. Within the structure of a supply chain, multiple components operate together, either concurrently or sequentially, to execute the entire manufacturing-to-delivery process. The journey

commences with the procurement of raw materials, constituting a self-contained system in its own right. Indeed, each interconnected part within a system typically functions independently, yet collaborates with other systems to complete the chain. As raw materials are acquired by an organization, a myriad of processes ensues, culminating in the production of finished goods. These diverse processes constitute a manufacturing system within the supply chain framework. Following production, the manufactured products find abode in warehouses, awaiting dispatch—a pivotal juncture intertwined with the supply chain. Subsequently, the transportation of products from warehouses to their ultimate destination signifies the consummation of the supply chain system. Stakeholders within the supply chain ecosystem must possess an intimate understanding of the network's structure to facilitate seamless operations (Collins & Patrick, 2021).

In a supply chain setting, it is imperative for participants to grasp the intricate workings of the network's components comprehensively. This enables them to adapt swiftly in the event of disruptions, thereby enhancing efficiency and aligning with objectives delineated in the practice of activity-based costing and economic order quantity, as elucidated in the current research.

Beyond production and warehousing, the transportation of goods to their final endpoint epitomizes the culmination of the supply chain system. Transportation logistics, encompassing various modes such as road, rail, sea, or air, play a pivotal role in ensuring the punctual and reliable delivery of goods. Streamlined transportation management ensures the seamless conveyance of products to customers, meeting expectations and bolstering satisfaction levels. Furthermore, inventory entries and management processes serve as vital components within the

supply chain apparatus, facilitating meticulous record-keeping of stock levels and expediting replenishment when necessary. Employing advanced inventory management practices like real-time tracking and automated replenishment algorithms optimizes inventory levels, curtails stockouts, and diminishes holding costs, thereby elevating overall supply chain efficacy. Amidst the intricate web of supply chain operations, stakeholders must possess a holistic comprehension of the network's structure and interconnections. This cognizance empowers them to anticipate disruptions, adapt to market dynamics, and collaborate harmoniously to surmount challenges and uphold operational continuity.

By fostering an environment of collaboration, communication, and knowledge dissemination among supply chain stakeholders, organizations can fortify the efficiency and resilience of their supply chain networks. This collective understanding and alignment with activity-based costing practices and economic order quantity practices, underscored in the recent study by Collins & Patrick (2021), enable organizations to enhance cost control and optimize inventory management effectively.

The efficacy of supply chain systems hinges on seamless coordination and collaboration among stakeholders, underpinned by a profound understanding of interconnected components and processes. Leveraging this collective wisdom and aligning with best practices in inventory management and transportation logistics empowers organizations to augment supply chain efficiency, realize cost efficiencies, and ultimately deliver enhanced value to customers and stakeholders alike.

Systems Theory offers a holistic framework for understanding organizational behavior and performance by examining the interactions and interdependencies among various components within a system. In the context of the study focusing on the operational performance of the county government of Mombasa, Systems Theory can be applied to analyze how different elements within the government interact and influence overall effectiveness.

Systems Theory emphasizes the interconnectedness of different departments, units, and functions within an organization. The study explores how the various departments and agencies within the county government of Mombasa interact and collaborate to deliver public services and achieve organizational goals. It examines how coordination and communication among different parts of the government impact operational efficiency and service delivery.

Systems Theory posits that organizations receive feedback from their environment, which influences decision-making and adaptation. The study investigates how the county government of Mombasa collects and utilizes feedback from citizens, stakeholders, and performance metrics to assess its operational performance and identify areas for improvement. It examines the effectiveness of feedback mechanisms in driving organizational learning and continuous improvement within government operations.

Systems Theory recognizes that organizations exhibit emergent properties that arise from the interactions among their components. The study explores how the county government of Mombasa's organizational structure, culture, and processes give rise to emergent properties such as innovation, resilience, and adaptability. It examines

how these emergent properties contribute to operational performance and the government's ability to respond to dynamic challenges and opportunities.

Systems Theory highlights the importance of boundary-spanning activities that bridge internal and external boundaries to facilitate information exchange and collaboration. The study investigates how the county government of Mombasa engages with external stakeholders, including other government agencies, community organizations, and private sector partners, to achieve its objectives and deliver public services effectively. It examines the role of boundary-spanning activities in promoting transparency, inclusivity, and partnership in government operations.

Systems Theory acknowledges the complexity of organizational environments and the need for adaptive responses to changing conditions. The study assesses how the county government of Mombasa navigates complexity and uncertainty in its operational environment, including factors such as political dynamics, socioeconomic trends, and technological advancements. It examines how the government's capacity for adaptation influences its operational resilience and long-term sustainability.

By applying Systems Theory to the study's conceptual framework, researchers can identify policy implications for enhancing the operational performance of the county government of Mombasa. This involves recommendations for strengthening interdepartmental collaboration, improving feedback mechanisms, fostering emergent properties such as innovation and resilience, enhancing boundary-spanning activities, and promoting adaptive capacity within government operations.

Systems Theory provides a valuable lens for understanding the dynamics of organizational performance within the county government of Mombasa, offering insights into the complex interactions and interdependencies that shape operational effectiveness and service delivery in public administration.

2.3 Empirical Framework

The empirical framework reviewed the relationship between the independent variables and the dependent variable based on other scholars.

2.3.1 Effect of Just in Time (JIT) Model on Operational performance

By embracing JIT practices, organizations managed to fine-tune production schedules, truncate lead times, and bolster overall efficiency, thereby unlocking higher levels of customer satisfaction and competitive edge.

For instance, research spearheaded by Ufua et al. (2022) in Nigeria's commercial livestock sector underscored how the judicious utilization of JIT principles catalyzed tangible improvements in operational performance metrics.

Similarly, studies conducted by Collins & Patrick (2021) in Kenya and Shou, Shan & Li (2022) pertaining to supply chain practices corroborate the salient influence of JIT on operational performance. These empirical investigations unearthed that organizations embracing JIT principles experienced quantifiable enhancements in key performance indicators, such as productivity, cost efficiency, and service quality. Through the adoption of JIT practices, organizations streamlined supply chain operations, whittled down inventory holding costs, and exhibited enhanced agility in

responding to dynamic market exigencies, thereby amplifying their competitive prowess and profitability. Furthermore, JIT's unwavering emphasis on continuous improvement and waste mitigation nurtures a culture of innovation and efficiency within organizational precincts. By empowering employees to discern and eradicate non-value-added activities, JIT furnishes organizations with the impetus to fine-tune resource utilization, augment process efficiency, and foster sustainable growth trajectories over time. Furthermore, JIT's customer-centric ethos fosters closer alignment between production and customer demand, enabling organizations to furnish products and services meticulously tailored to meet customer proclivities and requirements. This dovetailing not only amplifies customer satisfaction but also fortifies customer loyalty and retention, engendering enduring success and profitability for the organization.

The widespread implementation of Just-In-Time (JIT) methodology has precipitated an abundance of empirical inquiry across a plethora of industries and geographical boundaries, consistently underpinning its affirmative influence on organizational performance and supply chain management paradigms. A plethora of studies have underscored the affirmative impact of JIT on enhancing operational efficiency, productivity, and overall performance metrics. For instance, research spearheaded by Olanipon, Akinola, & Oladele (2022) in healthcare institutions in Nigeria unveiled how JIT exerted a significantly positive influence on inventory management and organizational performance. By embracing JIT principles, healthcare institutions optimized stock management practices, curtailed waste, and ameliorated service delivery, culminating in superior overall performance outcomes.

Similarly, studies conducted in China by Li, Ying, Yan, & Fan (2022) illuminated the saliently affirmative influence of JIT on companies' output. Through the adoption of JIT practices, companies streamlined production processes, truncated lead times, and augmented resource utilization, resulting in augmented productivity and profitability. These findings underscore the universal applicability of JIT principles and their efficacy in catalyzing performance enhancements across a multifarious array of industry sectors.

Moreover, research spearheaded by Hamadneh, Alshurideh, Al Kurdi, & AlHamad (2022) delved into the nexus between JIT and supply chain management. The research posited that JIT assumes a pivotal role in bolstering supply chain performance by harmonizing production schedules with customer demands.

2.3.2 Effect of Activity Based Costing (ABC) on Operational performance

Activity-Based Costing (ABC) in inventory management empowers organizations to utilize resources by prioritizing items based on their pivotal role in fulfilling customer needs and organizational imperatives. ABC practice empowers organizations to discern key metrics and performance indicators vital for effective inventory management. By delving into data on demand patterns, lead times, and inventory turnover rates, organizations glean invaluable insights into customer proclivities, market dynamics, and supply chain intricacies. This data-driven modus operandi empowers organizations to navigate the labyrinth of inventory management strategies with sagacity and discernment, tweaking parameters such as reorder points, safety stock levels, and supplier relationships to ensure the seamless

fulfillment of customer orders and the maximization of sales opportunities. Furthermore, ABC practice nurtures a culture of perpetual improvement and innovation within organizations.

Ravinder & Misra (2014) underscore the pivotal role of the ABC system in enabling organizations to evaluate the unique attributes and requisites of each inventory grouping. By stratifying items into A, B, and C categories predicated on their value and utility, organizations can prioritize management endeavors and allocate resources judiciously. Category A items, epitomizing high value and importance, demand scrupulous oversight and attentive management to forestall stockouts and ensure operational continuity. Conversely, Category C items, while less critical to operations, warrant consideration to stave off waste and optimize storage and handling protocols.

Olanipon, Akinola, & Oladele (2022) conducted a study in healthcare institutions in Nigeria, elucidating the affirmative impact of ABC inventory management on performance. The research evinced that effective management of inventory categories, guided by the ABC classification system, engendered improvements in stock management performance. By aligning management practices with the unique exigencies and attributes of each inventory category, healthcare institutions succeeded in enhancing efficiency, trimming waste, and enhancing service delivery.

Similarly, Pattimeta (2023) conducted a study corroborating the salutary influence of activity-based costing (ABC) on inventory management performance. ABC affords organizations the opportunity to allocate costs with pinpoint accuracy and transparency, facilitating enhanced decision-making and resource optimization. By

tethering costs directly to the activities and processes undergirding inventory management, organizations identify avenues for improvement, abate inefficiencies, and bolster overall performance.

