

**EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON
PROCUREMENT FUNCTION PERFORMANCE OF COUNTY PUBLIC
SECONDARY SCHOOLS IN THARAKA NITHI COUNTY, KENYA.**

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**A Thesis Submitted to the Graduate School in Partial Fulfillment of the
Requirements for the Award of the Degree of Master of Science in Procurement
and Logistics Management of Chuka University**

CHUKA UNIVERSITY

OCTOBER 2024

DECLARATION AND RECOMMENDATION


Declaration

This thesis is my original work and has not been presented for award of Degree in any other university.

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DEDICATION

This thesis is dedicated to my dear wife Mercy Njeri, Daughters Ivana Kendi, Tracy Mukami and Son SethMyles Murithi for their psychosocial support throughout my study and research period. I further dedicate this thesis to my dear mum Jenniffer for her great love for education and her blessings that propelled me to pursue my studies this far.

ACKNOWLEDGEMENT

I humbly acknowledge the grace of the almighty and supreme loving God for granting me good health, knowledge, strength and zeal to undertake my studies successfully.

Several people played a vital role in regards to the successful completion of my studies. I gratefully acknowledge my great supervisors Prof Gilbert Miriti and Dr Miriam Thogori for their professional guidance, encouragement, moral support and inspiration during this study. May God bless you abundantly.

In addition, a heartfelt thank you to: Prof. Andrew T. Muguna, Dr. Nebat Galo, Dr Lucy .K. Njagi, Dr. Masinde Wabwire, Dr. Tetu Mwenda, Madam Jane Mumbi and Mr. Lucas Waweru of Chuka University Faculty of Business Studies for their input that shaped the study's conceptualization, modelling and design.

I also register appreciation to my friends and colleagues Margret Mogusu, Eunice Thionkoru and Kelvin Gikunda for their academic support. You have made my life easier through your encouragement and support. Finally, I appreciate all the respondents who took their time to respond to the research questionnaires.

ABSTRACT

Supply chain management practices can boost an organization's overall competitive edge by facilitating timely delivery of high-quality products and services at a competitive cost. Public secondary schools and other organizations have been the target of several efforts to improve supply chain management, yet reports of wasted public cash and substandard products and services persist. Therefore, the researcher sought to establish the effect of supply chain management practices on performance of procurement function in county public secondary schools in Tharaka Nithi County, Kenya. Specifically, the study sought to examine the effect of information sharing, inventory management, tendering process and supply chain personnel competency on procurement function performance in county public secondary schools in Tharaka Nithi County, Kenya. The study also sought to determine the moderating effect of ICT integration on the relationship between supply chain management practices and procurement function performance of county public secondary schools in Tharaka Nithi County. Institutional theory, commitment-trust theory, knowledge-based theory, and transactions-cost economics theory anchored this research. This research used a descriptive cross sectional survey design. The target population was fifty two county public secondary schools in Tharaka Nithi County. The study was a census of all the fifty two county public secondary schools with the target respondents being, 2 procurement committee members and 1 user representative. Making a total of three respondents in each secondary school. Therefore there was a total of 156 target respondents. A questionnaire was used to gather data. The instrument was piloted in five county public secondary schools in Embu County, selected at random in order to assess the questionnaire's validity and reliability. The study obtained a reliability coefficient of above 0.70 for all variables. Tables and graphs showcased the results of the data analysis, which included descriptive and inferential statistics. To determine the importance of each objective at the 5% confidence level, descriptive and inferential statistics were used. The regression results revealed there is a strong relationship between sharing of information and the performance of procurement (regression coefficient was 0.697, P value was $0.000 < 0.05$). The relationship between inventory management and procurement performance is clearly statistically significant (regression coefficient was 0.412, P value was $0.001 < 0.05$). The relationship between supply chain personnel competency and procurement performance is clearly statistically significant (regression coefficient was 0.822, P value was $0.000 < 0.05$). The relationship between tendering procedure and procurement performance was statistically significant (regression coefficient was 0.240, P value of $0.000 < 0.05$). Furthermore, the relationship between procurement function performance and the independent variables (information sharing, inventory management, tendering procedure, and supply chain personnel competency) was moderated by integration to a statistically significant degree. This study will contribute to the understanding of the factors that impact procurement function performance in county secondary schools supply chain management practices, guide regulators in their efforts to improve these practices and inform policymakers about how to improve these strategies.

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LIST OF ABBREVIATIONS AND ACRONYMS

COMESA	Common Market for East and South Africa States
CRM	Customer Relationship Management
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FSE	Free Secondary Education
GDP	Gross Domestic Product
HPM	High Performance Manufacturing
ICT	Information Communication Technology
KACC	Kenya Anti-Corruption Commission
KESSP	Kenya Education Sector Support Programme
MOE	Ministry of Education
PPADA	Public Procurement Asset Disposal Act
PPCRAB	Public Procurement Complaints, Review and Appeals Board
PPD	Public Procurement Directorate
PPDR	Public Procurement Disposal Regulations
PPOA	Public Procurement Oversight Authority
PPRA	Public Procurement Regulatory Authority
SCM	Supply Chain Management
SPSS	Statistical Package of Social Sciences
STD	Standard Tender Documents
TCO	Total Cost of Ownership
USA	United States of America

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Supply chain management practices (SCMP) are the norms and guidelines for organising the production and distribution of products and services from their inception to completion (Wanja & Achuora, 2020). According to Kwamega and Abrokwah (2018), effective supply chain management strategies lead to greater cooperation, quality control, efficiency, meeting demand, shipping optimization, reducing risk, and increasing cash flow. According to Mwangi (2019), supply chain complexity, rising costs across the board, and other related issues pose the greatest threats to current methods of supply chain management. The need to enhance speed, quality, and service is driven by consumer demands and the need to mitigate supply chain risk. Additionally, the effect of supply chain instability is magnified by the many channels to market.

Companies in the public and private sectors have recently focused on procurement performance and supply chain management practices as a result of rising levels of competition and technological advancements in the entrepreneurial sector. Since a strategic approach to procurement may assist an organization in reaching its policy goals and getting the most out of its expenditure on goods and services, businesses have been prioritizing it more lately (Wanja & Achuora, 2020). In order to keep up with the competition brought about by globalization and technological breakthroughs, organizations will need to re-engineer their processes. Maintaining happy and loyal customers requires organizations to work with suppliers and consumers to guarantee timely delivery of requested commodities. As a result of developments in information and communication technologies, e-procurement has been promoted as a way to improve the effectiveness and efficiency of procurement (Sundram et al., 2020). The reason for this is because, as stated by Rachim *et al.* (2023), a company may improve product quality, save costs, and minimize supply chain and production waste via improved procurement and supply chain management methods. Therefore, public and private sector organizations may improve their procurement performance and accomplish their goals with improved supply chain management practices and efficient procurement function management.

Similarly, in Pakistan, having cordial connections and sharing information with suppliers leads to better organizational performance (Hassan et al., 2014). Santa et al. (2011) looked at how collaboration in the supply chain affected Australia's ability to innovate continuously. According to the research, various buyer-supplier relationships could affect company operations and innovation. Additionally, the survey showed that organization ability to interact with partners has allowed them to implement both radical and incremental innovations, as well as integrate and connect operations for higher effectiveness.

Otchere *et al.* (2013) focused on the challenges of cocoa industry supply chain integration and collected data in Ghana. According to the research, procurement performance is influenced by elements such as integrated databases, information sharing, and technological improvements. In 2016, Samadi and Kassou investigated how IT in Morocco affected supply chain performance. One of the most important aspects of a well-functioning supply chain, according to the authors, is the buyer-supplier relationship's emphasis on open communication and cooperation across different businesses. In 2012, Ibrahim and Hamid looked at how industrial enterprises in Sudan fared while using supply chain management approaches. The study indicated that in order for manufacturing enterprises in Sudan to achieve successful supply chain performance, buyer-supplier management, information sharing, and short reaction times were crucial strategies.

The relationship between supply chain optimization and real-time information processing was studied by Makori et al. (2016) in Nairobi, Kenyan supermarkets. The study found that every single store uses some kind of real-time information processing system. The research showed that by exchanging data in real-time, labour costs might be reduced and supply chain visibility could be improved. Quite a bit of real-time information processing inventory was there. Among other aspects, the research discovered no relationship between the number of complaints from customers and the quantity of orders with complaints and real-time information processing.

The effect of strategic buyer-supplier relationships on procurement effectiveness in Nairobi's private manufacturing enterprises was conducted by Kemunto and Ngugi

(2014). The research shows that procurement performance is enhanced by strategic buyer-supplier collaborations. The research also shown that the governance structure had a significant impact on the link between procurement performance and strategic buyer-supplier collaboration. The connection between vendor managed inventory in mill processing firms and supply chain performance was studied by Jepchumba (2015) in Kenyan sugar processing industries. The research proved that supply chains may benefit from the use of ICTs. Improving suppliers' lead times will lead to increased supply chain performance, according to the research. All links in the supply chain should get full investment from businesses.

The 2019 Secondary Schools and Colleges Procurement Manual details the procedures for purchasing materials for public secondary schools in Kenya. Since they are publicly owned and receive funding from the government via free or subsidized secondary education programs, along with other donors and the schools' parents and sponsors, public secondary schools are required to adhere to the procurement handbook in order to enhance their procurement performance. Funds could also come from other places, such fundraisers and grants (Ministry of Education, 2018). Public procurement is the means by which these entities acquire goods and services. The secondary schools and colleges procurement manual (2019) cites further ministry of education publications that lay out the rules for buying goods like textbooks and school buildings in more detail.

The PPADA Act of 2020 mandates that educational institutions, as public purchasing organizations, form tender committees to oversee procurement on several fronts. The legal framework has also established the makeup of these bodies. The Schools and Colleges Procurement Manual (2019) and PPDA (2020) detail the functions and responsibilities of the tender committee that is responsible for purchasing products. The authority to direct and supervise the whole tendering process is delegated to school tender committees under the PPADA Act. Here is the composition of the committee: There are at least six department heads, including the matron, and the chairman is the deputy principal. The bursar is also a deputy chairman.

On the other hand, several public complaints and audit reports have pointed to issues such as subpar products and services, lengthy delivery times, resource wasting, inefficient use of allocated money, and unfinished projects (Wanja & Achuora, 2020). Obviously, these ills may still be perpetrated by practitioners due to certain aspects of procurement practice; these issues in turn affect the procurement performance of several government organizations, including public schools. Given the disparity between the scholars' findings and the requirements of the PPDA (2020), it is evident that public secondary schools require additional investment in their procurement functions and that strategies to mainstream open tendering should be defined with utmost seriousness. Consequently, public school procurement performance will always fall short of expectations unless the public procurement process and well defined procurement laws are rigorously enforced.

Parts of an SCMP include procedures for exchanging information, methods for tendering on contracts, the competency of supply chain employees, methods for keeping track of inventories, rules for purchasing, methods for reducing costs, and strategies for acquiring goods and services. Data exchange, stock control, the tendering procedure, and the competence of supply chain employees were all aspects of SCMP that were the subject of the research. There is a correlation between SCMP and procurement performance, according to the literature assessment. To illustrate the impact of supplier engagement and buyer-supplier interactions on performance, Owago et al. (2021) examined the effects of information sharing on the performance of firms located in New York. The poll found that in order to have successful procurements, businesses needed to use accurate and adequate data. Businesses' performance will be affected by this, thus it's important for procurement operations to be informed of the product.

Patrucco et al. (2022) set out to answer the question, "Can you grow your supply chain without skills?," in their research. The purpose of this research was to investigate how human resource management impacted supply chain management in Latin America. Specifically, the study aimed to determine how supply chain (SC) personnel gained a competitive edge via knowledge acquisition and utilization. The level and quality of information shared among supply chain partners are crucial.

Enhanced information sharing leads to better decision-making and forecasting, reducing uncertainties in procurement processes. The authors examined the link between supply chain (SC) level outcomes and SC personnel's skills and talents, job satisfaction, external network of contacts, and business training investments. They also looked at the relationship between SC level results and these factors.

According to the results, SC professionals' performance and happiness on the job are impacted by their level of competence and the breadth of their professional networks. Investing in highly skilled human capital is crucial since they have the potential to increase knowledge acquisition, utilization, and, in the long run, SC competitiveness. Better SC outcomes and higher procurement performance are the rewards for businesses which invest more in staff education to become SC experts. In order to improve their procurement performance, public secondary schools should provide more funds to educate their supply chain staff, according to the results. Following a detailed discussion of each SCMP in the literature study, this study provided some background information on its implementation in secondary schools and how it relates to procurement performance.

Information sharing describes the exchange of data between various organizations, people and technologies (Odhiambo *et al.*, 2020). One aspect of information sharing procedures is the transmission of crucial company messages and reports (Odhiambo *et al.*, 2020). In 2021, Owago *et al.* investigated how sharing knowledge affected the success of businesses in New York. Understanding the impact of supplier engagement and buyer-supplier relationships on production was the primary objective of the research. The research states that in order for companies to buy the correct goods, they need enough and correct information. Businesses' performance will be affected by this, thus it's important for procurement operations to be informed of the product. In order for information to be used for decision making, it must be communicated to the other side in a clear and timely manner. Sharing information and establishing connections with a company's suppliers may lead to better organizational performance (Hassan, Habib, & Khalid, 2014). Successfully navigating the current highly competitive global business environment is heavily dependent on an organization's ability to manage its relationships with internal and external stakeholders, including

suppliers, through effective and positive information sharing, according to Hui et al. (2021). The rationale behind this is that when suppliers and organizations work together, everyone benefits. An important aspect of the supply chain's efficiency is the information that partners communicate with one another.

Implementing collaborative platforms for information sharing allows for real-time communication among supply chain partners. This transparency fosters trust and enables quicker decision-making, which is essential for effective procurement operations. Information sharing helps in alignment and ensures that all stakeholders are informed and can respond promptly to changes in demand or supply conditions.

Inventory management refers to the management of goods and materials that a business holds for the ultimate goal of resale, production or utilization (Kamau & Kagiri, 2015). If properly implemented, inventory management strategies may assist government agencies in enhancing their procurement efficiency. Khan and Siddiqui (2019) state that in order to effectively manage inventory, one must first establish a buying strategy to guarantee the timely availability of necessary commodities and then monitor the consumption of current inventory. Wedam Medical Centre and War Memorial Hospital in Ghana were the subjects of Tang and Anane's (2023) investigation into the effects of inventory management techniques on operational effectiveness. The researchers found that formal collaborative planning, forecasting, and replenishment (CPFR) agreements between various supply chain stakeholders are necessary for effective inventory management. According to the results, inventory management strategies significantly affect the operational efficiency of various healthcare facilities. On the other hand, hospitals may not be able to reap the full benefits of these approaches due to issues like insufficient infrastructure and training. The paper recommends that hospital administrations delegate inventory management responsibilities to departmental specialists who have had the appropriate training to use computerised software.

According to Kipchumba and Keitany (2021), in order to avoid under- or overstating earnings, a company has to fill its shelves and employ the right approach to evaluate its inventory. A couple of popular approaches to inventory management are materials

requirement planning and the just-in-time technique. The former involves anticipating when products will be required while the latter involves scheduling material delivery according to sales projections. Reducing the need to hold excessive volumes of material in the warehouse, just-in-time gets materials into the manufacturing process, warehouse, or to the consumer just in time to be utilised (Musara, 2012).

Companies or individuals express their interest in responding to a call for tenders by submitting bids to construct, sell, or provide services in return for money. Eriksson and Westerberg (2011), the main goal of the tendering process is to choose a suitable contractor at an appropriate time and get a suitable tender or offer from him at the appropriate timing in order to let a contract. Tendering is a crucial part of the procurement process that might be made more efficient with the use of technology. One way that procurement professionals may step in and make sure that tender data is better and safer to access is via tendering (Davila & Gupta, 2012; Henriksen et al., 2014). According to Gathima and Njoroge (2018), giving careful thought to adopting and implementing a range of e-tendering features is necessary to ensure the continued development of e-tendering processes. Conventional tendering is still widely used by most Kenyan firms, according to a 2016 report by Wakami on the use of e-tendering and the procurement performance of Kenyan oil marketing enterprises. However, e-tendering and the efficiency of procurement were highly correlated. The adoption of electronic tendering (E-tendering) significantly streamlines the procurement process. It reduces the time and costs associated with traditional paper-based methods, leading to faster and more efficient tendering operations.