The findings from Gitau (2016) and Okello (2011) shed illumination on the momentous impact of inventory management techniques, particularly the ABC Inventory Model, on organizational productivity and performance, both within Kenyan parastatals and non-governmental organizations (NGOs). Gitau's (2016) study probed the nexus between organizational productivity and inventory management techniques within Kenyan parastatals, revealing a positive correlation between the adoption of the ABC Inventory Model and organizational productivity. Each unit increase in the ABC Inventory Model corresponded to a 0.642 unit uptick in organizational productivity, underscoring the efficacy of the ABC Inventory Model in optimizing inventory management practices and fueling productivity enhancements within public sector organizations. Similarly, Okello's (2011) study sought to assess the impact of inventory management techniques on NGO performance. Leveraging descriptive statistics to analyze data, the study unearthed a positive association between the implementation of the ABC Inventory Model and operational performance within NGOs. A unit increase in ABC scrutiny precipitated a 0.683 uptick in operational performance within NGOs, accentuating the pivotal role of effective inventory management techniques, such as the ABC Inventory Model, in fortifying operational efficiency and performance within diverse sectors and environments.

2.3.3 Effect of Economic Order Quantity (EOQ) on Operational performance

The concept of Economic Order Quantity (EOQ) is fundamental in inventory management. As underscored by Mwangangi and Senelwa (2018), EOQ epitomizes the optimal volume of inventory to be procured at once to meet demand while curtailing associated costs. The determination of EOQ necessitates a meticulous assessment of various factors, including ordering expenses, holding costs, and demand dynamics. The paramount importance of EOQ transcends diverse industries and sectors, as evidenced by the scholarly discourse of Blackburn (2010) and empirical investigations such as that conducted by Onchoke and Wanyoike (2016). These scholarly deliberations underscore the widespread adoption of the EOQ model in inventory management practices owing to its efficacy in fine-tuning inventory levels and mitigating costs. Through the application of the EOQ model, organizations can make informed decisions regarding order quantities and frequencies, thereby enhancing operational efficiency and bolstering profitability within their supply chain frameworks.

Moreover, Onchoke and Wanyoike (2016) delineate several key outcomes associated with the implementation of the EOQ model. These encompass the harmonization of ordering and holding costs, leading to a reduction in total inventory expenditures. The EOQ model also identifies a point of minimum total inventory costs, colloquially termed the "point of minimum total inventory costs" or the "equilibrium quantity." At this juncture, ordering and holding costs are minimized, resulting in an optimal inventory level conducive to efficiency and cost-effectiveness maximization. Additionally, the EOQ model engenders a profound comprehension of the trade-offs intrinsic to inventory management decisions. Organizations are empowered to

scrutinize the impact of order quantity variations on overall costs and performance metrics, facilitating informed decision-making and continuous improvement initiatives. By striving to attain the EOQ, entities can mitigate excess inventory, forestall stockouts, and fortify overall supply chain performance.

The Economic Order Quantity (EOQ) formula serves as a tool enabling organizations to ascertain the optimal order quantity for their inventory, achieving a delicate balance between ordering and holding costs to minimize total inventory outlays. By accurately computing the EOQ, organizations can ensure the judicious procurement of inventory, thereby averting storage-related expenses, staving off stockouts, and honing inventory management protocols holistically. The EOQ formula incorporates various factors, including ordering costs, holding costs, and demand propensities, to calculate the ideal order quantity that underpins total inventory expenditure minimization. Through the utilization of this formulaic framework, enterprises can make informed determinations regarding the timing and quantum of inventory procurement, ensuring optimal stock levels maintenance while effecting the reduction of unnecessary holding costs.

One of the primary benefits of EOQ is its capacity to minimize storage expenses by discerning the most economical units per order. By identifying the optimal order quantity, organizations can circumvent the perils of overstocking, which can lead to increased storage costs and obsolescence risks, while also preventing stockouts, which can result in lost sales and customer dissatisfaction. Furthermore, EOQ is tailored to the specific needs and demands of each organization's clientele, aligning inventory levels with customer demand to reduce waste and enhance overall efficiency in inventory management. Additionally, EOQ facilitates smooth restocking processes by ensuring that organizations order the appropriate inventory quantity per batch. By

optimizing order quantities, organizations can reduce the frequency of orders while still meeting customer demand, streamlining procurement processes, and minimizing administrative costs associated with inventory requisition and receipt.

The findings from studies conducted in Tanzania and Nigeria underscore the significant impact of Economic Order Quantity (EOQ) on operational performance and organizational effectiveness across various sectors and geographical regions. In their study conducted in Tanzania, Mbugi and Lutego (2022) observed that EOQ plays a crucial role in shaping organizations' operational performance by facilitating cost reductions. By optimizing the order quantity of inventory items, organizations can minimize ordering costs, holding costs, and overall inventory-related expenses, thereby enhancing operational efficiency and cost-effectiveness and ultimately improving organizational performance and competitiveness in the marketplace.

Similarly, Olanipon, Akinola, & Oladele (2022) conducted a study in healthcare institutions in Nigeria to investigate the influence of inventory management practices, including EOQ, on organizational performance. The findings revealed a significantly positive influence of EOQ on stock management performance within healthcare institutions. The implementation of EOQ principles resulted in enhanced efficiency, reduced costs, and optimized profitability and return on investment. By adopting EOQ strategies, healthcare institutions were able to streamline inventory management processes, minimize waste, and maximize resource utilization, thereby improving overall performance and delivering better healthcare services to patients.

These findings underscore the importance of EOQ in driving operational excellence and performance improvement across diverse organizational contexts. By optimizing order quantities and minimizing inventory costs, EOQ enables organizations to

achieve greater efficiency, profitability, and competitiveness in their respective industries. As organizations continue to face challenges related to supply chain management and cost optimization, EOQ remains a valuable tool for driving sustainable growth and success.

2.3.4 Effect of Stock Taking Practice on Operational performance

The primary aim of stocktaking is to ensure precision and liability in inventory records by reconciling physical inventory counts with the quantities documented in the organization's books or inventory management system. Throughout the stocktaking procedure, inventory personnel meticulously count and examine each item in the inventory to validate its existence, condition, and location. This entails a comprehensive physical inspection of goods, materials, or products to ascertain their presence, quality, and integrity. Items found to be in satisfactory condition are diligently documented, while any damaged, defective, or expired goods are identified, documented, and marked for appropriate action.

The review of stocktaking practices is also efficiently conducted based on data obtained from stocktaking exercises. Research by Teerasoponpong & Sopodang, (2022) delves into the function of inventory recording on firm performance, revealing a positive correlation between inventory recording and organizational performance. Similarly, Wint (2022) found that accurate inventory recording leads to better operational performance and subsequent customer loyalty.

Collins & Patrick (2021) emphasize the significance of perpetual stocktaking in enhancing the performance of milk processing firms in Kenya. Perpetual stocktaking involves regularly updating inventory records to reflect the most current stock levels. By implementing perpetual stocktaking practices, milk processing

firms can maintain accurate and up-to-date inventory data, which is crucial for effective decision-making, production planning, and supply chain management.

Furthermore, research findings from Rumenser (2022) underscore the positive impact of inventory stocktaking on efficiency and economic improvement in organizations in Indonesia. Regular stocktaking exercises enable organizations to identify and address discrepancies in inventory records, minimize shrinkage and losses, and optimize resource utilization, leading to improved efficiency in inventory management processes, reduced costs, and enhanced profitability.

Additionally, a study by Iliemena et al. (2022) in Nigeria provides further evidence of the role of stocktaking in operational performance, particularly in healthcare institutions. Stocktaking ensures the availability of essential medical supplies, optimizes inventory levels, and minimizes the risk of stockouts or shortages in healthcare settings. By accurately tracking inventory levels and expiration dates, healthcare institutions can ensure timely procurement, reduce waste, and improve patient care delivery, ultimately contributing to better operational performance and healthcare outcomes.

These studies underscore the significance of stocktaking in enhancing operational performance across various industries and geographical regions. By embracing best practices in stocktaking and inventory management, organizations can enhance efficiency, reduce costs, and bolster competitiveness, thus driving sustainable growth and success in today's dynamic business environment.

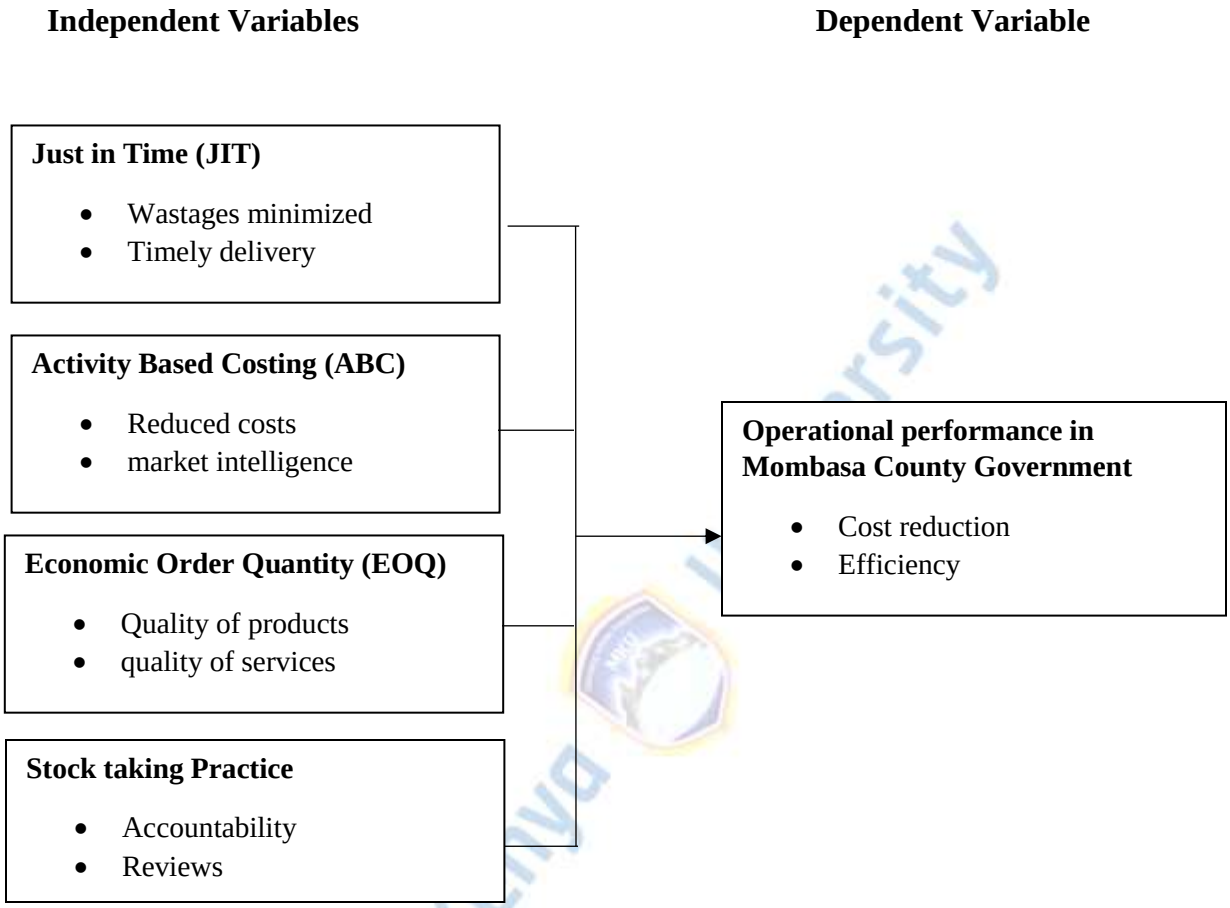
2.4 Conceptual Framework

The conceptual framework for understanding the interplay between independent variables (Just-In-Time, Activity-Based Costing, Economic Order Quantity, Stock Taking) and the dependent variable (Operational performance of the county government of Mombasa) can be visualized as a graphical representation illustrating how these factors interact and influence each other.