Competence in the supply chain is a construct that can be learnt, measured, and developed; it may stand in for actions, responsibilities, or anticipated abilities related to supply chain operations (Kurniawan et al., 2020). Purchasing and supply management success. Purchasing and supply management is greatly affected by the proficiency of PSM experts. In today's human-centered PSM function, companies strategically value the input of their people resources. PSM is a rapidly developing and more professionalized area that is carving out its own niche. Continuous professional development ensures that employees are equipped with the necessary skills to manage complex supply chains effectively, leading to improved procurement

outcomes. According to Patrucco et al. (2022), professionals' goals, objectives, or purposes could differ according on the methods used by the company. The ability to efficiently handle the physical movement of commodities is a critical competency in the supply chain (Emmett & Crocker, 2016). This includes the following areas: logistics communication, storage and warehouse management, material handling, and distribution. The capacity to avoid increased pricing and reduced profitability is a direct result of well-managed supply chains, which guarantee the timely arrival of raw materials to industrial production facilities. Organizations, including county public secondary schools in Tharaka Nithi, Kenya, in particular, may benefit from improved performance when competent supply chain professionals apply supply chain management principles to all procurement procedures.

A company's decision to implement and make use of a certain ICT is affected by a multitude of factors. Abdullahi et al. (2020) classified factors that can influence the uptake and utilization of ICTs into five broad classes: personal, task-and innovation-related, organizational, and environmental. Using Malaysia as an example, Sundram, Chhetri, and Bahrin (2020) looked at how IS and IT impacted the industrial supply chain process. The objective was to measure the effects on Malaysian manufacturing firm performance (FP), supply chain integration (SCI), and supply chain performance (SCP). In order to collect data, the study team sent out questionnaires to 112 Malaysian manufacturing businesses. The relationship between FP, SCI, IT, and IS is investigated by multiple regression analysis. The study's findings showed that SCI and performance were both greatly enhanced by IT and sharing. Information technology (IT) and information systems (IS) adoption among supply chain partners is higher among companies that integrate their internal and external value chains to boost performance throughout the industrial enterprises in the supply chain. Supply chain practitioners, such as public secondary schools, may use the findings on IT and IS approaches to strategically enhance SCI. Consequently, the procurement performance and supply chain network of public secondary schools will improve.

Public secondary schools must follow the procurement handbook since they are government-owned and receive financing from the free (supported) secondary education program. In addition, these schools' sponsors and parents collaborate with

other contributors to improve procurement results. Grants and fundraising are two potential sources of additional funding (Ministry of Education, 2018). In order to obtain goods and services, these organizations utilize public procurement. The secondary schools and colleges procurement manual (2019) cites further ministry of education publications that lay out the rules for buying goods like textbooks and school buildings in more detail.

Public buying organizations, such as educational institutions, are mandated to form tender committees under the PPDA of 2020 to oversee procurement procedures at different levels. The composition of these committees is likewise defined by the law. The Schools and Colleges Procurement Manual (2019) and the PPDA (2020) outline the composition and duties of the tender committee that is in charge of product procurement. The Act vests the responsibility of overseeing and managing the whole tendering process in school tender committees.

Supply chain management in public secondary schools involves processes related to the procurement, logistics, and distribution of educational materials, such as textbooks and learning resources (Lysons & Farrington, 2020). Effective SCM practices are essential for enhancing educational quality and ensuring that schools have the necessary resources to support teaching and learning. Public secondary schools are often bound by stringent procurement regulations that require obtaining multiple quotations from suppliers. This can lead to delays and inefficiencies, particularly for Section 20 schools, which depend on the Department of Education (DoE) for procurement decisions. Many staff members involved in SCM lack proper training and understanding of effective procurement practices. This deficiency can lead to mismanagement of resources and inefficient procurement processes. These schools lack the autonomy to choose suppliers or negotiate prices directly, which can result in excessive pricing and poor quality of goods received. The requirement for multiple quotations does not always guarantee quality, as schools may receive substandard materials from suppliers who are not adequately vetted. This can compromise the overall educational experience for students.

On the other hand, several public complaints and audit reports have pointed to issues such as subpar products and services, lengthy delivery times, resource wasting, inefficient use of allocated money, and unfinished projects (Wanja & Achuora, 2020). Obviously, these ills may still be perpetrated by practitioners due to certain aspects of procurement practice; these issues in turn affect the procurement performance of several government organizations, including public schools. In addition, the assessed PSS's procurement role and the legal framework are quite different. Due to the discrepancy between the researchers' findings and the PPDA's (2020) requirements, there is a pressing need to refine the procurement function and devise plans to make open tendering the principal method of procurement in public secondary schools. Thus, without a rigorous implementation of the public procurement process and well-defined procurement laws in public schools, procurement performance would always fall short. This prompted research into how Tharaka Nithi County secondary schools' procurement performance changed after using supply chain management strategies.

1.2 Statement of the Problem

The performance of public secondary schools in Tharaka Nithi County is increasingly scrutinized due to concerns about educational outcomes, resource allocation, and overall effectiveness. Despite the critical role that supply chain management (SCM) practices play in enhancing operational efficiency and resource utilization, many public secondary schools in this region continue to face significant challenges. These challenges include inadequate procurement processes, inefficient inventory management, and limited supplier relationships, which hinder the ability of schools to deliver quality education. Research indicates that effective SCM practices can lead to improved performance metrics such as student achievement, resource availability, and financial management. Existing literature suggests that poor SCM practices contribute to inefficiencies and waste, ultimately affecting educational quality and student outcomes. Moreover, the unique socio-economic context of Tharaka Nithi County, characterized by limited resources and infrastructural challenges, necessitates a focused investigation into how SCM practices can be optimized to enhance school performance. In summary, this study aims to investigate the effect of supply chain management practices on the performance of procurement function in county public secondary schools in Tharaka Nithi County. Several studies have examined the impact

of supply chain management practices on organizational performance and used different methodology, different variables and found divergent opinions. But minimal studies have employed all five factors and ideas in this study has done research that combines them all. Consequently, this research addressed such gaps by looking at how SCMP affects procurement function performance in Kenyan public secondary schools in Tharaka Nithi County.

1.3 Objective of the Study

This study was guided by both general and specific objectives;

1.3.1 General Objective

The general objective of the study was to assess the effect of supply chain management practices on performance of procurement function in County Public Secondary Schools in Tharaka Nithi County.

1.3.2 Specific Objectives

From the research variables, the following specific goals were derived:

- i. To establish the effect of information sharing on performance of procurement function in County Public Secondary Schools in Tharaka Nithi County.
- ii. To investigate the effect of inventory management on performance of procurement function in County Public Secondary Schools in Tharaka Nithi County.
- iii. To examine the effect of tendering process on performance of procurement function in County Public Secondary Schools in Tharaka Nithi County.
- iv. To determine the influence of supply chain personnel competency on performance of procurement function in County Public Secondary Schools in Tharaka Nithi County.
- v. To examine the moderating effect of ICT integration on the relationship between supply chain management practices and performance of procurement function of County Public secondary schools in Tharaka Nithi County.

1.4 Research Hypotheses

- H₀₁: There is no statistically significant relationship between information sharing and performance of procurement function of County Public secondary schools in Tharaka Nithi County.
- H₀₂: There is no statistically significant relationship between inventory management and performance of procurement function of County Public secondary schools in Tharaka Nithi County.
- H₀₃: There is no statistically significant relationship between tendering process and performance of procurement function of County Public secondary schools in Tharaka Nithi County.
- H₀₄: There is no statistically significant relationship between supply chain personnel competency and performance of procurement function of County Public secondary schools in Tharaka Nithi County.
- H₀₅: ICT integration has no statistically significant moderating influence on the relationship between supply chain management practices and procurement performance of County Public secondary schools in Tharaka Nithi County.

1.5 Significance of the Study

Many groups and individuals, including policymakers in the MOE, school administrators, researchers, and academics, found the study to be very useful. Public secondary schools in Tharaka Nithi County may benefit from this study's findings in two main areas: commodity procurement and supply chain management processes. The outcomes deepened our comprehension of the elements impacting the efficacy of supply chain management solutions in secondary school. Curious academics may be able to use the findings to help fill in gaps in their understanding of the subject. Since it contributes to the existing body of knowledge on the subject, the research would also be useful for educational institutions. If the research can help the public procurement monitoring body and the Kenyan government figure out how to enhance procurement in public secondary schools that would be great. Public secondary schools in Kenya stand to benefit from increased transparency, accountability, and efficiency in their procurement processes if they listen to the concerns of policymakers and regulators.

1.6 Scope of the Study

County public secondary schools in Tharaka Nithi County was the focus of this study, which aims to examine how supply chain management affects their procurement function performance. Public secondary schools often operate under constrained budgets thus implementing effective SCM practices can help optimize the use of available resources, ensuring that funds are allocated efficiently to meet educational needs. Tharaka Nithi County has been working on improving its educational infrastructure as part of its development agenda. SCM practices can facilitate the efficient construction and maintenance of school facilities, ensuring that physical environments support learning activities effectively (Kamiru & Mwilaria, 2020). This includes managing supplies, equipment, and educational materials to minimize waste and maximize utility. Therefore, the researcher sought to establish the effect of supply chain management practices on procurement performance in public secondary schools in Tharaka Nithi County, Kenya. Specifically, the study sought to examine the effect of information sharing, inventory management, tendering process and supply chain personnel competency on procurement performance in public secondary schools in Tharaka Nithi County, Kenya. The study also sought to determine the moderating effect of ICT integration on the relationship between supply chain management practices and procurement function performance of County Public secondary schools in Tharaka Nithi County. In Kenya's Tharaka Nithi County, 52 county public secondary schools provided the sample for this study. The County public secondary schools' performance was compared as of December 31, 2023. Because of its rapid educational and infrastructural development, Tharaka Nithi County was chosen (County Development Plan, 2022).

1.7 Limitations of the Study

It was expected that respondents would sometimes not finish the surveys or would not fully grasp certain parts of them. This was countered by keeping respondents informed at all times during the survey session. Due to organizational secrecy, the majority of respondents may choose not to answer some questions. Sharing the organization's sensitive information was seen as a violation of their policy on confidentiality policy. This was countered by assuring the respondents of the

confidentiality of the information and purpose of research was highlighted for academic purposes.

1.8 Assumption of the Study

The premise of this research is that participants answered the questionnaire honestly and openly. In addition, the research presupposes that the inclusion criteria for the sample are appropriate, such that every participant has experienced the same or a similar phenomenon. Furthermore, it is assumed that the individuals participating in the research are really enthusiastic about the opportunity and are not motivated by any ulterior motives. In addition, it presumes that the data be normal, multicollinear, and heteroscedastic in terms of variance. The analysis concludes by supposing a normally distributed population for the sample.

1.9 Operational Definition of Terms

Information Sharing	This means the exchange of necessary business messages and reports
Tendering Process	It is a tendering process utilized by both public and private organizations. Most organizations use Requests for Tender (RTF) to invite bids for large projects, procurements or contracts from all qualified suppliers or firms in a given industry.
Supply Chain Personnel Competency	Refers to the combination of knowledge, skills and abilities necessary for achieving procurement performance
ICT Integration	Using computer-based communication in everyday classroom activities is a component of integrating ICT into education.
Performance of Procurement Function	It is a metric for determining how well the procurement function can accomplish the desired results at the lowest possible cost.
Supply Chain Management Practices	Refers to the deliberate and holistic approaches adopted by public primary schools in the management of the flow of goods and services to and from a company and includes all of the processes involved in transforming raw materials and components into final products.
Secondary School	Refers to an institution that provides secondary education

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Framework

The theoretical review of this study was based on the following theories that try to link the supply chain management practices on procurement performance. The four theories reviewed are the knowledge-based theory, the transactions-cost economics theory, commitment-trust theory and the institutional theory.

2.1.1 The Knowledge-Based Theory

This theory was developed by Zahra and Filatotchev (2004). The knowledge-based theory of the company postulates that the most valuable resource for the business is its knowledge. Since knowledge-based resources are often difficult to reproduce, its advocates argue that socially complicated, diverse knowledge bases and competencies across organizations are the principal drivers of sustained competitive advantage and improved corporate performance (Grant, 2007). Companies' rules, processes, records, and systems, as well as their employees and corporate culture, are among the many sources of this data (Zander, 2007).

One manner in which IT may greatly aid the company's knowledge-based vision is via the utilization of information systems to consolidate, enhance, and expedite vast intra- and inter-firm knowledge management (Alavi & Leidner, 2001). But there have been a number of recent critiques of the hypothesis. A lot of people have different opinions on whether the Knowledge-based theory of the company is a theory or not. Think of Foss (1996) and Phelan and Lewin (2000) as examples. Furthermore, the knowledge-based perspective of the company does not constitute a theory of the firm in any formal sense, as stated by Grant (2002).

This research placed a premium on knowledge-based theory, which states that all parties participating in supply chain management should disseminate relevant information to one another. If all parties involved in the procurement process in Tharaka Nithi county's public schools were to share relevant and timely information, it would greatly improve the efficiency and effectiveness of the procurement process

overall. Accordingly, the theory directed the study's information sharing variable based on this reasoning.

2.1.2 The Transactions-Cost Economics Theory

The transactions-cost economics theory proponent was Coase (1965). The theory underpinned that a transaction cost is an expenditure that arises as a result of an economic exchange. Selling a product or service on the open market instead than selling it in-house costs more money. A market transaction requires careful planning, including identifying a suitable partner, engaging in negotiations to reach an agreement, creating a legally binding contract, and conducting necessary inspections to verify compliance with the agreement's provisions. The costs associated with these activities include, but are not limited to, data collection, bargaining, contract enforcement, and monitoring its execution.

This theory was proposed by Coase in 1937. It is a price that is tagged on to every monetary transaction that happens in the market. It is the price that a business must pay to get a piece of the market for an item or service that will be sold internally. Finding a good partner to do business with, negotiating a mutually beneficial agreement and drafting the contract, and checking for conformity with the conditions agreed upon are all steps in the market transaction process. These include the expenses of gathering the necessary information, engaging in negotiations and bargaining, carrying out contract enforcement, and keeping tabs on the level of compliance with the agreements.

According to this hypothesis, it may be more practical to produce goods in-house in some cases due to the high transaction costs and other difficulties that could occur when trying to outsource. It becomes difficult to grasp the whole functioning of the economic system and have the correct evidentiary basis to base an organization's choice on cost-efficient ways of procurement without considering transaction costs, as pointed out by (Coase, 1937). When parties determine that short-term contractual agreements are not practical, they may enter into a long-term commitment known as a firm. Given the high expense of gathering necessary information and negotiating the terms of a contract, this research concludes that short-term agreements are

inappropriate. This leads to partnerships that last for a long time, where the partners agree to pay each other in exchange for doing what the entrepreneur says, up to a point.

Following Williamson's 1979 work in transaction cost economics (TCE), a company's structure should aim to minimize both transaction and production costs. When deciding whether to engage in vertical integration or to utilize the market for exchange, corporations take transaction costs into account. Thus, efficiency of governance must be considered for TCE while deciding whether to collaborate or not. According to transaction cost economics theory, there are some circumstances in which a company should engage in internal transactions and others in which it should engage in external transactions (Williamson, 2008). Connection studies may benefit greatly from transaction cost analysis, according to Heide and John (1990), as it reveals how crucial a tight connection between suppliers and customers is.

Based on their reading of Williamson (1979), Heide and John (1990) suggest that market-based trade tends to give way to bilateral coordination as the scope of a partnership grows. Since these theories can be used to explain how suppliers support supply chain activities and how supplier selection, evaluation, and development contribute to supply chain core competences, they are relevant to studies involving supplier management (Dey, & Cheffi, 2013). Consequently, TCE is used based on the components of cost orientation and efficiency. It also suggests the breadth of a company, which is crucial. RBV is the concept that emphasizes the value that a company creates using its own resources and competencies. RBV takes into account the power dynamics, the level of reliance on outside sources, and the kind of internal and external social ties. In light of the above, it follows that the focus should be on ensuring the company's seamless operation and avoiding affirmative action. Even without them, these theories provide reasons to manage suppliers, share data across business units, cut down on transaction costs, and make the most of in-house skills and resources while minimizing risks associated with supply reliance and availability (Ell ram et al., 2008).

Ordering food inventory and keeping it properly are two of the numerous expenses associated with inventory management. Ordering costs are typically constant expenses; however, storage costs tend to be low and orders that are small and frequent tend to have higher order costs. Conversely, storage costs are high for large purchases while order costs are cheap for smaller ones. This study's inventory management variable can be well explained by the theory.

2.1.3 Institutional Theory

Institutional Theory was proposed by Meyer and Rowan's (1977) and suggests the market forces are not as influential as the institutional environment when it comes to shaping the formal structures of organizations. Legitimizing organizational innovation entails defending novel organizational structures by pointing to the efficiency gains they've produced. In order to adhere to the standards shown within an institutional setting, certain frameworks and protocols must be established.

Institutional forces, according to Meyer and Rowan's (1977) Institutional Theory, are much more influential than market pressures in shaping the formal structures that organizations adopt. In order to legitimize new structures in businesses, it is necessary to look at the efficiency consequences. This suggests that certain procedures should be put in place to arrange activities in a way that conforms to the standards shown in an institutional setting.

It is reasonable to assume that institutional theory has an effect on supply chain performance and procurement as a whole (Meyer & Rowan's, 1977). The institutional theory states that it is critical to treat all participants in the procurement process equitably, and the only way to do this is to adhere rigidly to the established protocols. Here are a few steps to help you plan your acquisition: determine what you need over a certain period of time, find out where to get it, decide on the specifications, decide on the procedures to follow, call for bids, analyse the bids, award the contract, manage the delivery, keep records, be accountable, pay, and finally, finish the contract. Institutional performance in procurement and supply chain was improved when protocols were followed.

Regarding the legal side, theory establishes the buyer-seller relationship by outlining the effects of one party's actions on the other and on other parties involved, including, but not limited to, the optimality or lack thereof of decisions involving the use of monetary and non-monetary resources (Muranda, 2006). In Tharaka Nithi County's public secondary schools, all parties involved in the tendering process are required to adhere to the procedures outlined in the relevant legal documents. This notion is therefore the foundation of the study's tendering process variable.

2.1.4 Commitment-Trust Theory

Christopher (2004) proposed commitment trust theory and cites trust and accountability are the two most important factors in a healthy partnership. "Relationship Marketing and Customer Relationship Management" by Annekie Brink and Adele Berndt expanded the notion. The promotion and establishment of connections with suppliers via attending to their needs and duties is an integral part of relationship marketing. Companies that use relationship marketing build long-term partnerships with their suppliers rather than focussing on immediate gains (Handfield, 2002). As a result, vendors have confidence in these businesses, and the consistent reliability helps both parties achieve their objectives.

Heikkila (2002) states that trust occurs when one partner in a relationship has faith that the other will not engage in dangerous or destructive behaviour. Companies earn trust when they deliver on their commitments. One aspect of accountability is the need to maintain a company's reputation throughout time. Developing and sustaining connections with customers is something every business strives for (Williams, 2006). As part of its responsibility to its suppliers, the company sends out gifts that foster relationships. According to Martin (2003), when two parties get into a relationship based on trust and commitment, it usually leads to mutually beneficial behaviour that help both parties meet their needs. Not only do customers get what they paid for, but they also feel appreciated.

One of the most important parts of any integration process is the supply chain, which is why commitment trust theory is so relevant there. Since it is now a need for company success, establishing and executing successful supplier engagement has

been a problem throughout the supply chain. In order to enhance procurement performance in Tharaka Nithi County's public schools, it is necessary to assess the competence of supply chain staff prior to their engagement in the procurement process. Since theory was used to guide the competence variable of supply chain people and determine their qualifications, it is pertinent to this research.

2.2 Empirical Review

2.2.1 Information Sharing and Procurement Function Performance

Owago *et al.*, (2021) set out to determine how business performance in New York is impacted by information sharing. The study set out to determine the effects of buyer-supplier and supplier engagement on performance. Correlation design was used in the investigation. The data obtained for the research was analyzed using descriptive statistics, which include mean and percentage. Also, businesses need to make sure they order the correct products by using accurate information, according to the report. This has an effect on business performance since it necessitates product knowledge in procurement processes. There is a lot of money spent on procurement tasks and building confidence, therefore this affects suppliers' cost of operations. Having knowledge makes the customer and provider feel comfortable and transparent. This sample is based on businesses in New York, a state with strict procurement regulations. Consequently, this research aims to fill a contextual gap by performing a local study, as the results, while serving as the foundation, cannot be generalized to cover the experiences of local enterprises.

Otieno *et al.*, (2022) conducted a study to establish the effect of Supplier information sharing on supply chain performance of Selected County Governments in Nyanza Region Kenya. This study employed a descriptive but correlation research design. The target population was 112 procurement staff and 9 lead prequalified suppliers of the Selected County Governments in Nyanza Region Kenya. The study sampled population by stratified, simple random and purposive techniques. Closed ended Likert scale questions were used. Data analysis involved statistical approaches on basis of descriptive and inferential values. Descriptive employed frequencies, percentages, mean mark and standard deviation. Inferential were employed through Pearson correlations and simple linear regression. Content analysis was used to

analyze data from collected interviews. The study found that supplier information sharing had a positive effect on supply chain performance in selected county governments of Nyanza region, Kenya. Simple linear regression results revealed that the Supplier information sharing has a positive effect on performance of supply chain in selected devolved units in Kenyan Nyanza region.

Odhiambo *et al.* (2020) evaluated elements impacting information exchange, design, and management of the supply chain within the context of the chosen Ethiopian public organizations using the variables presented by Li *et al.* (2017). Data was gathered and assessed based on the suppliers of four public health organizations information sharing practices in this study. A total of 345 public health organization workers filled out the survey. When using either simple or multiple regression analysis, panel design was utilized. The findings demonstrated a statistically significant correlation between the firm's success and supplier information sharing. Information on the suppliers' stockpiles and return charges was used. The research used a panel design, which caused a gap to appear in the context. By using a multiple regression model to examine the connection between information sharing and procurement success, this research hopes to fill the contextual gap.

Although there have been several studies praising the effects of supply chain learning on competitiveness, very few have offered suggestions for bolstering this practice. The relevance of flexibility performance was also discussed in a research by Huo *et al.* (2021) on the moderating effects of information sharing on supply chain learning. The data for the Polytechnic respondents was gathered from 213 Chinese manufacturing organizations. These findings demonstrate that all three components of supply chain learning are enhanced by exchanging knowledge. In addition, the two concepts of supplier learning and flexibility performance are mediated by information exchange. In light of the foregoing, a new theoretical perspective on the connection between information sharing, supply chain learning, and flexibility performance emerged; this perspective may help managers understand how to acquire a competitive edge by constructing knowledge through the supply chain and sharing it with others. This study was conducted in China which has developed systems and different

macroeconomic factors than the current study which was done in Kenya and results could differ.

The effect of sharing supplier information on the listed Ugandan enterprises involved in multiple modal transactions is studied by Hallikas and Vilko (2017). In terms of methodology, the research analyzed five companies trading on the Ugandan stock market using the case study approach. The research gathered data from 2011–2015 and used a pooled regression approach, often known as a panel data design. Sharing knowledge has a favourable effect on company performance, according to this study's findings, which also indicate a positive relationship between the two. In the total review of buying, there was evidence that suggested supplier knowledge did impact performance. The goals of this research were to fill this knowledge vacuum by examining the following topics: supplier trust, supplier disclosure, supplier response, and information request. The research's methodology, which relied on secondary data gathered over five years, created a methodological gap that this study closed by using primary data to prove a connection between information sharing and performance.

Public secondary schools in Nairobi County, Kenya, were the focus of research by Otieno and Getuno (2017) investigated how procurement regulations and supplier information sharing affected school performance. The purpose of this research was to determine how suppliers share information and how it affects procurement policies in secondary public schools. An experiment in census collection was used to tally the populations of six secondary schools. The study used a descriptive research approach and 76 procurement staff members were the target group. Surveys that were created by the participants themselves were used to gather primary data. The impact of openness, procurement reforms, inspections, tendering activities, and professionalism on organizational performance were examined descriptively using Pearson's correlation coefficient. Results showed that criteria including professionalism, acceptability level, transparency, and inspections affected performance. The survey also discovered that when public secondary schools buy products and services, they share information. This research aimed to address an empirical vacuum left by the previous one by determining the influence of information sharing on procurement

performance. The previous study merely established that public secondary schools had used information sharing in procurement.

2.2.2 Inventory Management and Procurement Function Performance

War Memorial Hospital and Wedam Medical Centre in Ghana were the subjects of an investigation by Kamau and Luger (2023) on the connection between operational performance and inventory management techniques. This study made use of a descriptive research strategy. A total of 155 patients from both institutions filled out the survey. The most popular inventory management systems at healthcare facilities were enterprise resource planning (ERP), just-in-time (JIT), and economic order quantity (EOQ). The research also shown that hospitals may gain a lot from inventory management strategies when it comes to operational performance. However, if some issues like inadequate training and infrastructure aren't resolved, hospitals might not be able to reap the full benefits of these practices. The study lends credence to the following claims: hospital administrations should hire senior staff with extensive computer and inventory management experience to supervise the department's computerised software for inventory management; and hospitals should decentralise their current centralised inventory management system. A contextual concern is that the research may not apply to public secondary schools since it was carried out in a hospital. By surveying secondary schools in the public sector, the current study hopes to close the aforementioned knowledge gap.

Among the manufacturing companies traded on the Ghana Stock Exchange, Khan and Siddiqui (2019) looked at how inventory management affected business success. Listed Ghanaian manufacturing businesses' performance may have something to do with inventory management, according to a research that used cross-sectional secondary data. Using data collected from 14 companies listed on the Ghana Stock Exchange (GSE) between 2007 and 2016, this research analyzed 140 firm-year observations. The profitability and operational cash flows of megaproject firms were examined as performance metrics. Using regression equations derived from ROA and OCF, we were able to analyse the performance data of the organization. Additionally, multiple regression analysis and Pearson correlation were used as surrogates for efficient inventory management. The results showed that inventory management and

production performance were unrelated. As a matter of fact, other researchers have shown a substantial correlation at the bivariate level, hence there is obviously an empirical vacuum in this area. By analyzing the stock prices of a few Nigerian banks, our study will help close that knowledge gap.

The purpose of the study by Mulandi and Ismail (2019) was to compare the effects of different inventory management strategies on the efficiency and effectiveness of Kenya's commercial state enterprises. This study set out to answer the following particular questions: How does just-in-time inventory affect the efficiency and productivity of Kenya's commercial state corporations? In Kenya, how do commercial state enterprises do when it comes to material need planning? There were 33 commercial state-owned firms that made up the target population of this descriptive study. There were 33 responses because a census was conducted. Data was analyzed using descriptive and inferential statistics after it had been obtained by questionnaires, which were utilised for primary data collection. Results from the quantitative analysis are shown in the figures and tables. A favourable and statistically significant correlation between a just-in-time inventory system and the efficiency and effectiveness of material need planning was found in the study. This research found that commercial state organizations in Kenya had a favourable and statistically significant relationship between inventory management and their performance. This research also has a discrepancy in that it plans to utilize procurement performance as its dependent variable, while the previous one used the performance of commercial State Corporations.

The Uasin Gishu County Government in Kenya had its stock management system evaluated for its impact on buying efficiency by Kipchumba and Keitany (2021). The company is able to separate the acquisition, manufacturing, and promotion of its main items with the use of an inventory management system. The goal of this legislation is to reduce the impact of production shortages and lost sales by increasing efficiency in cost-sensitive sectors. The following are the aims of the study: Examine how the County Government of Uasin Gishu, Kenya's inventory control systems affect their procurement performance. The study also found out how the ERP program and the inventory prediction tool were influencing the efficiency of the purchasing process.

The lean and theory of constraints frameworks provided the groundwork for this investigation. This descriptive study made use of a survey research approach. Personnel involved in procurement at the Uasin Gishu county administration were the intended subjects, and 65 individuals met this criteria. The research questionnaire's validity was checked by performing a pilot study. We used the cronbach alpha coefficient to look at dependability and content validity to check for validity.

Primarily, the study relied on data collected from researchers' own fill-out surveys. Both descriptive and inferential statistics were used in the data analysis process. A positive correlation between procurement performance in the county and procurement aided by ERP software was found in the analysis of research data ($r = 0.103$; $p < 0.05$), as was a positive correlation between procurement performance in the county and procurement based on forecast analysis of inventory ($r = 0.315$; $p < 0.05$). Positive inventory control was thus determined to be an effective tool for procurement management. Regarding the choice and the recognition of the role of risk in decision-making, the research also provides a proposal. With an eye towards enhancing overall procurement performance, the research also revealed that management must promptly issue purchase orders and procurement information. The results of the research will greatly assist the county in avoiding further losses caused by the shipment of subpar inventory. It is hoped that the outcome would be useful in improving the County's inventory management systems.

With a focus on Kisii County, Kenya, Otundo and Bichanga (2015) aimed to determine the impact of IM adoption on the operational performance of chosen counties. Specifically, we aimed to determine: how demand forecasting practices affect operational effectiveness in Kisii County, Kenya; Two impacts on operational performance in Kisii County, Kenya, one related to inventory categorization technique and the other to vendor managed inventory (VMI). The study's authors reached a consensus that supply reliability somewhat affected the efficiency with which organizations carried out their operations. 7%, whereas the following are considered to be significantly impacted by the impacts of inventory categorization on customer service inventory: Regarding the unimpeded movement of order fulfilment and supply Regarding stock reduction Regarding the restocking of supplies for

consuming departments. The present investigation confirmed a relationship between supply dependability and operational performance, although it did not specify what kind of link it was. Additionally, it allowed room for empirical investigation since it did not specify whether a link was positive or negative. So, the purpose of this research was to find out what makes people more likely to buy goods that are created close to home.

In their study, Flynn and Davis (2017) examined 3010 small and medium-sized enterprises (SMEs) to find out how tendering capability affected their performance in government contracting competitions. They also wanted to know if tendering capability moderated the relationship between competence and SMEs' performance in these competitions. Additionally, Matunga et al. (2013) investigated the impact of online procurement methods on public procurement efficiency in hospitals, focussing on the Kisii level 5 hospital specifically. Electronic sourcing, e-quotations, and e-tendering are the three main e-procurement applications that have an impact on Kisii Level 5 Hospital, according to the study.

2.2.3 Tendering Process and Procurement Function Performance

Profitable growth is a perpetual challenge for companies in today's dynamic and cutthroat business climate. Reengineering operations is essential for organizations to be competitive in the face of globalization and technological developments. Organizations must collaborate with their suppliers and consumers to guarantee timely delivery of required items if they want to guarantee client happiness and loyalty. One strategy for enhancing the efficacy and efficiency of procurement has been e-procurement, made possible by advances in ICTs.

The corporate world is full with obstacles that force companies to increase their profits in a constantly changing and competitive commercial environment. In order for organizations to adapt to the ever-changing landscape of technology and globalization, it is imperative that they revamp their internal structures. Organizations must collaborate with suppliers and consumers to provide specific items at the correct time if they want to achieve customer happiness and loyalty. As a means to improve

procurement efficiency, e-procurement has gained a lot of traction because to advancements in information and communication technologies (ICTs).