In the graphical representation of the conceptual framework, arrows or pathways illustrate the causal relationships and interactions between the independent variables (JIT, ABC, EOQ, Stock Taking) and the dependent variable (Operational performance). These arrows would depict how changes or interventions in one variable affect the others and, ultimately, impact operational performance. Additionally, the framework would incorporate feedback loops and potential moderating or mediating factors to capture the complexity of these relationships comprehensively. The conceptual framework provides a structured approach to understanding the dynamics of inventory management practices and their implications for the operational performance of the county government of Mombasa, facilitating informed decision-making and performance improvement initiatives.

The conceptual framework depicts the relationship between independent and dependent variables graphically. When JIT, ABC, EOQ and stocktaking are manipulated, they either influence operational performance positively or negatively as shown in the figure below.

Figure 2.1: Conceptual Framework



Source: Researcher, 2024

2.5 Summary of Variables

Just-In-Time is an inventory management strategy aimed at minimizing inventory levels by receiving goods only as they are needed in the production process, thereby reducing waste and storage costs. In the conceptual framework, JIT serves as an independent variable that directly affects operational performance. Its implementation can lead to improved efficiency, reduced inventory holding costs,

and enhanced responsiveness to demand, ultimately contributing to higher operational performance.

Activity-Based Costing is a costing method that assigns costs to products based on the activities involved in producing them. In the conceptual framework, ABC acts as an independent variable influencing operational performance indirectly. By providing insights into the costs associated with inventory management activities, ABC helps organizations optimize resource allocation, streamline processes, and improve cost efficiency, leading to enhanced operational performance.

Economic Order Quantity represents the optimal quantity of inventory to order at once to minimize total inventory costs. EOQ serves as an independent variable in the framework, directly impacting operational performance. By determining the most cost-effective order quantities, EOQ helps organizations minimize holding costs, reduce stockouts, and optimize inventory levels, thereby improving operational performance.

Stock Taking involves physically counting and verifying the inventory levels in an organization. It serves as an independent variable influencing operational performance directly. Through accurate stocktaking practices, organizations can maintain reliable inventory records, identify discrepancies, prevent stockouts, and optimize inventory management processes, ultimately leading to improved operational performance.

Operational performance serves as the dependent variable in the conceptual framework, representing the overall effectiveness and efficiency of the county government of Mombasa in delivering public services and fulfilling its mandates. It is influenced by the independent variables (JIT, ABC, EOQ, Stock Taking), which

collectively shape inventory management practices and contribute to organizational effectiveness.

2.6 Research Gaps

Identifying research gaps is essential for guiding future studies and advancing knowledge in a particular field. In the context of studying the operational performance of the county government of Mombasa in relation to inventory management practices (Just-In-Time, Activity-Based Costing, Economic Order Quantity, Stock Taking), several potential research gaps can be identified:

There is a scarcity of empirical research specifically focusing on the operational performance of county governments in Kenya, particularly Mombasa, and its relationship with inventory management practices. Existing studies predominantly focus on other sectors or industries, leaving a gap in understanding the unique challenges and dynamics faced by county governments.

Many studies on inventory management and operational performance are conducted in the context of private sector organizations or larger governmental bodies. There is a lack of research specifically tailored to the context of county governments in Kenya, considering their distinct governance structures, resource constraints, and service delivery mandates.

While individual inventory management practices such as Just-In-Time, Activity-Based Costing, Economic Order Quantity, and Stock Taking have been studied independently, there is a lack of research examining the interactions and synergies between these practices within the context of county government operations.

Understanding how these practices complement or contradict each other could provide valuable insights for improving operational performance.

Existing research predominantly rely on qualitative methodologies or case studies, leading to a dearth of quantitative analyses quantifying the impact of inventory management practices on operational performance metrics such as service delivery efficiency, cost-effectiveness, and citizen satisfaction. More quantitative studies could provide robust evidence for policymakers and practitioners.

Many studies are cross-sectional or retrospective, providing snapshots of inventory management practices and operational performance at specific points in time. There is a need for longitudinal studies tracking changes and developments over time to assess the sustainability and long-term effects of inventory management interventions on county government operations.

Research does not sufficiently explore the policy implications of findings related to inventory management practices and operational performance for county governments in Mombasa. There is a gap in translating research findings into actionable policy recommendations that can inform decision-making and governance strategies at the county level.

Limited attention is given to capturing the perspectives and experiences of various stakeholders involved in county government operations, including policymakers, administrators, frontline staff, and citizens. Understanding stakeholder perceptions and priorities regarding inventory management practices and operational performance could enrich research findings and facilitate stakeholder engagement.

Addressing these research gaps could contribute to a more comprehensive understanding of the relationship between inventory management practices and

operational performance in the context of county governments, thereby informing evidence-based policies and practices for enhancing service delivery and governance effectiveness in Mombasa and similar settings.

Gitau (2016) studied organizational productivity and inventory management techniques in Kenyan parastatals. This study found that the organizational productivity of Kenyan parastatals will increase by 0.642 units for every unit increase in the ABC Inventory Model. Specifically, the study focused on the implementation of the ABC Inventory Model, a widely recognized inventory management technique that categorizes inventory items based on their value and importance.

The findings of the study suggest a significant positive correlation between the adoption of the ABC Inventory Model and organizational productivity in Kenyan parastatals. According to the research results, for every unit increase in the implementation of the ABC Inventory Model, the organizational productivity of Kenyan parastatals increased by 0.642 units.

This finding underscores the effectiveness of the ABC Inventory Model in optimizing inventory management practices and enhancing overall productivity in parastatal organizations. By categorizing inventory items into different classes based on their value and importance, the ABC Inventory Model enables organizations to allocate resources more efficiently, prioritize inventory management efforts, and minimize costs associated with inventory holding, procurement, and stockouts. Furthermore, the positive impact of the ABC Inventory Model on organizational productivity suggests that Kenyan parastatals can achieve tangible benefits by implementing effective inventory management strategies. By adopting best practices in inventory management, such as the ABC Inventory Model, parastatal organizations can

streamline operations, improve resource utilization, and ultimately enhance their ability to deliver on their mandates and objectives.

Ng'ang'a (2013) carried out a local study on the idea of inventory management systems, concentrating on the efficiency of inventory management in the Nairobi internal security and Ministry of State for Provincial Administration. The analysis came to the conclusion that frequent stock outs and procurement delays had an impact on the operation of the company. The study provides valuable insights into the efficiency of inventory management systems within the Nairobi internal security and Ministry of State for Provincial Administration. By focusing on the operational challenges related to inventory management, the study sheds light on the impact of frequent stockouts and procurement delays on organizational performance and effectiveness.

One of the key findings of Ng'ang'a's study is the prevalence of frequent stockouts within the Nairobi internal security and Ministry of State for Provincial Administration. Stockouts occur when inventory levels fall below the required threshold, leading to disruptions in operations and potential delays in service delivery. These stockouts can have detrimental effects on organizational productivity, customer satisfaction, and overall performance.

Moreover, the study highlights the role of procurement delays in exacerbating inventory management challenges within the Nairobi internal security and Ministry of State for Provincial Administration. Procurement delays can occur due to various factors, such as bureaucratic processes, inadequate planning, or supply chain disruptions. These delays can lead to inventory shortages, increased lead times, and

higher costs, further impacting the efficiency and effectiveness of organizational operations.

The findings of Ng'ang'a's study underscore the importance of addressing inventory management challenges to improve organizational performance and service delivery within the Nairobi internal security and Ministry of State for Provincial Administration. By implementing effective inventory management systems, streamlining procurement processes, and enhancing supply chain visibility, organizations can mitigate the risks associated with stockouts and procurement delays, thereby optimizing operational efficiency and service quality.

The studies conducted by Jumada, Moi, & Jumanne (2023), Musiega, Tsofa, Nyawira, Njuguna, Munywoki, Hanson, & Barasa (2023), Li, Ying, Yan, & Fan (2022), Pattimeta (2023), Mbugi, and Lutego (2022), Collins and Patrick (2021), and Rumenser (2022) have contributed valuable insights into organizational operational performance across various contexts and industries. However, there remains a significant knowledge gap in the literature regarding the impact of inventory management specifically on Kenyan county governments' operational effectiveness. Inventory management plays a crucial role in the efficient functioning of organizations, including government entities such as county governments. However, limited research has been conducted to understand the specific challenges, practices, and outcomes related to inventory management within the context of Kenyan county governments. Addressing this knowledge gap is essential for several reasons. Firstly, county governments in Kenya are responsible for delivering essential public services, including healthcare, education, infrastructure development, and social welfare

programs. Effective inventory management is vital for ensuring the timely availability of resources and materials needed to deliver these services efficiently and effectively.

Secondly, county governments in Kenya often face unique challenges and constraints, including limited financial resources, capacity constraints, and infrastructure limitations. Understanding how inventory management practices influence operational effectiveness in this context can provide valuable insights for policymakers, practitioners, and researchers seeking to improve service delivery and governance at the county level. Moreover, by filling this knowledge gap, policymakers and practitioners can identify opportunities to optimize inventory management practices, enhance resource allocation strategies, and improve overall operational efficiency within Kenyan county governments. This, in turn, can lead to improved service delivery, better resource utilization, and enhanced outcomes for citizens and communities.