With that in mind, Gichuhi (2020) investigated how Geo-thermal Development Company in Kenya used e-tendering to influence procurement success. A descriptive research strategy was used in this investigation. One hundred and seventy employees from the procurement and logistics department in the GDC, Nakuru area made up the target population that was utilized to establish the sample size. Using a convenience sample approach, 97 participants were chosen to participate in the flipped classroom delivery. This research relied on questionnaires as a primary data source. The dependability of the instrument was established using Cronbach's alpha, which validated its validity. Despite the suggested minimum value of 0.7, every one of the variables had alpha values greater than 0.8. This meant that the study's equipment could be relied on to gather accurate data. We used SPSS, or the Statistical Package for the Social Sciences, to analyse the data that we collected.

Tables with descriptive and inferential statistics analyzed the data, which were then used to conduct a qualitative discussion. Research found that e-tendering significantly affected procurement performance in geothermal development companies, indicating a positive and substantial association between the two. Regression analysis results indicated that e-tendering did not significantly contribute to the variability in the geothermal development company's procurement performance. So, e-tendering isn't a big deal when it comes to improving procurement performance. Therefore, in order to improve the result of their procurement, the firm was urged to start a push to include E-tendering into their processes.

To determine how the tender process affects the idea of value for money in Tanzania's procurement system, Matto et al. (2021) undertook a research. This study used a quantitative research paradigm in conjunction with a cross-sectional survey design and survey technique. Information gathered from 164 entities in Tanzania was used in this investigation. Inferential statistics and frequency tables were also used. This study's findings show that public procurement's value for money may be enhanced via the following processes: tender advertisement, tender review, tender award, and

tender negotiation. In contrast, the tendering document did not affect the use of cost-effectiveness as a bid evaluation metric. Obtaining the most value for money demands more diligent management of tender promotion, appraisal, award, and negotiation in Tanzania's procurement institutions. This research has contributed to the body of knowledge known as institutional theory by drawing attention to the need of normative and regulatory frameworks in ensuring optimal organizational performance.

Ngumi (2015) investigated the effect of open tendering on procurement of goods and services by Public Secondary Schools in Nyeri Central Sub- County of Nyeri County in Kenya. The researcher adopted the descriptive survey design. The population of the study consisted of 288 respondents consisting of 112 tendering committee members of the 14 Public Secondary Schools in the Sub- County and 176 registered suppliers in the Sub- County. From a population of 176 registered suppliers, snowballing was used to draw a sample of 122 suppliers. A census was carried out on the committee members. Data analysis was done using descriptive and inferential statistics. Statistical Package for Social Scientists version 21 (SPSS) was used to generate frequencies, percentage and mean to present the measuring parameters of each objective. A regression model was computed to establish the relationship between each independent variable with the dependent variable. Further a multi-regression model was also computed to establish the relationship between all independent variables with the dependent variable. It was found that open tendering improved the quality of goods and services procured; open tendering reduces cost of goods and services procured; Open tendering increases accountability in the procurement process and also open tendering increases suppliers' confidence. This research used snowballing sampling which can limit generalization while the current study used simple random sampling which gives equal chance to respondents.

In their study on the variables impacting the efficiency of tendering in Kenya's energy sector, Kinyamasyo and Kihara (2019) used a descriptive research approach with a stratified random sampling methodology to pick 154 individuals as the study's sample population. This research used conventional quantitative methods, including descriptive and inferential statistics. Prior research has mostly concentrated on the effects of tendering on performance and the implementation of procurement efforts;

hence, this study should investigate the effects of tendering on service delivery in Kenyan public organizations. Therefore, using a census approach, the current research intends to address this void. Further, a survey questionnaire was used to gather data in order to determine the elements impacting the open tendering process in public organizations (Buuri, 2016). The data in this research was analyzed using both descriptive and inferential statistics. Therefore, the research found that it is critical to implement good procurement processes and provide enough training for staff in order to improve the tendering process and the aspects of procurement.

The purpose of the study by Flynn and Davis was to determine the impact of tendering capacity on small and medium-sized enterprise (SME) performance in government contracting competitions. The researchers surveyed 3010 SMEs and found that tendering capability influences SME activity and performance in these competitions. Also, with a focus on the Kisii level 5 hospital, a research examined the impact of online procurement processes on public procurement efficiency (Matunga et al., 2013). Based on the findings, e-quotations, e-sourcing, and e-tendering are the most important components of Kisii Level 5 Hospital's e-procurement applications. This research aimed to see if the outcomes would change by comparing them to others that used diverse contexts, such as SMEs and Kisii level 5 hospital.

2.2.4 Supply Chain Personnel Competency and Procurement Function Performance

Patrucco *et al.* (2022) suggested management of human resources as a tool for Latin American supply chain improvement. The study's overarching goal was to better comprehend the ways in which SC workers generate competitive advantage via knowledge acquisition and application. The authors zeroed attention on studies that looked at the correlation between SC-level results (SC growth), employee happiness, and the company's training and testing expenditures in connection to SC-level competences and skills. Structural equation modelling (SEM) was used to analyse 246 SC professionals' self-completed surveys from various Latin American organizations. Whenever the amount of investment in training by the firm was stated, multi-group analysis was used to compare the interactions of these factors. The research also shows that strong professional relationships help SC professionals become more knowledgeable and skilled, which impacts their happiness at work and how well they

do their jobs. Sourcing, acquiring, and using information to boost SC[s]'s competitiveness requires professionalism. The premise is that, as improved SC results are a direct result of increased investment in SC personnel training, SC enterprises that do so would have higher procurement performance. This research lends credence to the idea that public secondary schools should prioritize training procurement supply chain staff in order to boost productivity.

The study's data collection methodologies and pilot testing failed to reach the supply chain management. The 22 professors that participated in the exploratory research made up 10% of the total sample size of 222 professors from manufacturing companies. Among the many things that Mwangi (2019) looked at were the effects on Kenyan manufacturing enterprises and the role that the supply chain played in those firms. This study set out to: The overarching goal was to learn how inventory management affected the efficiency and productivity of Kenyan manufacturing companies. Determine the effect of supplier management on the productivity of Kenyan manufacturing companies The purpose of this study is to ascertain how procurement costs influence the productivity of Kenyan manufacturing enterprises. Examine the impact of various forms of automation on the productivity of Kenyan manufacturing companies.

The association between supply chain optimization and performance of Kenyan manufacturing enterprises was also examined to see whether environmental indicators of worker competency acted as a moderator. The ideas that have been extensively discussed in this paper include the theory of constraints, competence theory, buying portfolio theory, transaction cost analysis, and the supply chain operations reference model. This study used a cross-sectional survey research strategy to collect its data. The data for different manufacturing enterprises was obtained at a given period, hence the cross-sectional design was considered appropriate.

Supply chain managers in charge of procurement departments of industrial enterprises in Nairobi County were the intended participants in the research. In this research, 499 supply chain managers from manufacturing companies were the intended subjects. Researchers in this research aimed to collect data from 499 supply chain managers

working for Nairobi, Kenya-based manufacturing companies. Since this research aimed to reflect the many different types of manufacturing companies in Nairobi, 222 supply chain managers were chosen at random using a purposive selection technique. The data needed to conduct the analysis for this study came from a combination of primary and secondary sources. Using secondary sources, we may examine how the performance of the chosen manufacturing enterprises fell between 2012 and 2016. A questionnaire in this style was sent to respondents in order to gather primary data for this study. Data was analyzed qualitatively using analytical quantitative approaches in order to examine the study issues. Data collecting for the research did not make use of the strategies that supply chain managers had employed on them during pilot testing. A total of 22 supply chain managers from manufacturing companies participated in the pilot research ($0.1 * 222 = 22$).

Using the supply chain as an example, Mwangi (2019) assessed the elements that influence Kenyan manufacturing enterprises and their performance. The following were the aims of the study: The study's stated goals were to (1) assess the overall performance of Kenyan manufacturing enterprises and (2) identify the factors that contribute to the success or failure of these firms in relation to the inventory management practices they use. Purpose: to ascertain how well Kenyan manufacturing enterprises are doing and, secondarily, to find out how much of an effect supplier management has on how well those firms are doing. In order to evaluate and contrast the performance of various Kenyan manufacturing companies while factoring in the effect of procurement cost the study's secondary objective was to determine whether or not competent supply chain personnel mediates the connection between supply chain optimization and the performance of Kenyan manufacturing enterprises. On this page you will find a few theories: Competency theory, the idea of constraints, the theory of transaction costs, and the theory of buying portfolios The focus of this research has been on the reference model for supply chain operations. This study made use of a cross-sectional survey research strategy. Since this sort of research relies on data collected from manufacturing enterprises at a certain point in time, cross-sectional design was deemed suitable.

The study's intended participants were supply chain managers in Nairobi County manufacturing companies, since they were in charge of the procurement department. The research aimed to gather information from 499 supply chain managers working for manufacturing companies. Accordingly, 499 Nairobi, Kenya, industrial supply chain managers were the intended subjects of this research. The pilot study in this research included 22 supply chain managers from manufacturing organizations, which is 10% of the total goal sample size of 222.

Various variables influencing the performance of Kenyan manufacturing enterprises and the role of the supply chain were discovered and analyzed in Mwangi's (2019) study. The study set out to answer the following question: How does inventory management impact the performance of Kenyan manufacturing firms? How does supplier management impact the success of Kenyan manufacturing firms? In what ways does the management of procurement costs impact the efficiency and productivity of Kenyan manufacturing companies? When it comes to manufacturing companies in Kenya, how exactly can supply chain integration help them perform better? The study's secondary objective was to determine whether or not the competency of supply chain personnel moderates the relationship between supply chain optimization and performance for Kenyan manufacturing enterprises. The theories that have been considered in this research include the following: competence theory, buying portfolio theory, transaction cost analysis, theory of constraints, and the supply chain operations reference model. A lot of emphasis has been placed on the latter. The study used a cross-sectional survey research design for its data collection. The cross-sectional design was deemed suitable since data used in this research came from many manufacturing enterprises at a certain period.

The study's intended participants were the supply chain managers working for Nairobi County manufacturing companies and responsible for the procurement department. Specifically, 499 supply chain managers from manufacturing companies were the intended participants in this research. Hence, 499 supply chain managers in the industrial sector in Nairobi were the intended subjects of this research. Kenya In order to guarantee that the 222 supply chain managers included in this research were representative of Nairobi's many industrial enterprises, purposive sampling was used

to choose them. In an effort to collect useful data for analysis, this study leaned heavily on the explanatory research design. An analysis of the chosen manufacturing enterprises' performance from 2012 to 2016 based on secondary data. A questionnaire was created in this manner and sent out to participants in order to gather data for this study. Various theoretical frameworks and methods for analyzing results Analytical quantitative methodologies were used to analyse data in respect to the study issues in this work. Furthermore, data collecting for the research did not include the same supply chain managers who were used in the pilot.

Twelve (12) supply chain managers from manufacturing companies participated in the pilot research; this represented 10% of the total sample size of 222 supply chain managers. The present research by Mwangi (2019) examined the elements impacting Kenyan manufacturing enterprises and the impact of the supply chain on these firms. What followed are the study's research questions: The research questions were as follows: How does inventory management affect Kenyan manufacturing firms? How does supplier management affect Kenyan manufacturing firms? How has procurement cost restriction affected Kenyan manufacturing firms? Discuss the effects of supply chain integration on Kenyan manufacturing firms. The current study also set out to determine whether or not competent employees moderated the association between supply chain optimization and the performance of Kenyan manufacturing enterprises. The aforementioned theories of buying, competence, theory of constraints, transaction cost analysis, and reference models for supply chain operations have all been thoroughly examined throughout this work. A cross-sectional survey research design was used to conduct the study. Because it was contended that data from various manufacturing enterprises was gathered at a certain period, the cross-sectional design of the research was deemed appropriate.

Managers of supply chains (SCs) in Nairobi County's industrial companies were the intended participants in the research. This study's intended participants were 499 supply chain managers from industrial companies. The study's intended participants were 499 supply chain managers working for Nairobi, Kenya, industrial companies. So, 222 supply chain managers were chosen at random from among the several Nairobi-based manufacturing companies using a purposive selection technique. The

appropriate data for analysis was sought via the use of both primary and secondary research data gathering methodologies in this study. Information gathered from secondary sources to examine the fall in performance of the chosen manufacturing companies from 2012 to 2016. This study's main data came from a questionnaire that was designed in this way and sent to participants. In order to answer the study questions, the data was analyzed using methods and strategies from empirical research. The purpose of the pilot study was to check the questionnaires for accuracy and internal consistency. The research made use of inferential and descriptive statistics. Included in the descriptive analysis were: Utilized inferential statistics included correlation and regression analysis, while measures of dispersion included standard deviation as an additional measure of variance and, consequently, risk, frequencies, and percentages for measures of central tendency.

Important determinants of manufacturing enterprises' success in Kenya were found to be supply chain optimization in this research. This shown that inventory controls, supplier management, optimization of procurement costs, automation of the supply chain, and the success of Kenyan manufacturing enterprises are strongly correlated. Additionally, the research found that the supply chain optimization performance of Kenyan manufacturing enterprises was significantly impacted by personnel competency. Staff competency was used as a moderator by the researcher and will be an independent variable in this study to fill the gap.

2.2.5 Supply Chain Management Practices, ICT Integration and Procurement Function Performance

Procurement results, information and communication technology integration, and supplier chain management techniques. Most importantly, Sundram et al. (2020) aimed to determine how IS and IT impacted the process of Malaysian manufacturing supply chains. This study was out to quantify its effect on SCI, SCP, and FP prevalence in Malaysia. In all, 121 manufacturing enterprises in Malaysia filled out the survey form used for the research. Then, to determine the connection between IT, IS, SCI, and FP, a multiple regression analysis is performed. The study's conclusions indicate that there is a favourable correlation between SCI and performance and IT and sharing. Companies in the manufacturing sector that employ information technology and implement IS among their business associates are more likely to work

together to improve performance both internally and externally throughout the value chain. Therefore, any practitioner in the supply chain, including those working in public secondary schools, may benefit from adopting and integrating the results pertaining to information technology and information security practices in order to advance SCI. At the same time, this will improve the public secondary schools' procurement performance and the supply chain network.

In their 2023 study, Rachim et al. evaluated the State Polytechnic of Ujung Pandang's electronic tendering procedure for the acquisition of public goods and services. Discussion and analysis revealed that 64% of providers failed the administrative qualification evaluation, 36% are currently attempting to prove their credentials, and 0% failed the technical qualification evaluation. In closing, the author emphasized the need of keeping tabs on the ever-changing rules and regulations governing the acquisition of goods and services, as well as the socialistic of providers' knowledge regarding the administrative requirements, qualifications, and technical specifications for future tenders. Twenty percent of providers keep providing credentials, forty percent fail the technical review, and forty percent fail the administrative evaluation. Public secondary schools should ensure that their suppliers are well-versed in the administrative requirements, qualifications, and specifications for future tenders, and they should keep a close eye on the rules and regulations governing the purchase of goods and services. This will help improve the efficiency and effectiveness of school procurement.

Research by Abdullahi et al. (2020) on the improvement of the Nigerian government's e-tendering assessment system. We used an object-oriented approach to build the system. To be more precise, Ripple and unified processes were selected as the two process approaches. Overall, 74% of those who took part in the system's validation gave it good marks for being able to effectively and appropriately simulate the current tendering domain. On average, 67.6% of respondents felt that NPS-eTender increased the efficiency of public sector tendering in the Nigerian setting. We may infer from the validation findings that automating the tender review process can help make the tendering process more efficient. Many e-Tendering systems for public sector tendering have been created to automate many of the manual tendering procedures

that are known to meet numerous challenges, as the authors pointed out, thanks to the revolution sparked by the internet and the World Wide Web. However, the automated evaluation of public bids via collective decision-making remains a significant uncharted territory. This study has been essential in developing an e-Tendering system that improves the procurement process for public secondary schools and the public sector as a whole.

Furthermore, according to Oyugi (2010), there are various obstacles that make it hard for public training institutions in Kenya to employ efficient procurement strategies. These include a lack of e-procurement methods and automated procurement systems, as well as inadequate information and communication technology (ICT) support and personnel with the necessary skills in this area. These findings highlight the need to determine how much IT integration affects the connection between SCM practices and procurement success. The study concludes by suggesting that future studies broaden their emphasis to include the service sector; this would provide a more comprehensive view of the world, which is why the researchers settled on public secondary schools as their primary study setting.

Table 1: Summary of Literature Review

Author(s)	Topic	Findings	Research Gap
Wanja et al., (2020).	Performance of procurement and sustainable procurement methods in Kenyan food and beverage manufacturing enterprises	Through cost reduction, environmental cleanliness, and improved supply quality, the research found that four sustainable procurement practices—green specification, green inventory management, reverse logistics, and green tendering—substantially improve procurement performance.	According to the study's findings, sustainable procurement practices greatly improve procurement performance, which in turn boosts company profitability.1.Other theories may be studied since the research was built on theories such as organisation theory, system theory, legitimacy theory, and stakeholder theory.
Mwangi, (2019).	Influence of supply chain optimization on the performance of manufacturing firms in Kenya	Inventory controls, supplier management, optimisation of procurement costs, automation of the supply chain, and the success of Kenyan manufacturing enterprises are all positively correlated. 2.The correlation between supply chain optimisation and performance of Kenyan manufacturing enterprises was tempered by staff competency.	As an independent variable, staff competency might be considered. The second option is to employ other variables as independent ones. Third, research in manufacturing organization may be extrapolated to other fields, including education.
Patrucco et al., (2022).	Can you grow your supply chain without skills? The role of human resource management for better supply chain management in Latin America.	SC professionals' job happiness and performance are influenced by their ability to expand their professional networks, which helps them acquire new skills and competences. This highlights the significance of investing in talented individuals, who can aid in	The results of studies conducted in the United States may be applied to other countries. Because of structural equation modelling (SEM), other study designs might be considered.

		the gathering and application of information and, in the end, boost SC's competitiveness. Companies that put more money into educating their SC workers tend to have better SC results.	
Matto et al., (2021).	Tender process and value for money in Tanzania public procurement.	Tender advertisement, appraisal, award, and negotiation are key components of public procurement that significantly improve value for money, according to the research.	One, the research was done in Tanzania, therefore it may be replicated elsewhere. 1. prospective studies in fields other than public procurement, such as educational institutions 3. Since numerous factors might be used in a secondary school setting, the independent variables included tender advertisement, tender evaluation, tender award, and tender negotiation.
Rachim et al., (2023).	The process of procurement of government goods/services through electronic (e-tendering) construction works at the State Polytechnic of Ujung Pandang.	just 36% of providers continue to verify their credentials, while 0% fail the administrative review of qualifications. The author draws the conclusion that as rules and regulations pertaining to the acquisition of goods and services are constantly evolving, there is a pressing need to ensure that providers are well-informed when it comes to attaching administrative, qualification, and technical requirements to future tenders. Also, only 20% of suppliers keep proving their credentials, while 40% fail the administrative review and 40% fail	First, research conducted in the state of Ujung Pandang Secondary schools are one alternative setting for empirical study.

		the technical examination.	
Abdullahi et al., (2020).	Development of e-tendering system for Nigerian public sector	Based on the system validation findings, NPS-eTender has an average rating of 67.6% for its ability to improve the efficiency of Nigeria's public sector tendering and an average grade of 74% for accurately and correctly representing the current tendering domain. Automating the tender review process may result in a more competent tendering procedure, according to the validation findings.	The adoption of ripple and unified process techniques has left a void in the literature that might be filled with descriptive research and design.
Kipchumba et al., (2021)	Influence of inventory control system on procurement performance in the county government of Uasin Gishu, Kenya.	It was shown that the county's procurement performance was favourably and substantially affected by ERP software ($\beta_1 = 0.103$; $p < 0.05$) and inventory prediction analytics ($\beta_2 = 0.315$; $p < 0.05$). Findings indicate that effective inventory control systems boost productivity and quality of procurement processes.	Study done in county government thus can be done in schools to find out if the same findings stands.

2.3 Conceptual Framework

To make the presenting of results easier in the future, researchers often use conceptual frameworks, which are collections of overarching ideas and the links between them, taken from related disciplines (Kombo & Tromp 2009). Both the dependent variable (which the researcher hopes to forecast) and the independent variable (which is thought to be the cause of the changes to the dependent variable) make up the study design (Kothari, 2014). By outlining the study's trajectory in a conceptual framework, the researcher may also show how the many constructs they'll be looking at are related to one another.

Supply Chain Management Practices

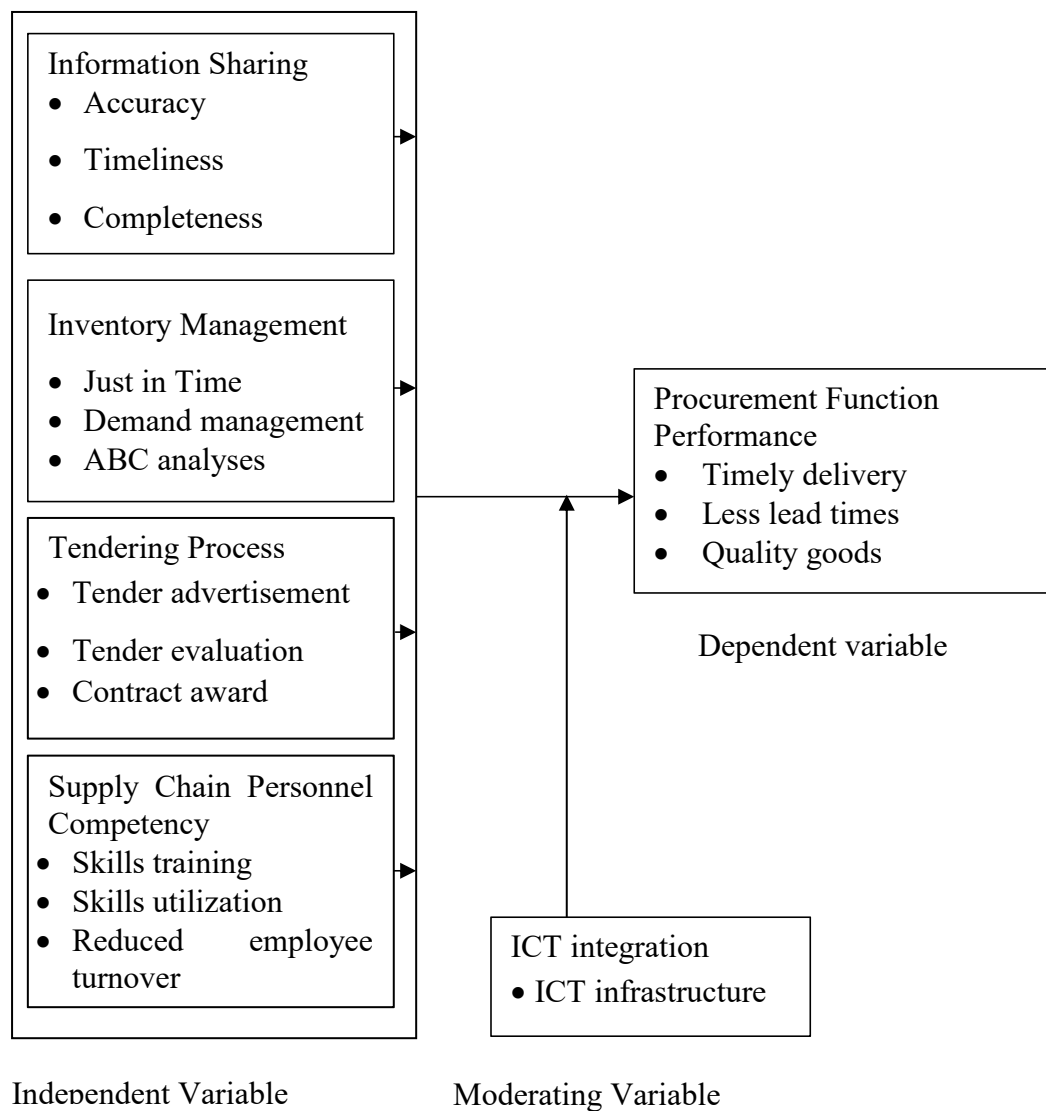


Figure 1: Conceptual Framework

Source: Researcher, (2024)

When companies share relevant messages and information with one another, it helps keep everyone on the same page (Manyuru, 2015). It denotes the transfer of data from one entity to another, whether human or otherwise. Some systems or electrical means might do this. The field of information technology has a rich history of information exchange. In the past, people would communicate with one another by exchanging facts in a one-on-one setting. Data gleaned from online information sharing may guide companies' future online sharing efforts (Hajli & Lin, 2016). Trusting people with any information, exposing information to suppliers, and reacting to suppliers were the markers of information sharing in the present research.

The primary objective of inventory management is to maintain stock at the lowest possible cost in order to provide a steady supply for ongoing activities. For example, while deciding on inventory holding costs, the cost of delivering stock, and expenditures resulting from inadequate stocks, management must find a balance between the many components of costs (Callahan, 2009). By synchronising purchasing, manufacturing, and shipping, inventory management guarantees that consumers always have access to the products they need (Ogbo & Ukpere, 2014). Inventory management indicators in the present research included JIT, customer happiness, and demand management.

Logistics communication, storage and warehouse management, material handling, and distribution of commodities (including reverse logistics) are all aspects of the movement of goods that must be well-managed in order for a supply chain to function. According to Dittmann (2012), the top companies will continue to have challenges in attracting and maintaining top people in the supply chain. Companies clearly need to be far more skilled at "selling the opportunity" to prospects.

2.4 Operationalization of Study Variables

The study used four independent variables including information sharing, inventory management, tendering process, supply chain and personnel competency which might influence procurement performance in secondary schools. Table 1 gives the measurement and operationalization of study variables.

Table 2: Operationalization of Variables

Variable	Indicator	Measure
Information Sharing	Communication among user department	5-point Likert scale
	Disclosing information to suppliers	5-point Likert Scale
	Responding to supplier	5-point Likert Scale
	Information requesting	5-point Likert Scale
Inventory Management	Just in Time	5 Point Likert scale
	Material management	5-point Likert scale
	ABC analyses	5 - point Likert Scale
	Bin Cards	5 - point Likert Scale
Tendering Process	Evaluation of Qualifications.	5-point likert scale
	Award of Tenders	5-point likert scale
Supply Chain Personnel Competency	Capacity Planning	5 - point Likert Scale
	Order Processing	5-point Likert scale
	Management physical flow	5-point Likert scale
ICT integration	Supplier Segmentation	5-point Likert scale
	ICT infrastructure	5-point Likert scale
Procurement Function Performance	Complete projects	5-point Likert scale
	Stakeholders satisfaction	5-point Likert scale
	Quality goods	5-point Likert Scale

Source: Author (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Location of Study

Public secondary schools in Tharaka Nithi County, Kenya, were the sites of the research. Due to their disproportionate share of the national treasury's funding and the severity of the problems caused by ineffective supply chain management, public secondary schools were selected for this study (Wanyama, 2020). The coordinates of Tharaka Nithi County are 37.7238° E and 0.2965° S. Among the 47 new counties established under Kenya's 2010 constitution is Tharaka Nithi County. Its southern and western borders are with Embu County; its northern and eastern borders are with Meru County; its western borders are with Kirinyaga and Nyeri Counties; and its eastern and southern eastern borders are with Kitui County. About 393,177 people call the 2,609.5 km² (1,007.5 sq mi) of land that makes up the county home (Kenya National Bureau of Statistics [KNBS], 2019). The study settled on Tharaka Nithi County due to its rapid educational and infrastructural development (County Development Plan, 2022).

3.2 Research Design

Since the researcher would not be manipulating the data in any way, the descriptive cross sectional survey design was appropriate for this study. Kothari (2012) states that by collecting data and presenting it visually, descriptive research is possible to effectively portray the link between the dependent and independent variables, which is why it is recommended.

3.3 Target Population

The target population was 52 county public secondary schools in Tharaka Nithi County that are registered with the Ministry of Education, according to the County Education records (2024). Data collection and analysis was done at school level with three target respondents per school constituting one store keeper, one accounts clerk or bursar and one user. The three target respondents are the procurement committee members as per the public procurement and asset disposal act (2015). The choice of county public secondary schools was because they are the majority in the counties, they have superior infrastructures and procurement needs. Moreover, they have higher student and staff populations and are expected to have more progressed procurement

procedures and budgets. The store keeper, accounts clerk/bursar and one user directly involved in procurement and are member of procurement committee members hence are expected give more objective information as regards to the concepts under study. Therefore the expected number of respondents was 156. The selection of procurement committee members as respondents was based on their role in the direct acquisition of goods and services, while user representatives were chosen because they are the primary beneficiaries of the items and services that were acquired in Tharaka Nithi County's public secondary schools.

3.4 Sampling Technique and Sample Size

The study will be a census which is the study of all the 52 county public secondary schools in Tharaka Nithi County that are registered with the Ministry of Education, according to the County Education Office. Each of the fifty two county schools had two committee members and one user representative. Note that a bursar, clerk, procurement officer, or store man may serve on the procurement committee, while a matron, foreman, cateress, farm manager, or artisan might serve as the user representative. The selection of procurement committee members as respondents was based on their role in the direct acquisition of goods and services, while user representatives were chosen because they are the primary beneficiaries of the items and services that were acquired in Tharaka Nithi County's public secondary schools. Consequently, when it comes to providing feedback on SCM procedures and procurement function performance, the two types of responders are tops. There were 156 participants in the research.

3.5 Research Instruments

A standardised, self-administered questionnaire was used to gather primary data for the research. According to Mugenda and Mugenda (2003), defining the issue and the particular research goals are prerequisites to questionnaire design. Some of the survey questions were not open-ended. There are only going to be a few possible answers to these questions. Questionnaires save a lot of time, effort, and money, as pointed out by Kothari (2004). Similarly, it produces easily-collected and analyzed quantitative data.

3.6 Pilot Testing

Finding a small group of respondents who are representative of the population from which the samples are drawn is the most appropriate approach. Research by Cooper and Schindler (2010) and Mugenda & Mugenda (2003) both indicate that a pilot study sample of 10% or more of the population is often considered adequate. Using simple random selection, 6 participants were selected from county public secondary schools in Embu county. These participants were chosen for their comparable qualities, which allowed them to accurately reflect the main study.

3.6.1 Validity of Research Instrument

The level of validity may be defined as the extent to which the outcomes of the data analysis accurately reflect the phenomena being studied. The researcher verified the questions' content validity—their ability to assess the intended constructs—by submitting the questionnaire to the expert in the area for review and feedback. By using a legible font size, logically arranging elements, and providing clear information, the researcher guaranteed face validity. To determine if a constructor scale is genuine, one must first comprehend what it measures (Hair et al., 2007). The conceptions were grounded in relevant theories to guarantee their construct validity. To further clarify the connection between the two sets of variables, SPSS was used to process and analyse the acquired data.

3.6.2 Reliability of Research Instrument

Internal consistency is defined by Saunders and Bezzina (2015) as the process of assessing the consistency of replies by linking them to other questions in the questionnaire. With a Cronbach's alpha of 0.7, we can say that the research instrument is reliable. In a study conducted by Tavakol and Dennick (2011), it was found that research instruments with Cronbach's alpha values below 0.7 were considered unreliable, but instruments with Cronbach's alpha values equal to or higher than 0.7 were considered trustworthy. Research instruments such as Cronbach's Coefficient Alpha estimate were used to assess dependability in this investigation. The instruments were deemed trustworthy if the findings showed that all variable constructions had Cronbach's alpha values higher than 0.7.

Table 3: Reliability of Research Instruments

Variables	Cronbach's Alpha	Total items
Information sharing	0.701	6
Inventory management	0.780	6
Tendering process	0.704	6
Supply chain personnel competency	0.727	6
ICT integration	0.689	6

Source: Research data, (2024)

Acceptable Cronbach's alpha values are 0.7 or 0.6" (Grigethuijsen and Trimmer 2014). A scale of 0.70 or above is considered sufficient, according to Kothari (2010). Consistent with the reliability of the research instruments, all constructs showed Cronbach's Alpha values more than the acceptable threshold of 0.60.