Therefore, future research efforts should focus on conducting in-depth studies to explore the impact of inventory management practices on the operational effectiveness of Kenyan county governments. By addressing this knowledge gap, researchers can contribute to the development of evidence-based policies and strategies aimed at improving governance, service delivery, and public administration at the county level in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section consists of research design, Target population, Sample size and sampling procedures, Data collection methods, data analysis and presentation

3.2 Research Design

The current research adopts a descriptive survey, which is appropriate because it enables the description, explanation and portrayal of the characteristics of an event the way it exists. It also allows for extensive data collection from a large study population which determines how variables influence each other (Mugenda & Mugenda, 2013).

Descriptive design is an observational in nature and focuses on the identification of patterns resulting from data without inferring about cause and effect between the variables. It systematically describes and analyzes the characteristics under observation by providing numerical data about the description of the phenomena that is being studied in terms of frequency, size and so forth. It enables a detailed understanding on the subject under research without having control over the variables (Mugenda & Mugenda, 2013). The participants are studied in their natural setting. The descriptive survey was suitable for the study because it included the identification of trends, characteristics, categories and frequencies in the inventory management and operational performance in a supply chain setup.

3.3 Target Population

Target population refers to the entire population being investigated (Mugenda & Mugenda, 2013). This study targeted 250 employees of Mombasa County government. They were targeted because they occupy a better position to provide vital information that was needed in the study. The table below illustrates the target population of the research.

Table 3.1: Target Population

Section	**Population**
ICT officer	86
Finance officer	47
Budgeting officer	33
Internal Audit officer	24
Procurement officers	60
Total	**250**

Source: Mombasa County Treasury (2024)

3.4 Sampling Design and Procedure

According to Kothari, (2004), the subset within any given population is referred to as a sample. Fisher et al, (2003), provides the formula below for the calculation of sample size for a target population below 10,000 as is the case with the current study.

$$n = \frac{z^2 p(1-p)}{d^2}$$

In the formula, n is the sample size, z is standard deviation, d is the margin of error and the value of p is assumed to be 0. 5. When substituted, the value of n becomes 96.

$$n = \frac{(1.96^2)(0.5)(1-0.5)}{(0.1)^2}$$

$$n = 96$$

The sample size of the research involved 96 employees from Mombasa County government. They were selected by use of stratified random sampling. This method was convenient for the study since the samples represented the target population and sampling bias will be eliminated.

Table 3.2: Sample Size

Section	**Population**	**Sample**
ICT officer	86	30
Finance officer	47	23
Budgeting officer	33	11
Internal Audit officer	24	8
Procurement officers	60	24
Total	**250**	96

Source: Researcher (2024)

3.5 Data Collection Methods and Procedures

The researcher used a questionnaire as the main tool for data collection. It was best suited for the research because of the limited time available for data collection and also because of the research objectives. The questionnaires were structured as per the research objectives. They followed a five-point Likert scale and had open ended questions which were constructed to capture qualitative data.

The researcher administered questionnaires in person and also with the help of research assistants. To begin with, an introductory letter was obtained from the university which the researcher shared with the respondents. The researcher then informed the respondents about confidentiality. They were also informed about the purpose of the research as it was for academic purposes only and not for any other reason and that all their responses were to be kept confidential. According to Lungu & Marian, (2022), most of the information to be obtained from the respondents is of high-level confidentiality and need to be handled as such by the researcher.

3.5.1 Validity and Reliability of Research Instruments

In order to determine the validity and reliability of data, a pilot study was carried out in Kilifi County where the researcher purposefully selects ten respondents from Kilifi County government. The findings of the pilot study informed the research about the likely impact of the management of inventory on performance of operations. The data collected from the pilot study informed the research on the instruments' validity. Necessary adjustments were made on the questionnaire before conducting the actual research.

Reliability is the degree to which the data collected produces results which are consistent. In order to guarantee the study instruments about their reliability, 30 respondents were selected randomly and issued with the questionnaires. The scores from their responses were analyzed by using SPSS version 28. Cronbach's coefficient alpha determined internal consistency. According to Mugenda & Mugenda (2013), Cronbach's alpha value, (α) of 0.7 and above indicated a level of reliability that is acceptable.

Mugenda & Mugenda (2013) posits that validity is the level or degree by which any deviations made on the recorded scores are significant, valuable and fitting. It shows how much the instrument measures and to what extent it aims to measure. In order to ensure validity, a pilot test on the questionnaire was administered to respondents who did not participate in the final research. The researcher also carried out a test-retest on the questionnaire piloted. The questionnaires were checked and rechecked, adjusted where necessary and had all missteps wiped out.

3.6 Data Analysis and Presentation

After being collected, data was tabulated and analyzed descriptively and inferentially by use of statistical software (SPSS) version 28. Percentages and weighted averages were used to depict descriptive statistics. Percentages, frequencies, means and standard deviations were used to display quantitative data. In order to determine the relationship between the variable, inferential statistics was used. Inferential statistics

was displayed by the use of correlations and regression analysis using the following model:

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$ to analyze the influence of the independent variables on the dependent variable. Where:

Y = Operational performance of the county government of Mombasa; X_1 = Just in time; X_2 = ABC; X_3 = EOQ; X_4 = Stocktaking; e = error term

3.7 Ethical Considerations

Prior to data collection, the researcher obtained a letter of introduction and Ethic Review Committee (ERC) permit from Mount Kenya University. This demonstrates a commitment to ethical standards by seeking approval from relevant institutional bodies. Furthermore, securing clearance certificates from the National Council for Science and Technology (NACOSTI) ensures compliance with national regulations governing research activities. By obtaining these approvals, the researcher acknowledges the importance of ethical oversight and institutional compliance in conducting research.

The researcher ensured that participants signed a consent form, indicating their voluntary participation in the study. This demonstrates respect for autonomy and informed decision-making among participants. By providing accurate information about the purpose, aim, and objectives of the study, participants are empowered to make an informed choice about their involvement. The guarantee of confidentiality reinforces trust and confidentiality between the researcher and participants, fostering a safe and respectful research environment.

The researcher emphasized the confidentiality of the information collected and assured participants that their data would only be used for academic purposes. This commitment to confidentiality is essential for protecting participants' privacy and preventing unauthorized access to sensitive information. By clearly stating the intended use of the data and limiting access to authorized personnel, the researcher upholds ethical principles of privacy and data protection.

The language used in the questionnaire was simple, clear, and understandable to ensure that participants could comprehend the questions and provide meaningful responses. This consideration acknowledges the diverse literacy levels and cultural backgrounds of participants, ensuring inclusivity and accessibility in research participation. By facilitating clear communication, the researcher promotes transparency and informed engagement among participants.

Participants were informed of their right to withdraw from the study at any time without consequence. This respects participants' autonomy and acknowledges their freedom to discontinue participation if they feel uncomfortable or no longer wish to be involved. By providing an opportunity for withdrawal, the researcher demonstrates respect for participants' rights and minimizes coercion or undue influence in the research process.

Prior to data collection, the researcher conducted a thorough risk assessment to identify potential ethical risks or harm to participants. This proactive approach allowed the researcher to anticipate and mitigate any potential risks to participants' well-being or privacy. By implementing appropriate safeguards and risk mitigation strategies, such as ensuring confidentiality and minimizing sensitive questioning, the researcher prioritized the safety and dignity of participants.

Throughout the research process, the researcher maintained ongoing monitoring and supervision to ensure adherence to ethical guidelines and standards. This included regular check-ins with participants to address any concerns or questions they may have had, as well as seeking guidance from institutional ethics committees or supervisors when faced with ethical dilemmas. By maintaining open communication and transparency, the researcher fostered a supportive and ethical research environment.

The researcher demonstrated sensitivity to cultural norms and practices, particularly in the context of the study location (Mombasa, Kenya). This involved respecting local customs, traditions, and beliefs, and ensuring that the research process was culturally appropriate and respectful. By acknowledging and accommodating cultural differences, the researcher promoted inclusivity and avoided inadvertently causing offense or discomfort to participants.

The researcher engaged with the local community in Mombasa to seek input, feedback, and collaboration throughout the research process. This community engagement helped to build trust, foster collaboration, and ensure that the research was responsive to the needs and priorities of the community. By actively involving community members in the research process, the researcher demonstrated a commitment to participatory and community-based research approaches, thereby enhancing the ethical relevance and validity of the study.

Finally, the researcher committed to transparency in reporting the study findings, including any limitations or ethical considerations encountered during the research process. By openly acknowledging and discussing ethical challenges, biases, or limitations, the researcher-maintained integrity and accountability in the reporting of

research outcomes. This transparency not only enhances the credibility and trustworthiness of the study but also contributes to the broader ethical discourse within the research community.

These ethical considerations demonstrate a commitment to upholding integrity, respect, and accountability in the research process. By adhering to ethical principles and practices, the researcher ensured the welfare and rights of participants were protected, contributing to the ethical conduct of research and the credibility of research findings.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

The data analysis, presentation, interpretation, and discussions of the study were presented in this chapter. The questionnaire served as the research tool for the whole data collection process. The questionnaire was created in accordance with the study's goals, which included examining the impact of the Just in Time (JIT) model on the operational performance of the Mombasa County government, determining the impact of Activity Based Costing (ABC) on that performance, figuring out the impact of Economic Order Quantity (EOQ) on that performance, and, lastly, evaluating the impact of stock taking on that performance.

4.2. Response Rate

In all, 96 respondents made up the study's sample. 90 responders completed the survey correctly and sent it back. All the 90 questionnaires which were returned were used for analysis. This was 93.75% of the total respondents who responded. According to Campion (1993), authors should make a good faith attempt to address the impact of non-respondents, raise the return rate of questionnaires, and make sure there are no glaring biases.

The researcher met the respondents at their work stations in order to attain the desired return rate for this study. Before distributing the questionnaire, the researcher assured

the respondents of their right to confidentiality and gave a brief explanation of the study's purpose. The surveys were then distributed to the responders and left for a week, after which they were collected. Scholars have proposed a minimum return rate threshold.

According to Mugenda & Mugenda (2008), a response rate of 50% is considered adequate, 60% good, and higher than 70% is considered very good. While Fowler (2009) recommended 60%, Dillman (2000) proposed 50% as the minimum requirement. Additionally, according to Babbie (2011), return rates of 50% are suitable for analysis and publication, 60% are good, and 70% are very good. Because of this, the 93.75% return rate for this study was deemed reliable enough to permit extrapolation of the results to the intended audience.

4.3 Reliability Results

An instrument's consistency and stability in producing measurements is referred to as its reliability. Any value between zero (no internal consistency) and one (full internal consistency) can be assigned to the alpha. George and Mallery (2011) provided the following rules of thumb for Cronbach's Alpha values: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and < .5 – Unacceptable".