3.7 Diagnostic Tests

Regression analysis assumption of normality was tested Greene (2002) emphasizes that in order to assess the mutual relationships among explanatory variables, it is imperative that the connection between the independent and dependent variables conforms to the Ordinary Least Squares' assumptions regarding linearity, multi-collinearity, normality, and homoscedasticity.

3.7.1 Normality Test

To identify any non-normal distribution, the Shapiro-Wilk test of normality was used. With a significance level of 0.05 or below, they are unable to rule out the possibility that the data is normal. Normality tests presume either a normal distribution of the error term or normality in the variables under scrutiny. Various tests, such as the Kolmogorov-Smirnov and Jarque-Bera tests, can be employed for this purpose. In this study, the researcher employed the Shapiro-Wilk test to assess the normality of the data. The Shapiro-Wilk test is a statistical method used to determine whether a dataset follows a normal distribution. When conducting the Shapiro-Wilk test, a significance level is established, commonly set at 0.05. This significance level serves as a threshold for interpreting the test results. If the resulting p-value from the Shapiro-Wilk test is greater than 0.05, it suggests that there is insufficient evidence to reject the null hypothesis. In this case, the data can be considered to be approximately normally distributed. On the other hand, if the p-value is less than or equal to 0.05, it

indicates significant evidence to reject the null hypothesis. This implies that the data significantly deviate from a normal distribution and are considered to be non-normally distributed.

3.7.2 Multicollinearity Test

Brewer (2002) points out that in the realm of regression analysis, multicollinearity is a diagnostic assessment aimed at discerning whether the independent variables, apart from the dependent variable, exhibit strong associations with each other. It's a statistical phenomenon that occurs when two or more predictor variables within a multiple regression model are highly correlated, indicating that one variable can be accurately predicted from the others with a significant degree of accuracy. In such situations, the coefficient estimates in multiple regressions can exhibit erratic fluctuations in response to minor changes in the model or data.

Multicollinearity emerges when there's interdependence among the explanatory variables in a multivariate regression model. If these explanatory variables are not intercorrelated, they are said to be orthogonal ((Mukras, 1993). Any deviation from orthogonality signifies some degree of multicollinearity. Moreover, certain independent variables may exhibit strong relationships, which are undesirable, as this can inflate coefficients, affecting the nature and magnitude of R and R-Squared values. In such cases, data transformation techniques should be considered to mitigate the interdependencies among independent variables. Tolerance Statistics (TS) and Variance Inflation Factor (VIF) statistics are employed to assess the presence of multicollinearity. Tolerance is associated with each independent variable and ranges from 0 to 1, with a VIF exceeding 10 signaling a high level of correlation, which should raise concerns in the study (Allison, 1999).

3.7.3 Homoscedasticity Test

It is presupposed that the error term exhibits uniform variance throughout the studied period. Instances of non-constant variance can result in substantial standard errors and diminished t statistics, thereby predisposing analyses to biased conclusions. Homoscedasticity was examined through the application of the Breusch-Pagan test, which posits uniformity in error term variance versus non-uniform variance. A p-

value below 0.05 indicates the absence of uniform variance, necessitating the adoption of robust standard errors or Fixed Generalized Least Squares (FGLS) as recommended by Wooldridge (2013).

3.8 Data Collection Procedures

Both primary and secondary sources of information were consulted in order to accomplish the goals and purposes of this study. Three hundred and fifteen people, including two committee members and one user representative from each of the one hundred and five public schools in Kenya's Tharaka Nithi County, were surveyed to provide the study's main data. The researcher received a study authorization from NACOSTI and approval from the Chuka Institutional Scientific and Ethics study Committee before data collection begins. The researcher agreed on a date to gather data and promise the respondents that their information was kept secret. Those who were part of the sample were served with the questionnaire by the researcher. The researcher ensured that participants are given sufficient time to complete the surveys.

3.9 Data Analysis

The purpose of data analysis is to find valuable information, inform conclusions, and help decision-making by analysing, cleaning, converting, and modelling data (Meta, 2014). As recommended by (Sekaran & Bougie, 2016), IBM SPSS was used to convert the data for future analysis once it had been edited for consistency and completeness. To change data, one must first map it, then extract it from the source system, apply the transformations, and then store it in the right dataset for accessibility, security, and increased usefulness. In order to evaluate the models later on, we collected descriptive data like standard deviation, mean, variance, and mode of output, and we also ran regression and correlation analyses. The link between the dependent and independent variables was measured using correlation and regression analysis.

3.9.1 Model Specification

In recent years, regression models have been widely used in data analysis to describe the connection between dependent and independent variables (Abd Elsalam, 2015). The following is a definition of the study's broad empirical model:

The univariate regression models that was used in the study are shown below:

$$Y = \beta_0 + \beta_1 X_1 + e \dots\dots\dots (i)$$

$$Y = \beta_0 + \beta_2 X_2 + e \dots\dots\dots (ii)$$

$$Y = \beta_0 + \beta_3 X_3 + e \dots\dots\dots (iii)$$

$$Y = \beta_0 + \beta_4 X_4 + e \dots\dots\dots (iv)$$

Without moderator

$$Y = \beta_0 + \beta_1 X + e \dots\dots\dots (v)$$

Where;

Y= Procurement Function Performance;

X₁ =Information Sharing;

X₂= Inventory Management;

X₃= Tendering Process

X₄=Supply Chain Personnel Competency

β₀ = The constant term

β₁-β₄= The coefficients for the various independent variables

ε = Composite error term of the model.

After introducing ICT integration as the moderating variable, equation (i) became;

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 X.M + e \dots\dots\dots (ii)$$

Where;

X-composite of SCM practices

Y= Procurement Function Performance

ε is the error of prediction.

X.M is the interaction term of supply chain management practices and ICT integration

Table 4: Data Analysis Matrix

Hypothesis	Hypotheses testing
H _{o1} : Information sharing does not have a statistically significant influence on the procurement function performance of county public secondary schools in Tharaka Nithi County	Simple regression analysis
H _{o2} : Inventory management does not have a statistically significant influence on the performance of procurement function of county public secondary schools in Tharaka Nithi County	Simple regression analysis
H _{o3} : Supply Chain Personnel Competency does not have a statistically significant influence on the performance of procurement function of county public secondary schools in Tharaka Nithi County	Simple regression analysis
H _{o4} : Tendering process does not have a statistically significant influence on the procurement function performance of county public secondary schools in Tharaka Nithi County.	Simple regression analysis
H _{o5} : ICT integration do not have a statistically significant moderating influence on the relationship between supply chain management practices and procurement function performance of County Public secondary schools in Tharaka Nithi County	Multiple regression analysis

Author (2024)

3.10 Ethical Considerations

The researcher received an authorization from NACOSTI and approval from the Chuka University Ethics Review Committee before data collection begins. In order to allay respondents' fears about disclosing sensitive information, the researcher explained the purpose and use of the data obtained. All possible respondents were asked to voluntarily contribute information after explaining the goal of the research. Everyone involved respected the participants' autonomy in choosing to take part in the research.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Response Rate

A total of 156 respondents were sent out questionnaires; 142 of them returned them, giving a return rate of 91.02% and a non-return rate of 8.98%. The non-response percentage was mostly caused by incomplete, partly returned, or empty questionnaires. For self-administered surveys, Wimmer and Dominick (2012) suggest a rate of return of 21-70% as adequate, ensuring accuracy and minimising bias; hence, 85% is suitable for this study.

4.2 Demographic Information

The section presents the respondents bio-data and their general information. It presents their gender, position, age, service duration and education levels.

4.2.1 Gender of Respondents

The study aimed to determine the gender distribution of the respondents. This was done to demonstrate that both genders were represented in the results. The results are displayed in table 5.

Table 5: Gender of the Respondents.

Gender	Frequency	Percentage
Male	57	40.1%
Female	85	59.9%
Total	142	100.0

Source: Research data, (2024)

The results in table five indicated that 40.1% of the respondents were male and 59.9% were women. The representation of each category exceeded the 30% barrier imposed by the affirmative action plan mandated by Kenya's constitution (2010), this analysis deems a sizeable disparity.

4.2.2 Respondents' Position

The study aimed to investigate the position that the respondents served in the county public secondary schools. The results are displayed in table 6.

Table 6: Respondents' Position in Schools

Respondent's position	Frequency	Percent
User	47	33.09%
Procurement officer/ Store Keeper	48	33.82%
Bursar/ Accounts Clerk	47	33.09%
Total	142	100.0

Source: Research Data (2024)

From the findings, out of 142 respondents, 33.09% of them were users, 33.09 were the Bursar/ Accounts Clerk while 33.82% were procurement officers implying they had experience on supply chain matters.

4.2.3 Respondents' Age Bracket

It was important to determine the distribution of the respondents across age; this is important considering the current age discourse within the public service in Kenya.

Table 7: Age Bracket of Respondents

Age bracket of respondents	Frequency	Percent
Below 25	20	14.1
25-35	66	46.5
Above 35 years	56	39.4
Total	142	100.0

Source: Research Data, (2024)

The age bracket of the respondents was investigated, and the findings showed that, of the 142 respondents, 14.1%% below 25 46.5% were 25-35% years, and 39.4% were above 35 years implying that most of the respondents were youth.

4.2.4 Respondents' Service Duration

The study sought to determine the years the respondents had been working in the county public secondary schools. This was important as employees who have worked longer can better rate the study construct. Findings are presented in Table 8.

Table 8: Service Duration of the Respondents

Service duration	Frequency	Percent
Below 1 year	22	15.5%
1-5 years	27	19.0%
5-10 years	36	25.4%
10-15 years	39	27.5%
over 15 years	18	12.7%
Total	142	100.0

Source: Research data, (2024)

On scrutinization of age bracket of respondents, those who had served for less than 1 year were 15.5%, 1-5 years were 19%, 5-10 years were 25.4%, 10-15 years were at 27.5% and over 15 years stood at 12.7%.

4.2.5 Education Level of Respondents

It was necessary to ascertain the respondents' educational backgrounds since doing so was likely to impact both their comprehension and the way the school ran. Findings are presented in Table 9.

Table 9: Service Duration of the Respondents

Education level	Frequency	Percent
Diploma	13	9.2%
Undergraduate	92	64.8%
Masters	34	23.9%
Ph.D	3	2.1%
Total	142	100.0

Source: Research data, (2024)

The study found that 9.2% had a diploma level, 64.8% were undergraduates, 23.9% had a master's degree, and 2.1% had a PhD. . The importance of education in improving procurement function performance was highlighted by Rentor et al. (2017), who found that education is crucial for making procurement choices.

4.3 Descriptive Analysis of Each Variable

Finding out how supply chain management practices impacted procurement performance in public secondary schools in Tharaka Nithi County, Kenya, was the goal of the research, which asked participants to rank their agreement with several claims. It was suitable to do frequency analysis since the data are categorical. For the sake of interpretation, a small standard deviation suggests that the majority of respondents were in agreement with the answers. Unanimity in the responses is indicative of a high standard deviation (SD). The mean score might be interpreted in a variety of ways, with 4.2 being the most agreeable, 3.40 to 4.19 the most agreeable, 2.60 to 3.39 the most neutral, 1.8 to 2.59 the most disagreeable, and 1.79 the most highly disagreeable. Tables and interpretations were prepared based on the results of the study's variable frequency analysis.

4.3.1 Descriptive Statistics of Information Sharing

The first construct of independent variable of the study was information sharing. Information Sharing was measured in terms of information sharing accuracy, timeliness and completeness or their equivalent views. Selected statements captured information sharing indicators according to literature reviewed. The respondents were requested to indicate the extent to which they agreed with selected statements about information sharing on a Likert scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree. The findings are presented in Table 10 below.

Table 10: Descriptive Statistics of Information Sharing

Information sharing	Mean	S.D
There is flow of information among user department	3.890	.848
We disclose truthful information to our customers	4.08	.855
Responding to suppliers needs improve credibility in supply chain	4.32	.758
We request our suppliers for information on products required	4.30	.724
There is continuous sharing of information with stakeholders	3.78	1.092
Useful information is disseminated among the procurement staff	3.80	1.089
Aggregate	4.028	0.894

Source: Research data, (2024)

The results in Table 10 show respondents agreed with the information sharing constructs with an aggregate score of Mean =4.028 and SD= 0.894. The mean for all the items of information sharing variables were between 3.78 and 4.32 implying that most of the respondents agreed with the statements implying that information sharing was effective in the county public secondary schools . A relatively low standard deviation, ranging between 0.724 and 1.092 was registered indicating that majority of the respondents agreed that there was proper information sharing among departments. Specifically, the respondents agreed that there is flow of information among user department at a Mean =3.890 and SD= 0.848, second they agreed that they disclose truthful information to their customers with a Mean of 4.08 and of 0.855. Third they agreed that responding to suppliers needs improve credibility in supply chain at Mean =4.32 and SD= 0.758. The opinion of the participants on “responding to suppliers needs improve credibility in supply chain” was that a majority of the respondents agreed. The statement that we request our suppliers for information on products required had majority of the respondents responding to the affirmative. On the statement that there is continuous sharing of information with stakeholders a majority

of the respondents agreed. The statement that useful information is disseminated among the procurement staff had majority of the respondents agree. The mode on all the information sharing variable's constructs was 4 thus supporting the high percentage of participants who agreed with the statements. The findings support those of Kipchumba and Keitany (2021) results that, in order to maintain good performance of procurement function and organizations information sharing practice must be effective through proper storing, inventory valuing according to the right standards to avoid undervaluing or overvaluing it.

4.3.2 Descriptive Statistics of Inventory Management

The second construct of independent variable of the study was inventory management. Inventory management was measured in terms of just in time, demand management ABC analyses or their equivalent views. The respondents were requested to indicate the extent to which they agreed with selected statements about inventory management on a likert scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree. The findings are presented in Table 11.

Table 11: Descriptive Statistics of Inventory Management

Inventory Management	Mean	S.D
The use of bin cards provides better control of inventory in the school	3.90	.925
The school has a material requirement panning system in place	3.89	.868
Material requirement panning as a system helped the school to effectively schedule inventories.	3.90	.977
There is reduction of the lead-time due to the adoption of Just-In-Time practices	3.83	1.038
There is continuous improvement in inventory management within the firm	3.66	.959
The school uses ABC analysis to facilitate shorter lead times for inventory	3.65	1.098
Aggregate	3.805	0.978

The results in Table 11 show respondents generally agreed with the inventory management constructs with an aggregate score of Mean =3.805 and SD= 0.9775. The mean for all the items of inventory management variables were between 3.65 and 3.90 implying that most of the respondents agreed that inventory management was conducted properly in the county public secondary schools. A relatively low standard deviation, ranging between 0.868 and 1.098 was recorded indicating that their

opinions on inventory management did not differ significantly with the mean. Specifically it was evident from the findings that majority of the participants agreed Mean =3.90 and SD= 0.925 with the statement that the use of bin cards provides better control of inventory in the school. Second when asked to indicate the extent to which they agree with the statement that the school has a material requirement panning system in place a majority of the respondents agreed Mean =3.89 and SD= 0.868. The opinion of the participants on the statement that material requirement panning as a system helped the school to effectively schedule inventories was that a majority agreed. The statement that there is reduction of the lead-time due to the adoption of Just-In-Time practices had majority of the respondents responded to the affirmative. On the statement that there is continuous improvement in inventory management within the firm a majority agreed. The statement that the school uses ABC analysis to facilitate shorter lead times for inventory a majority of the respondents agreed.

4.3.3 Descriptive Statistics of Tendering Process

The third construct of independent variable of the study was tendering process. Tendering process was conceptualized in terms of tender advertisement, tender evaluation and contract award or their equivalent views. The respondents were requested to indicate the extent to which they agreed with selected statements about tendering process on a likert scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree. The findings are presented in Table 12.

Table 12: Summary of Frequency Analysis of Descriptive Statistics

Tendering process	Mean	S.D
Assessing the competence of vendors is the responsibility of procurement officials.	3.96	.974
Timely requests for proposals are made by procurement officials, who award contracts to vendors many times a year.	3.73	1.019
Assessing the competence of vendors is the responsibility of procurement officials.	3.373	1.148
The most competitive bidders are always awarded the tender	3.371	1.102
All the stages of tendering process are followed in an organization	3.59	1.060
e-procurement system is used during the tendering process	3.58	1.192
Aggregate	3.607	1.083

Source: Research Data, (2024)

The results in Table 12 show respondents generally agreed with the tendering process constructs with an aggregate score of Mean =3.607 and SD= 1.083. The mean for all the items of tendering process variables were between 3.37 and 3.96 implying that most of the respondents agreed that tendering process was effective. A relatively low standard deviation, ranging between 0.974 and 1.192 was recorded indicating that although majority of the respondents agreed with the effectiveness of tendering process, they were moderately spread. Specifically the study's results were clear that participants agreed Mean =3.96 and SD= 0.974 with the assertion that procurement officers evaluate suppliers' credentials. When asked how much they agreed with the statement that procurement officials provide tenders to suppliers many times a year a majority of respondents asserted that they did with a mean of 3.73 and SD of 1.019. The opinion of the participants on the statement that assessing the competence of vendors is the responsibility of procurement officials revealed that a majority agreed with a Mean =3.373 and SD= 1.148. The results revealed that the respondents agreed Mean =3.371, SD= 1.102 that the most competitive bidders are always awarded the tender. Moreover the results show that respondents agreed that all the stages of tendering process are followed in an organization Mean =3.59, SD= 1.060. Finally respondents agreed Mean =3.58 and SD= 1.192 that e-procurement system is used during the tendering process.

4.3.4 Supply Chain Personnel Competency Descriptive Statistics

The fourth construct of independent variable of the study was supply chain personnel competency. Supply chain personnel competency was conceptualized in terms of skills training, skills utilization and reduced employee turnover or their equivalent views. Selected statements captured supply chain personnel competency. Indicators according to literature reviewed. The respondents were requested to indicate the extent to which they agreed with selected statements about Supply chain personnel competency on a likert scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree.

The findings are presented in Table 12.

Table 13: Descriptive Statistics of Supply Chain Personnel Constructs

Supply chain personnel competency	Mean	S.D
The supply chain personnel have knowledge and skills necessary for effective supply chain management	3.99	.964
We always assure the suppliers and manufacturers that needed resources was available at the right time and place	4.14	.839
Our staff have the ability to work effectively with customers to clarify requirements and negotiate solutions when constraints exist.	4.23	1.061
In our school, we guarantee material availability, that is, we procure or produce the required quantities on time both for internal purposes and for sales and distribution.	4.09	1.003
The procurement officers constantly undergone off-job training on procurement related matters	4.16	.994
We have staff with high analytical techniques, excel spreadsheets and may software to generate baseline statistical forecasts	3.94	.944
Aggregate	4.092	0.967

Source: Research Data, (2024)

The results in Table 13 show respondents generally agreed with the supply chain personnel constructs with an aggregate score of Mean =4.092 and SD= 0.967. A large majority of respondents agreed that the public secondary schools had competent supply chain staff, since the mean score on all components of the information sharing variable was slightly above 4. The mean for all the items of supply chain personnel variables were between 3.94 and 4.23 implying that most of the respondents agreed with the statements. A relatively low standard deviation, ranging between 0.839 and 1.061 was recorded indicating that majority of the respondents agreed with the answers. Specifically the results show that the respondents agreed with a Mean =3.99 and SD= 0.964 that employees had the knowledge and abilities needed for efficient management of the supply chain a majority of the respondents agreed. Respondents agreed Mean =4.14, SD= 0.839 that they always assure the suppliers and manufacturers that needed resources was available at the right time and place. They agreed that Mean =4.23, SD=1.061 there staff have the ability to work effectively with customers to clarify requirements and negotiate solutions when constraints exist. They agreed that Mean =4.09, SD=1.003 in our school, we guarantee material availability, that is, they procure or produce the required quantities on time both for internal purposes and for sales and distribution. They agreed that Mean =4.16, SD=0.994 the procurement officers constantly undergone off-job training on procurement related matters. They agreed that Mean =3.94, SD=0.944 they have staff

with high analytical techniques, excel spreadsheets and may software to generate baseline statistical forecasts.

4.3.5 Descriptive Statistics of ICT Integration

The moderating variable of the study was ICT integration, which was measured in terms of ICT infrastructure or their equivalent views. Selected statements captured ICT integration indicators according to literature reviewed. The respondents were requested to indicate the extent to which they agreed with selected statements about ICT integration on a likert scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree. The findings are presented in Table 12.

Table 14: Descriptive Statistics of ICT Integration

ICT integration	Mean	S.D
The head of procurement is computer literate	2.72	.828
Our school evaluates on-time delivery rate and defect rate of the suppliers using Computer software	3.87	.815
The school evaluates rate of responsiveness to inquiries using computer software	4.10	.955
My school evaluates rate of suppliers' efficiency and effectiveness using computer software	4.01	.915
The head of procurement has computer skills	3.85	1.003
In our school, Customer satisfaction is evaluated using computer software	3.67	1.236
Aggregate	3.703	0.959

Source: Research Data, (2024)

The mean for all the items of ICT integration variable were between 3.67 and 4.10 implying that most of the respondents agreed with the statements. A relatively low standard deviation, ranging between 0.815 and 1.236 was recorded indicating that although majority of the respondents agreed with the answers, they were moderately spread.

Table 15: Summary of Frequency Analysis of Procurement Function Performance

Procurement function performance	Mean	S.D
There has been a significant decrease in the transaction costs associated with procurement.	3.96	.999
The quality of the items purchased has not diminished, and the time it takes to finish the goods has decreased dramatically as a result of the anticipated completion dates.	3.67	.958
The delivery time of purchased products is reduced.	3.70	1.011
The market value is applied to the goods or services that are purchased.	3.72	.999
Products or services purchased meet or exceed client expectations.	3.77	.910
There has been a significant decrease in the transaction costs associated with procurement.	3.69	1.012
Aggregate	3.752	0.982

Source: Research Data, (2024)

The procurement performance variable's mean for each item ranged from 3.67 to 3.96, suggesting that the majority of respondents agreed with the claims. The results showed a generally dispersed set of answers, even if the majority of respondents agreed with them, with a reasonably low standard deviation of 0.910 to 1.012.

4.4 Diagnostic Tests

Diagnostic tests for normality, multicollinearity and heteroscedasticity were run on the model to determine its fitness for normalcy. This was done to test the validity of the assumptions underlying the standard Least Squares method.

4.4.1 Normality Test

To find out if the sample data came from a dataset that was regularly distributed, normality tests are utilized. According to Ghasemi and Zahediasl (2012), the majority of statistical methods and parametric tests, including correlation, linear regression, ANOVA, and t tests, presume that the data is distributed normally. To determine whether the error term was normal, the researcher concentrated on the normality test. To check for normality, the Kolmogorov-Smirnov and Shapiro-Wilk tests are used. Kolmogorov-Smirnov is used for large sample sizes, and the Shapiro Wilk test is used for small sample sizes (Thode, 2016). The outcomes are shown in Table 16. The data distribution is deemed normal if the Shapiro-Wilk test's significance value is more than 0.05; if it is less than 0.05, the data is said to deviate from a normal distribution. If the normalcy test comes out negative, the researcher may say with

95% certainty that the data is not normally distributed. If the data distribution does not deviate significantly from normal, then the researcher may conclude that the normality test was successful.

Table 16: Summary of Normality Test

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Information sharing	.254	142	.100	.817	142	.042
Inventory management	.316	142	.110	.786	142	.050
Tendering process	.247	142	.200	.822	142	.076
Supply chain personnel	.264	142	.070	.830	142	.045
ICT integration	.299	142	.090	.817	142	.017
Procurement Function Performance	.219	142	.020	.839	142	.049

a. Lilliefors Significance Correction

For every variable, the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests were performed. A statistically significant result ($p > 0.05$) was obtained from both tests. This indicates that the data on the variables was not normally distributed and that the null hypothesis of normalcy was rejected. Non-linear statistical approaches have been favored over standard linear techniques in this context. It is worthy noting that normality test having failed; there was no need of doing other assumptions of classical linear regression tests.

4.4.2 Homogeneity of Variance

An assumption underlying the statistical concept of homoscedasticity (homogeneity of variance) is that the dependent variable exhibits the same variation throughout the entire range of values for the independent variable (Hair, et al., 1998). Levene (1960) suggested using a Levene test for equality of variance to determine whether homoscedasticity. This was done using a one-way ANOVA method. The Levene test was employed since it does not provide a highly skewed collection of data because it employs deviations from group means.

Table 17 presents the outcomes.

Table 17: Test of Homogeneity of Variances

	Test of Homogeneity of Variances			
	Levene Statistic	df1	df2	Sig.
Information sharing	25.069	3	138	.283
Inventory management	6.564	3	138	.310
Tendering process	25.649	3	138	.035
Supply chain personnel competency	22.619	3	138	.021

Source: Survey Data, (2024)

Findings from Table 17 demonstrate that the independent variable Levene values compared to the dependent variable were statistically significant. Equal variances are assumed because the significance levels are greater than 0.05, the Levin test is non-significant, and the homogeneity of variance assumption has not been broken. This result had the consequence that the study's research hypothesis could be concluded with confidence using the data.

4.4.3 Multi-Collinearity

After the tolerance values were confirmed, multi-collinearity was analyzed using the variance inflation factor (VIF). Tolerance values more than 0.1 for both independent and dependent variables show no multi-collinearity, whereas VIF values greater than 10 (VIF = 10) suggest multi-collinearity issues (Field, 2009). The outcomes are shown in Table 18.

Table 18: Multi-Collinearity

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Information sharing	.554	1.807
Inventory management	.592	1.690
Tendering process	.546	1.830
Supply chain personnel competency	.633	1.581
a. Dependent Variable: Performance of Procurement function		

Source: Primary Data, (2024)

Given that all of the variables' tolerance values were greater than 0.1 and their variance inflation factors were lower than 10, Table 10 findings rule out the possibility of multi-collinearity (Field, 2009). The findings revealed that there was no problem with multi-collinearity among the variables, hence the amount of multi-

collinearity in the model could be allowed. The tolerance values are the corresponding VIF's reciprocals. The outcomes of this study can be trusted because the implication was that independent factors were not strongly connected but independent and dependent variables were.

4.4.4 Autocorrelation Test

This diagnostic was tested using Durbin-Watson test. A DW value of 0 implies that there exists positive autocorrelation, while a DW of 4 implies high negative correlation level. A DW value of within 2 implies that there is existence of autocorrelation (Nassiuma (2010)). The results are presented in Table 19.

Table 19: Autocorrelation Tests for the Test Results

Independents Variable	Durbin-Watson Statistic	Status
Overall Model	1.912	Absence of Autocorrelation
Model 1	1.667	Absence of Autocorrelation
Model 2	1.496	Absence of Autocorrelation
Model 3	1.496	Absence of Autocorrelation
Model 4	1.791	Absence of Autocorrelation

Source: Survey Data, (2024)

Table 11 shows the diagnostic test for regression models between the independent variables and the dependent variable, performance of procurement functions. The rule of thumb is that, if the statistics is zero, then there is evidence of positive autocorrelation and hence null hypothesis is rejected. If the statistic is 2, then there is no problem of autocorrelation. If the statistic is 4, then there is evidence of negative autocorrelation and hence null hypothesis is rejected. The study statistics obtained implied that there was no evidence of autocorrelation.

4.5 Correlation Analysis of the Study Variables

Correlation establishes the nature of the link between two variables and the way in which they interact. Pearson correlation was employed to assess the magnitude of the linear relationship between the variables. According to Hair et al. (2006), a correlation coefficient (r) between 0.00 and 0.20 indicates no association, between 0.21 and 0.40 indicates a weak relationship, between 0.41 and 0.60 indicates a moderate relationship and between 0.61 and 0.80 indicates a strong relationship, while a (r) between 0.81 and 1.0 indicates a very strong relationship.

The findings are shown on Table 20.

Table 20: Pearson Correlation between Study Variables

		Correlations						
		Information Sharing	Inventory Management	Tendering Process	Supply chain personnel competency	ICT Integration	Performance of procurement functions	
Information Sharing	Pearson Correlation	1						
	Sig. (2-tailed)							
Inventory Management	Pearson Correlation	.142	1					
	Sig. (2-tailed)	.093						
Tendering Process	Pearson Correlation	.947**	.155	1				
	Sig. (2-tailed)	.000	.065					
Supply chain personnel competency	Pearson Correlation	.807**	.228**	.788**	1			
	Sig. (2-tailed)	.000	.006	.000				
ICT Integration	Pearson Correlation	.475**	.331**	.490**	.554**	1	**	
	Sig. (2-tailed)	.000	.000	.000	.000			
Performance of procurement function	Pearson Correlation	.628**	.267**	.617**	.765**	.698**	1	
	Sig. (2-tailed)	.000	.001	.000	.000	.000		

** . Correlation is significant at the 0.01 level (2-tailed). N=142

The results in table 20 show a positive and significant association between information sharing and performance of procurement functions ($r = .628$, $p = 0.000$). This implies that efficient management of information sharing in the Public secondary schools in Tharaka Nithi County increases performance of procurement function. The findings support those of Kipchumba and Keitany (2021) results that, in order to maintain good performance of procurement function and organization information sharing practice must be effective through proper storing, inventory valuing according to the right standards to avoid undervaluing or overvaluing it.

The correlation data also show a favorable and substantial link between performance of procurement functions and inventory management ($r = 0.267$, $p = 0.01$). This shows that regular and efficient management of inventory management improves performance of procurement functions. Moreover, the results determined that the correlation between performance of procurement functions and tendering process was

0.412. This was statistically significant at the 1% level. Therefore, greater investment in tendering process will enhance the performance procurement functions Badenhorst et al. (2015), who studied public sector workplaces in South Africa, found results that were in line with current study findings. The results determined that the correlation between performance of procurement functions and supply chain personnel competency was 0.765**. This was statistically significant at the 1% level. Therefore, greater investment in supply chain personnel competency will enhance the performance procurement functions Badenhorst et al. (2015), who studied public sector workplaces in South Africa, found results that were in line with current study findings.

4.6 The Effect of Information Sharing on the Performance of Procurement Function

Finding out how of information sharing affects the performance of procurement function in Public Secondary Schools in Tharaka Nithi County was the study's number one objective. Simple regression analysis was employed to test the null hypothesis H_01 , which asserted that information sharing has no statistically significant influence on procurement function performance of county public secondary schools in Tharaka Nithi County. The results are presented in Table 21.

Table 21: Regression Analysis for Information Sharing on the Performance of Procurement Function.

(a). The Goodness of Fit of Model

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.628 ^a	.394	.390	.78023	.394	91.050	1	140	.000

a. Predictors: (Constant), Information Sharing

b. Dependent Variable: Procurement Function Performance

The results in Table 21(a), show that the study's adjusted R^2 value was 0.390 at a probability value of 0.000, which is less than the significance level of 0.05 therefore information sharing can account for 39.4% of differences in performance of procurement function, whereas random error or other factors can account for 60.6% of those variations.

(b): The Overall Significance of the Model

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.428	1	55.428	91.050	.000 ^b
	Residual	85.227	140	.609		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance
b. Predictors: (Constant), Information Sharing

Source: Primary Data, (2024)

According to table 21(b) the p-value was 0.000 and the F-value was 91.050. A p-value less than 0.05 indicate that the overall model examining the impact of information sharing on the performance of procurement functions in public secondary Schools in Tharaka Nithi County was statistically significant. This research shows that information sharing is a reliable indicator of improved performance of procurement function.

Regression Coefficients for the model on information sharing and performance of procurement functions were presented in Table 21 (c).