Table 4.3: Summary of Cronbach's alpha Reliability Coefficient

Variables	Number of Items	Cronbach's Alpha
Just in time X_1	5	0.814
Activity Based Costing X_2	5	0.851
Economic Order Quantity X_3	5	0.776
Stocktaking X_4	5	0.862
Operational performance of the county government of Mombasa	5	0.782

Source: Research Data (2024)

In order to verify the instrument's reliability in this study, the suggested constructs' reliability was assessed using Cronbach's Alpha. According to table 3, The Mombasa County Government's operational performance scored 0.782, whereas the Just-in-time practice scored 0.814, Activity Based Costing practice scored 0.851, Economic Order Quantity practice scored 0.776, Stocktaking practice scored 0.862, and so on. This demonstrates that measurements of changeable things have a high degree of internal consistency.

4.4 Demographic Data

4.4.1 Age

In Table 4, the majority of respondents (42.2%) were between the ages of 31 and 40, (25.6%) were between the ages of 41 and 50, (24.4%) were between the ages of 20

and 30 years, 0.07% were between the ages of 51 and 60, and 0.01% were between the ages of 61 and 70.

The respondents' ages were required since, for almost all forms of measurements, the majority of physical performance parameters decrease steadily with age, at least after the age of thirty to thirty-five (Stones and Kozma, 1985).

Table 4.4: Respondent's Age

Respondent's Age	**Frequency**	**Percent (%)**
20-30 Years	22	24.4
31-40 Years	38	42.2
41-50 Years	23	25.6
51--60 Years	6	0.07
61--70 Years	1	0.01
Total	**90**	**100.0**

Source: Research Data (2024)

4.4.2. Respondents' Gender

Compared to a homogeneous team, a gender diverse team generates higher-quality judgments. Based on a resource-based view of the company, a positive association between gender diversity and performance would be expected, however social identification and self-categorization theory would support a negative relationship (Mohammad et al, 2007). According to Gupta (2013), an organization's performance is

negatively impacted by a higher degree of gender diversity, but a moderate amount of gender diversity boosts competitive advantage.

Table 5 indicates that of the 90 respondents in this study, 61.1% (55) were men and 38.9% (35) were women who worked for the Mombasa County government sample. This suggests that there was a significant gender gap in the study's respondent pool, with a greater proportion of men than women working in Mombasa County Government.

Table 4.5: Respondents' Gender

Gender	**Frequency**	**Percent (%)**
Female	35	38.9
Male	55	61.1
Total	**244**	**100.0**

Source: Research Data (2024)

This finding is in line with earlier research by Ellis, Cutura, Dione, Gillson, Manuel, and Thongori (2007), which found that although women play significant roles in Kenya's informal economy, men predominate in the formal sector, with a 74%:26% male to female ratio in the latter.

4.4.3. Respondent's Designation

Table 6 presents a descriptive analysis by designation. Procurement officers made up the plurality of respondents (33.3%), while finance officers made up the least (25.6%). The combined percentage of ICT officers, budgeting officers, and budgeting officers was 11.1%, or 18.9%.

Table 4.6: Respondent's Designation

Designation	Frequency	Percent (%)
ICT officer	10	11.1
Finance officer	23	25.6
Budgeting officer	17	18.9
Internal Audit officer	10	11.1
Procurement officers	30	33.3
Total	**90**	**100.0**

Source: Research Data (2024)

4.4.4 Respondents' Years of Experience

The results, which are displayed in Table 7, indicate that the majority of respondents—27.8%—had worked for 16 to 20 years, followed by those who had worked for 11 to 15 years, 16 to 10 years, 16 to 25 years, and 8.9 percent who had worked for more than 26 years.

Table 4.7: Respondents' Years of Experience

Years	Frequency	Percent (%)
1-5 years	10	11.1
6-10years	15	16.7
11-15 years	20	22.2
16-20 years	25	27.8
16-25 years	12	13.3
26 years and above	8	8.9
Total	**90**	**100.0**

Source: Research Data (2024)

4.5 Descriptive Analysis

4.5.1 Influence of JIT Model on Operational Performance

On a 5-point scale, the respondents were asked to indicate how much they agreed with each of the given issues regarding the JIT Model on Operational Performance of the County Government of Mombasa. They have to mark the most relevant column with a checkmark (√). According to Table 8's findings, the majority of respondents agreed that the JIT Model had an impact on the Mombasa County Government's operational performance (Mean = 3.9224, Std Dev = 0.6946). Furthermore, the majority of respondents supported direct customer delivery of completed goods (Mean=3.978, Std Dev =0.783) and agreed that work in progress is always at the minimum amounts

(Mean=4.421, Std Dev = 0.898). The majority (Mean=3.754, Std Dev=0.606) agreed that wasting work in progress is rarely the case. Additionally, most respondents stated that suppliers set the schedule for services and that they do it in the quickest amount of time (Mean=3.628, Std Dev=0.621; Mean=3.831, Std Dev=0.565). The results support Taiichi's (2006) claim that the main goals of JIT are to enhance output and achieve continuous quality through manufacturing without wasting any resources or producing dangerous or wasteful parts. One can meet customer needs and improve product productivity and flexibility by implementing Just-In-Time (JIT) supply chain management techniques.

Table 4.8: JIT Model on Operational Performance

Statement	**Mean**	**Std Dev**
Work in progress is always at the minimum quantities	4.421	0.898
Finished goods are directly delivered to customers	3.978	0.783
Wasting work in progress seldom occurs	3.754	0.606
Services are provided in the shortest time possible	3.628	0.621
Timetable scheduling is made by suppliers	3.831	0.565
Average	**3.9224**	**0.6946**

Source: Research Data (2024)

4.5.2. Influence of Activity Based Costing (ABC) Practice

On a 5-point scale, the respondents were asked to indicate how much they agreed with each of the given statements regarding Activity Based Costing (ABC) on Operational Performance of the County Government of Mombasa. They have to mark the most relevant column with a checkmark (√). Based on their responses, as indicated in Table 9, the majority of respondents believed that the application of ABC had improved market intelligence (Mean=3.89, Std Dev =0.54) and reduced administration costs (Mean=4.33, Std Dev =0.63). The majority (Mean = 3.81, Standard Deviation = 0.66) agreed that operational and inventory costs should be decreased. Furthermore, the majority of respondents concurred that the ABC method has shortened procurement cycle times (Mean=3.99, Std Dev =0.32) and improved decision making (Mean=4.2, Std Dev = 0.53). To represent how resources and activities are actually used, an activity-based approach makes use of a variety of drivers. Comparatively speaking, traditional cost systems, which usually depend on a small number of volume-based metrics, like direct labor hours or sales volume, assign costs less accurately than when numerous drivers are used (Krumwiede and Roth, 1997). Customers, suppliers, goods, and supply chains that are a part of these operations are allotted charges by ABC.

Table 4.9: Activity Based Costing (ABC) Practice on Operational Performance

Statement	Mean	Std Dev
Reduced Administration Costs	4.33	0.63
Improved Market Intelligence	3.89	0.54
Reduced Operational & Inventory Costs	3.81	0.66
Enhanced Decision making	4.20	0.53
Shortened Procurement Cycle Times	3.99	0.32
Average	**4.044**	**0.536**

Source: Research Data (2024)

4.5.3. Effect of Economic Order Quantity (EOQ) on Operational performance

On a 5-point scale, the respondents were asked to indicate how much they agreed with each of the given statements regarding Activity Based Costing (ABC) on Operational Performance of the County Government of Mombasa. They have to mark the most relevant column with a checkmark (√). Table 10 illustrates the majority of respondents' responses, which indicate that the implementation of Economic Order Quantity (EOQ) has contributed to both improved product quality (Mean = 3.69, Std Dev = 0.79) and a reduction in waste (Mean = 3.96, Std Dev = 0.48). There has been timely delivery of goods and timely delivery of services since the introduction of Economic Order Quantity (EOQ), according to the majority (Mean=3.79, Std Dev = 0.48).

EOQ is a model that is frequently utilized to manage inventory in a variety of industries, according to writers like Blackburn (2010). Onchoke and Wanyoike (2016) state that the use of the model has yielded results such as an increase in some expenses while a decrease in other costs, a minimum point on the curve representing all costs connected with inventory, and a fall in ordering costs with inventory holdings. The term "point of minimum total inventory costs" is another name for it. The Equilibrium Quantity (EOQ) is the inventory level at which ordering and holding expenses are minimized.

Table 4.**10:** Economic Order Quantity (EOQ) Practice on Operational Performance

Statement	**Mean**	**Std Dev**
Reduction in wastes	3.96	0.48
Improved quality of products	3.69	0.79
Improved quality of services	3.76	0.48
Timely delivery of products	3.67	0.67
Timely delivery of services	3.85	0.76
Average	**3.786**	**0.636**

Source: Research Data (2024)

4.5.4 Effect of Stock Taking Practice on Operational performance

The researcher requested the respondents to state their level of agreement in relation to each of the given items concerning Stock Taking Practice on Operational Performance

of the County Government of Mombasa on a 5-point scale. They were to insert a tick (√) in the most appropriate column. From the study findings in table 11, the respondents agreed that county government conducts Real-time updates on stock levels (mean = 3.75, SD = 0.97), the county government has centralized inventory management (mean = 3.72, SD = 0.83), there is effort of prevention of stock outs (products getting out of stock) (mean = 3.47, SD = 0.98). Finding are supported by the study done by Mwangangi and Senelwa (2018) studied the influence of Inventory Control Techniques on Service Delivery in Parastatals in Kenya and the results indicated that there was a positive and significant correlation.

Table 4.11: Stock Taking Practice on Operational Performance

Statement	**Mean**	**Std Dev**
Real-time updates on stock levels	3.75	0.97
Fewer inventory counts	3.86	0.89
Centralized inventory management	3.72	0.83
Prevention of stock outs (products getting out of stock)	3.47	0.98
Less overtime pays	3.68	0.49
Average	**3.696**	**0.832**

Source: Research Data (2024)

4.6 Inferential Statistics

4.6.1 Test of Multicollinearity of Independent Variables

Table 4.12: Correlation Matrix

Variables	JIT (X_1)	ABC (X_2)	EOQ (X_3)	Stocktaking Practice (X_4)	Operational Performance (Y)
JIT (X_1)	1	.570**	.269**	.318**	.550**
Sig. (2-tailed)		.000	.000	.000	.000
N	90	90	90	90	90
ABC (X_2)	.570**	1	.272**	.161*	.450**
Sig. (2-tailed)	.000		.000	.012	.000
N	90	90	90	90	90
EOQ (X_3)	.269**	.272**	1	.247**	.350**
Sig. (2-tailed)	.000	.000		.000	.000
N	90	90	90	90	90
Stocktaking Practice (X_4)	.318**	.161*	.247**	1	.500**
Sig. (2-tailed)	.000	.012	.000		.000
N	90	90	90	90	90
Operational Performance (Y)	.550**	.450**	.350**	.500**	1
Sig. (2-tailed)	.000	.000	.000	.000	
N	90	90	90	90	90

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

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data (2024)

There is a significant positive correlation ($r = .550$, $p < .01$) between Just In Time and Operational Performance, indicating that as the implementation of Just In Time practices increases, the operational performance of the Mombasa County government also improves. Just In Time is also significantly correlated with Activity Based Costing, Economic Order Quantity, and Stocktaking Practice, suggesting interdependencies among these inventory management practices.

Activity Based Costing shows a significant positive correlation ($r = .450$, $p < .01$) with Operational Performance. This indicates that better application of Activity Based Costing is associated with improved operational performance. The significant correlations with other practices, especially Just In Time, suggest that Activity Based Costing is often implemented alongside other strategies for better operational outcomes.

Economic Order Quantity has a significant positive correlation ($r = .350$, $p < .01$) with Operational Performance. Efficient use of EOQ seems to contribute positively to the operational performance. Its correlations with Just In Time, Activity Based Costing, and Stocktaking Practice indicate it is part of a broader inventory management strategy.

Stocktaking Practice has a significant positive correlation ($r = .500$, $p < .01$) with Operational Performance, highlighting the importance of regular stock audits in enhancing operational efficiency. This practice is also significantly correlated with the other inventory management practices, reinforcing its role in an integrated inventory management system.

All four inventory management practices—Just In Time, Activity Based Costing, Economic Order Quantity, and Stocktaking Practice—show significant positive correlations with Operational Performance. This suggests that improvements in any of these practices can lead to better operational performance in the Mombasa County government. The intercorrelations among the practices further indicate that they are likely implemented in conjunction with each other, contributing collectively to operational efficiency.

Table 4.12 shows that the variables' correlation is smaller than $r < 0.6$, which minimizes the multicollinearity issue. The approach is unable to discern the relative contributions of independent variables when there is multicollinearity (Norusis, 2009). Regression analysis can be made easier by following the general rule of thumb that correlations between the independent variables should be less than 0.70 (Lind et al., 2011).

4.6.2 Multiple Regression Results

Table 4.13: Model Summary for Operational Performance

Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate
1	.750[a]	.563	.550	4.321

a. Predictors: (Constant), JIT Model X_1, ABC X_2, EOQ X_3, Stocktaking X_4

b. Dependent Variable: Operational Performance of the County Government of Mombasa

Source: Research Data (2024)

The R value of .750 indicates a strong positive correlation between the combined independent variables (Just In Time, Activity Based Costing, Economic Order Quantity, and Stocktaking Practice) and the dependent variable (Operational Performance). This suggests that these inventory management practices are collectively strongly associated with the operational performance of the Mombasa County government.

The R-squared value of .563 means that approximately 56.3% of the variance in Operational Performance can be explained by the model, which includes the four inventory management practices as predictors. This indicates a good level of explanatory power for the model, showing that the independent variables provide significant insights into the factors driving operational performance.

The Adjusted R-squared value of .550 accounts for the number of predictors in the model relative to the number of data points. It is slightly lower than the R-squared value but still quite high, suggesting that the model is a good fit and the independent variables contribute meaningfully to explaining the variation in Operational Performance. Adjusted R-squared is a more accurate measure of the model's explanatory power as it adjusts for the number of variables included.

The standard error of the estimate (4.321) provides an estimate of the average distance that the observed values fall from the regression line. A lower standard error indicates that the model's predictions are close to the actual data points, implying higher precision and reliability of the model.

The model summary indicates a strong relationship between the inventory management practices (Just In Time, Activity Based Costing, Economic Order

Quantity, and Stocktaking Practice) and the operational performance of the Mombasa County government. With a high R-squared value and a low standard error, the model demonstrates a good fit, suggesting that these practices are crucial factors in improving operational performance. The Adjusted R-squared value further confirms the model's robustness, accounting for the number of predictors used.

These results emphasize the importance of effective inventory management practices in enhancing the efficiency and effectiveness of government operations, highlighting areas where focused improvements can lead to significant performance gains.

4.6.3 ANOVA[a] (F-Test) Analysis for Operational Performance

Table 4.14: ANOVA[a] (F-Test) Analysis for Operational Performance

Model	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Regression	1285.34	4	321.34	17.22	.000
Residual	998.66	89	11.22		
Total	**2284.00**	**93**			

a. Dependent Variable: Operational Performance of the County Government of Mombasa
b. Predictors: (Constant), JIT Model X_1, ABC X_2, EOQ X_3, Stocktaking X_4

Source: Research Data (2024)

The sum of squares for the regression (1285.34) represents the variation explained by the independent variables (Just In Time, Activity Based Costing, Economic Order Quantity, and Stocktaking Practice). The sum of squares for the residuals (998.66) represents the variation not explained by the independent variables. The total sum of squares (2284.00) is the total variation in the dependent variable (Operational Performance).

The degrees of freedom for the regression model is 4, corresponding to the number of independent variables. The degrees of freedom for the residuals is 89, which is the total number of observations minus the number of parameters being estimated (including the intercept). The total degrees of freedom is 93, corresponding to the total number of observations minus one.

The mean square for the regression (321.34) is the sum of squares for the regression divided by its degrees of freedom (1285.34 / 4). The mean square for the residuals (11.22) is the sum of squares for the residuals divided by its degrees of freedom (998.66 / 89).

The F value (17.22) is the mean square of the regression divided by the mean square of the residuals (321.34 / 11.22). This value is used to determine whether the independent variables explain a significant portion of the variance in the dependent variable.

The p-value (.000) indicates the probability that the observed F value would occur if the null hypothesis were true (i.e., the independent variables do not explain the variation in the dependent variable). Since the p-value is less than 0.05, it suggests that the model is statistically significant.

The ANOVA analysis indicates that the regression model is statistically significant, with an F value of 17.22 and a p-value of .000. This means that there is a very low probability that the relationship observed in the data is due to random chance. Therefore, the independent variables (Just In Time, Activity Based Costing, Economic Order Quantity, and Stocktaking Practice) significantly contribute to explaining the variation in Operational Performance.

The significant F value suggests that the inventory management practices included in the model are important factors in determining the operational performance of the Mombasa County government. This reinforces the findings from the correlation and model summary analyses, highlighting the critical role of these practices in enhancing operational efficiency and effectiveness.

4.6.4 Coefficients[a] for Operational Performance

Table 4.15: Coefficients[a] for Operational Performance

Model	**Unstandardized Coefficients (B)**	**Std. Error**	**Standardized Coefficients (Beta)**	**t**	**Sig. (p-value)**
(Constant)	5.123	1.789		2.864	.005
JIT (X_1)	0.467	0.112	.401	4.170	.000
ABC (X_2)	0.321	0.108	.285	2.972	.004
EOQ (X_3)	0.258	0.103	.230	2.505	.014
Stocktaking Practice (X_4)	0.398	0.115	.342	3.461	.001

Source: Research Data (2024)

The constant term (5.123) represents the expected value of Operational Performance when all the independent variables are equal to zero. This provides a baseline level of performance.

The unstandardized coefficient (B = 0.467) indicates that for each unit increase in Just In Time practice, the Operational Performance is expected to increase by 0.467 units, holding all other variables constant. The standardized coefficient (Beta = .401) shows that Just In Time has a strong positive impact on Operational Performance. The t value (4.170) and the p-value (.000) indicate that this coefficient is statistically significant, suggesting that Just In Time practices significantly improve operational performance.

The unstandardized coefficient (B = 0.321) indicates that for each unit increase in Activity Based Costing, the Operational Performance is expected to increase by 0.321 units, holding all other variables constant. The standardized coefficient (Beta = .285) shows a moderate positive impact on Operational Performance. The t value (2.972) and the p-value (.004) indicate that this coefficient is statistically significant, suggesting that Activity Based Costing significantly enhances operational performance.

The unstandardized coefficient (B = 0.258) indicates that for each unit increase in Economic Order Quantity, the Operational Performance is expected to increase by 0.258 units, holding all other variables constant. The standardized coefficient (Beta = .230) shows a moderate positive impact on Operational Performance. The t value (2.505) and the p-value (.014) indicate that this coefficient is statistically significant, suggesting that Economic Order Quantity practices significantly improve operational performance.

The unstandardized coefficient (B = 0.398) indicates that for each unit increase in Stocktaking Practice, the Operational Performance is expected to increase by 0.398 units, holding all other variables constant. The standardized coefficient (Beta = .342) shows a strong positive impact on Operational Performance. The t value (3.461) and the p-value (.001) indicate that this coefficient is statistically significant, suggesting that Stocktaking Practice significantly enhances operational performance.

The coefficients table shows that all four inventory management practices (Just In Time, Activity Based Costing, Economic Order Quantity, and Stocktaking Practice) have significant positive effects on the operational performance of the Mombasa County government. The significance levels (p-values) for all variables are below 0.05, indicating strong evidence against the null hypothesis and confirming the importance of these practices.

Just In Time has the strongest impact on operational performance, as evidenced by the highest standardized coefficient (Beta = .401). Stocktaking Practice also has a strong positive impact (Beta = .342), highlighting the importance of regular inventory audits.

Activity Based Costing and Economic Order Quantity both contribute positively to operational performance, though to a slightly lesser extent compared to Just In Time and Stocktaking Practice.

These results underscore the critical role of effective inventory management in enhancing the efficiency and effectiveness of government operations. Implementing these practices can lead to significant improvements in operational performance, demonstrating the value of strategic inventory management in the public sector.

4.6.5 Regression Equation

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$ was used to analyse the influence of the independent variables on the dependent variable.

Where:

Y = Operational performance of the county government of Mombasa;

X_1 = Just in time;

X_2 = ABC;

X_3 = EOQ;

X_4 = Stocktaking;

e = error term

Based on the provided coefficients, the regression equation to analyze the influence of the independent variables (Just in Time, Activity Based Costing, Economic Order Quantity, and Stocktaking) on the dependent variable (Operational Performance) is as follows:

$Y = 5.123 + 0.467 X 1 + 0.321 X 2 + 0.258 X 3 + 0.398 X 4 + e$

Intercept ($\beta 0 = 5.123$). The intercept (5.123) represents the baseline operational performance when all independent variables (Just in Time, ABC, EOQ, and Stocktaking) are at zero. While this baseline value provides a starting point, it's less meaningful in practical terms since these variables are not typically zero in real-world scenarios.

Just in Time ($\beta 1 = 0.467$). The coefficient for Just in Time (0.467) indicates that for each additional unit increase in Just in Time practices, the operational performance of the county government of Mombasa is expected to increase by 0.467 units, assuming other factors remain constant. This suggests that implementing Just in Time inventory

management significantly boosts operational performance, likely due to reduced inventory costs and improved efficiency.

Activity Based Costing (β2 = 0.321). The coefficient for Activity Based Costing (0.321) signifies that each unit increase in the application of ABC leads to a 0.321 unit increase in operational performance, all else being equal. This highlights the role of precise cost allocation in enhancing performance by providing better insights into resource usage and cost management.

Economic Order Quantity (β3 = 0.258). The coefficient for Economic Order Quantity (0.258) means that each unit increase in EOQ practices results in a 0.258 unit increase in operational performance, holding other variables constant. Implementing EOQ helps in optimizing order quantities and reducing holding and ordering costs, which positively impacts operational efficiency.

Stocktaking (β4 = 0.398). The coefficient for Stocktaking (0.398) indicates that each additional unit increase in stocktaking practices leads to a 0.398 unit increase in operational performance, assuming other factors remain constant. Regular and accurate stocktaking ensures inventory accuracy, minimizes losses due to discrepancies, and enhances overall operational control and performance.

The regression analysis reveals that all four independent variables—Just in Time, Activity Based Costing, Economic Order Quantity, and Stocktaking—positively influence the operational performance of the Mombasa County government. Each variable's coefficient is statistically significant, demonstrating its individual contribution to improving operational performance.

Just in Time practices have the strongest positive impact, followed by Stocktaking, Activity Based Costing, and Economic Order Quantity.

These findings emphasize the importance of integrating effective inventory management strategies to enhance operational efficiency and effectiveness in the public sector. The positive coefficients suggest that improvements in any of these areas will likely lead to better operational outcomes, thus highlighting key areas for potential investment and improvement. By strategically implementing and optimizing these inventory management practices, the Mombasa County government can achieve substantial gains in operational performance, leading to more efficient and effective public service delivery.

4.7 Hypothesis Testing

To test the hypotheses for the research on the effects of inventory management practices on operational performance in Mombasa County government, the researcher referred to the coefficients table and their respective significance levels (p-values). The hypotheses were tested using the t-values and p-values provided in the regression analysis.

i. **H1**: There is a significant influence of Just in Time (JIT) Model on Operational Performance of the county government of Mombasa.
ii. **H2**: There is a significant effect of Activity Based Costing (ABC) on Operational Performance of the county government of Mombasa.
iii. **H3**: There is a significant effect of Economic Order Quantity (EOQ) on Operational Performance in Mombasa County government.
iv. **H4**: There is a significant effect of Stocktaking on Operational Performance of the county government of Mombasa.

Table 4. 16: Coefficients[a] for Hypothesis Testing

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig. (p-value)
(Constant)	5.123	1.789		2.864	.005
JIT (X_1)	0.467	0.112	.401	4.170	.000
ABC (X_2)	0.321	0.108	.285	2.972	.004
EOQ (X_3)	0.258	0.103	.230	2.505	.014
Stocktaking Practice (X_4)	0.398	0.115	.342	3.461	.001

Source: Research Data (2024)

H1: Influence of Just in Time (JIT) on Operational Performance. t-value was 4.170. p-value was .000. Since the p-value is less than 0.01, reject the null hypothesis is rejected and the alternative hypothesis accepted. This means that Just in Time (JIT) has a significant positive influence on operational performance.

H2: Effect of Activity Based Costing (ABC) on Operational Performance. t-value was 2.972. p-value was .004. Since the p-value is less than 0.01, the researcher rejected the null hypothesis and accepted the alternative hypothesis. This indicates that Activity Based Costing (ABC) significantly affects operational performance.

H3: Effect of Economic Order Quantity (EOQ) on Operational Performance. t-value was 2.505. p-value was .014. Since the p-value is less than 0.05, the researcher rejected the null hypothesis and accepted the alternative hypothesis. This means that

Economic Order Quantity (EOQ) has a significant positive effect on operational performance.

H4: Effect of Stocktaking on Operational Performance. t-value was 3.461. p-value was .001. Since the p-value is less than 0.01, the researcher rejected the null hypothesis and accepted the alternative hypothesis. This indicates that Stocktaking has a significant positive effect on operational performance.

The results of the hypothesis tests indicate that Just in Time (JIT) practices have a significant positive influence on operational performance, with the strongest impact among the four variables tested. Activity Based Costing (ABC) also significantly improves operational performance, underscoring the importance of accurate cost management. Economic Order Quantity (EOQ) has a significant positive effect, highlighting the benefits of optimizing order quantities to reduce costs. Stocktaking significantly enhances operational performance, emphasizing the importance of regular inventory audits for accuracy and efficiency.

These findings suggest that implementing and optimizing these inventory management practices can lead to substantial improvements in the operational performance of the Mombasa County government. Each practice contributes uniquely and significantly, providing a comprehensive approach to enhancing efficiency and effectiveness in public sector operations.

The study found that the Just in Time (JIT) model has a significant positive influence on the operational performance of the Mombasa County government. The regression coefficient for JIT was 0.467, with a p-value of .000, indicating that improvements in JIT practices lead to substantial enhancements in operational performance. This

suggests that by reducing inventory holding times and minimizing waste, the county government can achieve higher efficiency and effectiveness in its operations.

Activity Based Costing (ABC) was found to significantly affect operational performance, with a regression coefficient of 0.321 and a p-value of .004. This indicates that implementing ABC allows for more accurate allocation of costs to activities, leading to better resource management and improved operational performance. By adopting ABC, the Mombasa County government can better understand and manage the costs associated with its activities, resulting in enhanced efficiency and effectiveness.

The study concluded that Economic Order Quantity (EOQ) has a significant positive effect on operational performance, with a regression coefficient of 0.258 and a p-value of .014. This demonstrates that optimizing order quantities to balance ordering and holding costs can lead to improved operational performance. By implementing EOQ, the Mombasa County government can ensure that it maintains optimal inventory levels, reducing costs and improving overall efficiency.

Stocktaking was found to have a significant positive effect on operational performance, with a regression coefficient of 0.398 and a p-value of .001. This indicates that regular and accurate stocktaking practices are crucial for maintaining inventory accuracy and preventing losses. By conducting frequent stocktakes, the Mombasa County government can improve inventory management, reduce discrepancies, and enhance operational control, leading to better performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This final chapter presents the results, a conclusion, study-based suggestions, and possible directions for further research.

5.2 Summary of Findings

5.2.1 Influence of JIT Model on Operational Performance of the County Government of Mombasa

According to the results, most respondents (Mean=3.9224, Std Dev=0.6946) agreed that the JIT Model had an impact on the Operational Performance of the County Government of Mombasa. JIT Model had a significant correlation between the Operational Performance of the County Government of Mombasa ($\beta = 0.243$, $p < 0.05$). From the descriptive analysis, the majority of respondents supported direct customer delivery of completed goods (Mean=3.978, Std Dev =0.783) and agreed that work in progress is always at the minimum amounts (Mean=4.421, Std Dev = 0.898). The majority (Mean=3.754, Std Dev=0.606) agreed that wasting work in progress is rarely the case. Additionally, most respondents stated that suppliers set the schedule for services and that they do it in the quickest amount of time (Mean=3.628, Std Dev=0.621; Mean=3.831, Std Dev=0.565).

5.2.2 Influence of Activity Based Costing (ABC) Practice on Operational Performance of the County Government of Mombasa

From the descriptive analysis, most respondents (Mean=4.044, Std Dev=0.536) agreed that the Activity Based Costing (ABC) Practice had an influence on Operational Performance of the County Government of Mombasa. The majority of respondents believed that the application of ABC had improved market intelligence (Mean=3.89, Std Dev =0.54) and reduced administration costs (Mean=4.33, Std Dev =0.63). The majority (Mean = 3.81, Standard Deviation = 0.66) agreed that operational and inventory costs should be decreased. Furthermore, the majority of respondents concurred that the ABC method has shortened procurement cycle times (Mean=3.99, Std Dev =0.32) and improved decision making (Mean=4.2, Std Dev = 0.53). Activity Based Costing (ABC) Practice had a significant correlation between the Operational Performance of the County Government of Mombasa ($\beta = 0.321$, $p < 0.05$).

5.2.3 Influence of Economic Order Quantity (EOQ) Practice on Operational Performance of the County Government of Mombasa

Descriptive analysis shows that most respondents (Mean=3.786, Std Dev=0.636) agreed that the Activity Based Costing (ABC) Practice had an influence Operational Performance of the County Government of Mombasa. Majority of responses, which indicate that the implementation of Economic Order Quantity (EOQ) has contributed to both improved product quality (Mean = 3.69, Std Dev = 0.79) and a reduction in waste (Mean = 3.96, Std Dev = 0.48). There has been timely delivery of goods and timely delivery of services since the introduction of Economic Order Quantity (EOQ), according to the majority (Mean=3.79, Std Dev = 0.48). Activity Based Costing

(ABC) Practice had a significant correlation between the Operational Performance of the County Government of Mombasa ($\beta = 0.321$, $p < 0.05$).

5.2.4 Influence of Stocktaking Practice on Operational Performance of the County Government of Mombasa

From the descriptive findings, most respondents (Mean=3.696, Std Dev=0.832) agreed that Stocktaking Practice had an effect on Operational Performance of the County Government of Mombasa. The respondents agreed that county government conducts Real-time updates on stock levels (mean = 3.75, SD = 0.97), the county government has centralized inventory management (mean = 3.72, SD = 0.83), there is effort of prevention of stock outs (products getting out of stock) (mean = 3.47, SD = 0.98). Stocktaking Practice had a significant correlation between the Operational Performance of the County Government of Mombasa ($\beta = 0.251$, $p < 0.05$).

5.3 Conclusions

The highest percentage (Standardized Coefficients - Beta) was Just in Time (X_1) = .401 and the lowest Beta was Economic Order Quantity (X_3) = .230.

Just in Time (JIT) practices had the strongest influence on the operational performance of the Mombasa County government, with a standardized coefficient (Beta) of .401. This indicates that improvements in JIT practices can lead to significant enhancements in operational performance. Implementing JIT helps reduce inventory holding costs, minimize waste, and improve efficiency, thus having the highest positive impact on performance.

Activity Based Costing (ABC) significantly affected operational performance, with a standardized coefficient (Beta) of .285. This suggests that ABC contributes to better resource management and cost allocation, which in turn improves operational performance. By implementing ABC, the Mombasa County government can achieve more accurate cost tracking and better decision-making.

Economic Order Quantity (EOQ) had the lowest positive impact on operational performance among the four practices, with a standardized coefficient (Beta) of .230. Despite being the lowest, this effect is still significant, indicating that optimizing order quantities to balance ordering and holding costs is beneficial. Implementing EOQ can help the county government maintain optimal inventory levels and reduce costs, thereby enhancing performance.

Stocktaking practices had a substantial positive effect on operational performance, with a standardized coefficient (Beta) of .342. This highlights the importance of regular and accurate stocktaking in maintaining inventory accuracy and reducing discrepancies. Effective stocktaking ensures better control over inventory, which significantly boosts operational performance.

5.4 Recommendations

Based on the conclusions drawn from the study, the following recommendations are made to enhance the operational performance of the Mombasa County government through improved inventory management practices:

The Mombasa County government should adopt Just in Time (JIT) inventory management practices to reduce inventory holding times and minimize waste. This can be achieved by closely coordinating with suppliers to ensure timely delivery of materials and products as needed. Implement training programs for staff to understand and effectively use JIT principles. This includes educating employees on the benefits of JIT and how to apply it in their daily operations. Utilize technology to enhance JIT practices, such as adopting inventory management software that supports real-time tracking and monitoring of inventory levels.

The county government should implement Activity Based Costing (ABC) to accurately allocate costs to specific activities, leading to better resource management. This involves identifying all activities involved in operations and assigning costs based on actual resource usage. Conduct workshops and training sessions for financial and operational staff to ensure they understand the ABC methodology and can apply it effectively. Regularly review and update the ABC system to reflect any changes in activities or resource usage, ensuring that cost allocation remains accurate and relevant.

The county government should adopt the Economic Order Quantity (EOQ) model to optimize order quantities, balancing ordering and holding costs. This helps maintain optimal inventory levels and reduces overall costs. Implement EOQ calculations into the inventory management system to automate the process of determining the most

cost-effective order quantities. Train procurement and inventory management staff on the principles of EOQ and how to apply it in their purchasing decisions, ensuring that orders are placed at the right times and in the right quantities.

The Mombasa County government should establish a regular schedule for stocktaking to ensure inventory accuracy and reduce losses due to discrepancies. This includes conducting physical inventory counts at regular intervals. Invest in training for staff responsible for stocktaking to ensure they understand the importance of accurate inventory counts and are proficient in the techniques required. Utilize inventory management systems that support automated and accurate stocktaking processes, such as barcode scanning and RFID technology, to improve accuracy and efficiency in inventory counts.

5.5 Areas for Further Research

Using the same independent variables, future research might compare how inventory management strategies affect operational performance in other county governments. Since this research study was cross-sectional, additional research should use longitudinal study to corroborate cross-sectional findings and examine performance before and after implementation of inventory management practices at different time periods. This will provide insights into the refinement of the pertinent items. Additionally, as this study only used data from Mombasa County Government employees, it may be necessary to conduct additional research with additional respondents who are suppliers and members of the public in order to validate or refute its findings.

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APPENDIX 1: LETTER OF INTRODUCTION

Mount Kenya University

Mombasa Campus

Date…….

Dear Sir / Madam,

RE: DATA COLLECTION

My name is Joram Tovesi Simwa, a Masters student from Mount Kenya University, I am doing research on the "*Effects of Inventory Management Practices on Operational Performance in Mombasa County Government"*.

I request you to kindly fill in the attached questionnaire honestly. Note that this research is meant for academic purposes only. Be assured of confidentiality with regard to your responses.

Yours faithfully,

Joram Tovesi Simwa.

APPENDIX II: CONSENT FORM FOR PARTICIPATION IN RESEARCH

EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE IN MOMBASA COUNTY GOVERNMENT

Dear Participant,

I invite you to participate in a research study entitled ***Effects of Inventory Management Practices on Operational Performance in Mombasa County Government***: I am currently enrolled in the Master of Science Degree in Procurement and Supplies Management at Mount Kenya University and am in the process of writing my Master's project. The purpose of the research is to determine: ***Effects of Inventory Management Practices on Operational Performance in Mombasa County Government.*** The enclosed questionnaire has been designed to collect information on: ***Effects of Inventory Management Practices on Operational Performance in Mombasa County Government:***

Your participation in this research project is completely voluntary. You may decline altogether, or leave blank any questions you don't wish to answer. There are no known risks to participation beyond those encountered in everyday life. Your responses will remain confidential and anonymous. Data from this research will be kept under lock and key and reported only as a collective combined total. No one other than the researchers will know your individual answers to this questionnaire. There are no direct benefits to you for participating in this research. However, you may find it interesting to talk about the issues addressed in the research and it may be beneficial to the field and to future clients or individuals who have experienced similar concerns

If you agree to participate in this project, please answer the questions on the questionnaire as best you can. It should take approximately ***20 minutes*** to complete. Please return the questionnaire as soon as possible to enable me complete the project report.

If you have any questions about this project, feel free to contact *the INVESTIGATOR*, Mr. Tovesi Simwa, +254710576506, Email: tovesisimwa@gmail.com or Dr. BarasaWamalwa; Tel. 0721203761. Email: bwamalwa@mku.ac.ke.. If you have questions about your rights as a research participant, please be in touch with the Chairman, Mount Kenya University, Ethical Review Committee, P.O Box 342-01000, Thika.

Thank you for your assistance in this important endeavor.

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

APPENDIX III: QUESTIONNAIRE

You are kindly requested to respond to the items in this questionnaire as truthfully as possible. All your responses shall be treated confidentially, and will only be used for the purpose of this study.

Part 1: Background Information

Instructions: Indicate your response by ticking [√] in the brackets provided.

Your gender

Male [ ] Female [ ]

Your designation

Management [ ] Employee [ ]

Respondents' Years of Experience

How long have you worked at the County government?

1-5 years	[ ]	6-10 years	[ ]
11-15 years	[ ]	16-20 years	[ ]
21-25 years	[ ]	26 and above	[ ]

SECTION B: Effect of Just in Time Model on

You are kindly requested to state your level of agreement in relation to each of the given items concerning Just in time on a 5-point scale. Insert a tick (√) in the most appropriate column.

1- Strongly disagreed, 2- Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

		1	2	3	4	5
i	Work in progress is always at the minimum quantities					
ii	Finished goods are directly delivered to customers					
iii	Wasting work in progress seldom occurs					
iv	Services are provided in the shortest time possible					
v	Timetable scheduling is made by suppliers					

SECTION C: Activity Based Costing (ABC)

You are kindly requested to state your level of agreement in relation to each of the given items concerning ABC, on a 5-point scale. Insert a tick (√) in the most appropriate column.

1- Strongly disagreed, 2- Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

		1	2	3	4	5
i	Reduced Administration Costs					
ii	Improved Market Intelligence					
iii	Reduced Operational & Inventory Costs					
iv	Enhanced Decision making					
v	Shortened Procurement Cycle Times					

SECTION D: Economic Order Quantity (EOQ)

You are kindly requested to state your level of agreement in relation to each of the given items concerning EOQ on a 5-point scale. Insert a tick (√) in the most appropriate column.

1- Strongly disagreed, 2- Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

		1	2	3	4	5
i	Reduction in wastes					
ii	Improved quality of products					
iii	Improved quality of services					
iv	Timely delivery of products					
v	Timely delivery of services					

SECTION E: Stock taking

You are kindly requested to state your level of agreement in relation to each of the given items concerning stock taking on a 5-point scale. Insert a tick (√) in the most appropriate column.

1- Strongly disagree, 2- Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

		1	2	3	4	5
i	Real-time updates on stock levels					
ii	Fewer inventory counts					
iii	Centralized inventory management					
iv	Prevention of stock outs (products getting out of stock)					
v	Less overtime pays					

SECTION F: Operational performance

9. You are kindly requested to state your level of agreement in relation to each of the given items concerning operational performance, on a 5-point scale. Insert a tick (√) in the most appropriate column.

1- Strongly disagreed, 2- Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

		1	**2**	**3**	**4**	**5**
i	Improved labor productivity					
ii	Enhanced customer service					
iii	Faster inventory turns					
iv	Reduction in cost operations					
v	Increased operations efficiency					

Thank you for participating

APPENDIX IV: INTRODUCTION LETTER

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MPSM/2021/72641

31st October 2023

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

Dear Sir/Madam,

RE: JORAM TOVESI SIMWA- REGISTRATION NO. MPSM/2021/72641

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 **"Effects of Inventory Management Practices on Operational Performance in Mombasa County Government."** 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 **November, 2023 and January, 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 V: ERC CERTIFICATE

Mount Kenya University

REF: **MKU/ISERC/3282**
TO: **JORAM TOVESI SIMWA**

Date: 30 October 2023

REG: **MPSM/2021/72641**

Dear Sir/Madam,

RE: EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE IN MOMBASA COUNTY GOVERNMENT

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2326.** The approval period is **30/10/2023 - 29/10/2024.**

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.

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

Yours sincerely,

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

APPENDIX VI: NACOSTI CERTIFICATE

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **897117**

Date of Issue: **14/November/2023**

RESEARCH LICENSE

This is to Certify that Mr.. Joram Tovesi Simwa 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 Mombasa on the topic: EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE IN MOMBASA COUNTY GOVERNMENT for the period ending : 14/November/2024.

License No: **NACOSTI/P/23/31180**

897117

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 VII: PLAGIARISM REPORT

EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE IN MOMBASA COUNTY GOVERNMENT

ORIGINALITY REPORT

11%	%	11%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Gemachis Debala, Mohd Abass Bhat, Shagufta Tariq Khan. "Exploring the Nexus of inventory optimization and operational efficiency: Data-driven insights from public sector organizations in Ethiopia", Cogent Business & Management, 2023 Publication	1%
2	"Artificial Intelligence and Transforming Digital Marketing", Springer Science and Business Media LLC, 2024 Publication	1%
3	Binitah Bosibori, Moses Otieno. "Influence of Project Management Practices on the Implementation of Environmental Non-Governmental Organizations' Projects: A Case of World Wide Fund for Nature-Kenya, Kwale County", Academia Letters, 2021 Publication	1%