(c): The Individual Significance of the Model

		Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.109	.305		3.639	.000
	Information Sharing	.697	.073	.628	9.542	.000

a. Dependent Variable: Procurement Function Performance

Source: Primary Data, (2024)

According to table 21(c) the coefficients obtained by the results evaluating the relationship between information sharing and the performance of procurement function in Public Secondary Schools in Tharaka Nithi County, implied there was a statistically significant relationship between the variables. The coefficient estimate of the constant in the model (β_0) is 1.109 and p-value=0.000<0.05 depicting that the average value of performance of procurement functions is 1.109 units when the independent variable is zero. The results obtained a coefficient estimate (β_1) =0.697 and p-value=0.000<0.05. This depicted a significant positive relationship between

information sharing and the performance of procurement function in County Public Secondary Schools in Tharaka Nithi County. According to the results, there is a strong and statistically significant association between the two variables (information sharing and procurement function performance), because the p-values are less than 0.05. Therefore, as the information sharing improves a percentage, the performance of procurement function increases by 69.7% holding all other factors constant.

The null hypothesis (H_0) stated that information sharing has no statistically significant influence on procurement function performance of public secondary schools in Tharaka Nithi County was thus rejected and demonstrated that information sharing is a reliable predictor of the performance of procurement function. Therefore there will be an improvement in the procurement function performance of the county public secondary schools in Tharaka Nithi County if sufficient information exchange is effectively put into practice.

Therefore the postulates of the knowledge-based theory (Zahra, 2004) that for an institution to generate value of its resources, it needs to embrace systems that allow open communication and information sharing. This has thus been empirically proved by the current study findings. The knowledge based theory suggests that all parties participating in supply chain management should disseminate relevant information to one another. Effective information sharing fosters collaboration between buyers and suppliers. When both parties have access to relevant data, such as demand forecasts, inventory levels, and production schedules, they can work together more effectively. This collaboration leads to better alignment of goals, improved planning, and a more responsive supply chain, ultimately enhancing procurement performance.

Additionally, the results of this study are congruent with those of Odhiambo et al. (2020) study. The research, which examined elements impacting information exchange, design, and management of supply chain performance in Ethiopian public organizations. Four public health organizations were the focus of the research on supplier information exchange. A total of 345 public health organizations personnel participated in the survey. Panel design was used in conjunction with simple and multivariate regression analysis. There was a statistically significant relationship

between the firm's success and the amount of information shared with suppliers. The previous study employed secondary data, whereas the current study used primary data. Further it was contextualized in a different context and did not show aspects of information exchange that were being investigated. These results further concur with those of Otieno *et al.*, (2022) who found that supplier information sharing had a positive effect on supply chain performance in selected county governments of Nyanza region, Kenya. Additionally, Odhiambo et al., (2020) and Hallikas and Vilko (2017) found that there was a statistically significant correlation between the firm's success and supplier information sharing. The simple regression model for the influence of information sharing on the performance of procurement function can therefore be presented by the equation below.

$$Y = 1.109 + 0.697X_1$$

Where; Y = performance of procurement function, 1.109 = constant, 0.697 slope of regression model, X₁ = Information Sharing,

4.7 The Effect of Inventory Management on the Performance of Procurement Function

The second objective of the study was to investigate the effect of inventory management on procurement performance in County Public Secondary Schools in Tharaka Nithi County. The null hypothesis tested was H₀₂: Inventory management has no statistically significant influence on the procurement function performance of public secondary schools in Tharaka Nithi County. The results are shown in Table 22.

Table 22: Regression Analysis for Inventory Management on Performance of Procurement Function

The results are presented in Table 22.

(a). The Goodness of Fit of Model

Model Summary ^b									
Model	R	Adjusted R Square	Std. Error of the Estimate	Change Statistics			df1	df2	Sig. F Change
				R Square	R	F			
1	.267 ^a	.071	.064	.96607	.071	10.708	1	140	.001

a. Predictors: (Constant), Inventory Management

b. Dependent Variable: Procurement Function Performance

The results in Table 22(a), the study's R-squared value was 0.064 at a probability value of 0.001, which is less than the significance level of 0.05 therefore inventory management can account for 6.4% of differences in the performance of procurement function, whereas random error or other factors can account for 93.6% of those variations.

(b): The Overall Significance of the Model

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.994	1	9.994	10.708	.001 ^b
	Residual	130.661	140	.933		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance

b. Predictors: (Constant), Inventory Management

Source: Primary Data, (2024)

According to table 22(b) the p-value was 0.001 and the F-value was 10.708. A p-value less than 0.05 indicate that the overall model examining the impact of inventory management on the performance of procurement function in public secondary Schools in Tharaka Nithi County was statistically significant. This research shows that inventory management is a reliable indicator of improved performance of procurement function. Regression Coefficients for the model on inventory management and performance of procurement functions were presented in Table 21 (c).

(c): The Individual Significance of the Model

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.287	.515		4.444	.000
	Inventory Management	.412	.126	.267	3.272	.001

a. Dependent Variable: Procurement Function Performance

Source: Primary Data, (2024)

According to table 22(c) the coefficients obtained by the results evaluating the relationship between inventory management and the performance of procurement function inCounty Public Secondary Schools in Tharaka Nithi County, implied there was a statistically significant relationship between the variables. The coefficient

estimate of the constant in the model (β_0) is 2.287 and $p\text{-value}=0.000<0.05$ depicting that the average value of performance of procurement function is 2.287 units when the independent variable is zero. The results obtained a coefficient estimate (β_1) =0.412 and $p\text{-value}=0.001<0.05$. This depicted a significant positive relationship between inventory management and the performance of procurement function in Public Secondary Schools in Tharaka Nithi County. According to the results, there is a strong and statistically significant association between the two variables (inventory management and procurement performance), because the p-values are less than 0.05. Therefore, as the inventory management improves a percentage, the performance of procurement function increases by 41.2% holding all other factors constant.

The null hypothesis (H_0) stated that inventory management has no statistically significant influence on procurement function performance of public secondary schools in Tharaka Nithi County was thus rejected and demonstrated that inventory management is a reliable predictor of the performance of procurement function. Therefore there will be an improvement in the procurement function performance of the public secondary schools in Tharaka Nithi County if sufficient inventory management is effectively put into practice.

Therefore the postulates of the Meyer and Rowan's (1977) institutional theory that suggested that formal structures such as inventory management shape the performance of other functions in the organisation have been proved by the empirical findings of this study. The conclusions of the study suggest that in order to enhance procurement performance, more funding should be allocated to inventory management. Kipchumba and Keitany (2021) concur with the results that, in order to maintain good inventory management, an organization must store its inventory and value it according to the right standards to avoid undervaluing or overvaluing it. A couple of popular approaches to inventory management are materials requirement planning and the just-in-time technique. The former involves anticipating when products will be required while the latter involves scheduling material delivery according to sales projections. A critical literature review study conducted by Jungmann et al., (2020) in Switzerland, had similar assertions that inventory management has a direct effect on performance of procurement functions and any

organization that desires good performance of its functions should embrace proper management of inventory.

Effective inventory management helps control costs associated with holding and managing stock. By maintaining optimal inventory levels, organizations can avoid overstocking, which ties up capital and incurs additional holding costs, as well as stockouts, which can lead to lost sales and dissatisfied customers. This balance is essential for enhancing the overall financial performance of the company, as procurement managers can make informed decisions about purchasing and resource allocation based on accurate inventory data. The results concur with Transactions-Cost Economics theory which states that a company's structure should aim to minimize both transaction and production costs. When deciding whether to engage in vertical integration or to utilize the market for exchange, corporations take transaction costs into account. The findings contradict with those of Khan and Siddiqui (2019) who found that inventory management and production performance were unrelated. This findings concur with Mulandi and Ismail (2019) who found that inventory management strategies on the efficiency and effectiveness of Kenya's commercial state enterprises.

The simple regression model for the influence of inventory management on the Procurement Function Performance can therefore be presented by the equation below.

$$Y = 2.287 + 0.412X_2$$

Where; Y = performance of procurement fuction, 2.287 = constant, 0.412 slope of regression model, X₂ = Inventory Management

4.8 Effect of Tendering Process on the Performance of Procurement Function

The third study objective was to examine the effect of tendering process on procurement performance in Public Secondary Schools in Tharaka Nithi County. The null hypothesis H_03 that tendering process has no statistically significant influence on the procurement function performance of public secondary schools in Tharaka Nithi County was tested using simple regression analysis. The results are shown in Table 21.

Table 23: Regression Analysis for Tendering Process on Performance of Procurement Function.

(a). The Goodness of Fit of Model

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.617 ^a	.381	.377	.78849

a. Predictors: (Constant), Tendering Process

Source: Primary Data, (2024)

The results in Table 23(a), show that the study's R-squared value was 0.377 at a probability value of 0.000, which is less than the significance level of 0.05. According to the R-squared value of 0.377 found in this study, the independent variable tendering process can account for 37.7 % of differences in the performance of procurement function, whereas random error or other factors can account for 62.3% of those changes.

The outcomes of the model showing the overall significance of the model are shown in table 23(b).

(b): The Overall Significance of the Model

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.615	1	53.615	86.237	.000 ^b
	Residual	87.040	140	.622		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance

b. Predictors: (Constant), Tendering Process

Source: Primary Data, (2024)

Table 23(b), presents the results of the study's analysis of variance (ANOVA) for the regression analysis. The $F=86.23$, $p\text{-value} = 0.000$. The overall model examining the

effect of tendering process on the performance of procurement functions was statistically significant, since the estimated p-value (0.000) was less than the significance level (0.005). The results of this study demonstrate that tendering process is a reliable indicator of performance of procurement function.

The coefficients for the model of performance of procurement function and tendering process are shown in regression table 23. (c).

(c): The Individual Significance of the Model

Model		Coefficients ^a		Standardized Coefficients	t	Sig.
		Unstandardized Coefficients	Std. Error			
		B		Beta		
1	(Constant)	1.131	.311		3.641	.000
	Tendering Process	.691	.074	.617	9.286	.000

a. Dependent Variable: Procurement Function Performance

Source: Primary Data, (2024)

Table 23(c) indicates that the regression constant was 1.131 the slope of the resulting regression model was 0.691. The t-statistic for this model was 9.286, and its associated P-value was 0.000, meaning that it was statistically significant at that level. This data demonstrates that there is a statistically significant effect of tendering process on performance of procurement functions.

The findings of this study demonstrate the significance of tendering process on performance of procurement function (Timely delivery, less lead times and quality goods). The null hypothesis H₀₃: that there is no statistically significant relationship between tendering process and performance of procurement functions in Tharaka Nithi County Government was rejected and the conclusion was that tendering process influences the performance of procurement function in Tharaka Nithi County Government. Therefore Public secondary schools that do not properly manage their tendering process in terms of tender advertisement, tender evaluation and contract award are likely to have diminished performance of procurement function.

The postulates of the Institutional Theory Meyer and Rowan's (1977) lend critical support to this finding. The theory indicated that all parties involved in the

organizational processes such as tendering process as in the case of the current study are required to adhere to the procedures outlined in the relevant institutional processes in order to succeed in functional outputs. This notion is therefore the foundation of the study's tendering process variable. The public secondary schools in Tharaka Nithi County demonstrated improved procurement performance when the tendering process was effectively implemented, suggesting that more investment in the process should be taken into consideration for improved procurement performance.

These findings are explained by the findings of Matto *et al.* (2021) that found that tendering process promotes a competitive environment where multiple suppliers can bid for contracts. This competition not only helps in achieving the best price but also encourages suppliers to enhance the quality of their offerings. By ensuring that all qualified suppliers have the opportunity to participate, the tendering process fosters fairness and transparency, which are essential for building trust among stakeholders and ensuring accountability in public procurement. This result concurs with institutional theory which suggests that the buyer-seller relationship by outlining the effects of one party's actions on the other and on other parties involved, including, but not limited to, the optimality or lack thereof of decisions involving the use of monetary and non-monetary resources. This result is consistent with Matto *et al.* (2021) who found that tender process affected the value for money in Tanzania's procurement system. Similarly, the results are consistent with those of Ngumi (2015) who found that open tendering improved the quality of goods and services procured. The simple regression model for the influence of tendering process on the performance of procurement functions can therefore be presented by the equation below.

$$Y = 1.131 + 0.691X_3$$

Where; Y = Performance of procurement function, 1.131 = constant, 0.691 = slope of regression model, X_3 = tendering process.

4.9 Supply Chain Personnel Competency and Performance of Procurement Function

The fourth study objective was to determine the influence of supply chain personnel competency on procurement function performance in Public Secondary Schools in Tharaka Nithi County. The null hypothesis H_03 that supply chain personnel

competency has no statistically significant influence on the procurement function performance of public secondary schools in Tharaka Nithi County was tested using simple regression analysis. The results are shown in Table 24.

Table 24: Regression Analysis for Supply Chain Personnel Competency on Performance of Procurement Function
(a). The Goodness of Fit of Model

Model Summary									
Model	R	Adjusted R Square			Std. Error of the Estimate	Change Statistics			Sig. F Change
		R Square	Adjusted R Square	R Square Change		F Change	df1	df2	
1	.765 ^a	.585	.582	.64570	.585	197.356	1	140	.000

a. Predictors: (Constant), Supply Chain Personnel Competency

Source: Primary Data, (2024)

According to Table 24(a), the study's adjusted R-squared value was 0.585 at a probability value of 0.000, which is less than the significance level of 0.05. According to the adjusted R-squared value of 0.582 found in this study, the independent variable supply chain personnel competency can account for 58.2% of differences in performance of procurement functions, whereas random error or other factors can account for 41.8% of those changes.

The outcomes of the model showing the overall significance of the model are shown in table 24(b).

(b): The Overall Significance of the Model

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.284	1	82.284	197.356	.000 ^b
	Residual	58.371	140	.417		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance

b. Predictors: (Constant), Supply chain personnel competency

Source: Primary Data, (2024)

Table 24(b), presents the results of the study's analysis of variance (ANOVA) for the regression analysis. The F-197.356, p-value 0.000. The overall model examining the effect of supply chain personnel competency on performance of procurement functions was statistically significant, since the estimated p-value (0.000) was less

than the significance level (0.005). The results of this study demonstrate that supply chain personnel competency is a reliable indicator of performance of procurement functions.

The coefficients for the model of performance of procurement functions and supply chain personnel competency are shown in regression table 24. (c).

(c): The Individual Significance of the Model

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.630	.242		2.599	.010
Supply chain personnel competency	.832	.059	.765	14.048	.000

a. Dependent Variable: Procurement Function Performance

Source: Primary Data, (2024)

Table 24(c) indicates that the regression constant was 1.630. The slope of the resulting regression model was 0.832. The t-statistic for this model was 2.599, and its associated P-value was 0.010, meaning that it was statistically significant at that level. This data demonstrates that there is a statistically significant effect of supply chain personnel competency on performance of procurement functions.

According to the findings regression analysis, ($P < 0.05$) thus indicating that there is a strong statistically significant relationship between supply chain personnel and procurement performance. Thus if supply chain personnel variable is successfully implemented there was a boosted procurement function performance in the public secondary schools in Tharaka Nithi County. The implication of the findings is that procurement managers ought to invest in supply chain personnel to boost procurement performance. The findings of this study demonstrate the significance of supply chain personnel competency on performance of procurement function (degree of accomplishment of tasks). The null hypothesis H_03 : that there is no statistically significant relationship between supply chain personnel competency and performance of procurement function in Tharaka Nithi County Government was rejected and the conclusion was that supply chain personnel competency influences performance of procurement function in Tharaka Nithi County Public Schools. Public institutions that

do not properly manage their e supply chain personnel competency in terms of skills training, skills utilization and reduced employee turnover are likely to have diminished performance of procurement functions.

The postulates of the the knowledge-based theory (2004) lend critical support to this finding. The theory indicated that workforce competencies levels have the potential to influence performance of procurement functions. The knowledge-based theory of the company states that the most valuable resource for the business is its knowledge. Since knowledge-based resources are often difficult to reproduce, its advocates argue that socially complicated, diverse knowledge bases and competencies across organizations are the principal drivers of sustained competitive advantage and improved corporate performance (Grant, 2007). Companies' rules, processes, records, and systems, as well as their employees and corporate culture, are among the many sources of this data (Zander, 2007). Patrucco et al., (2022) had their study titled "Can you grow your supply chain without skills? The role of human resource management for better supply chain management in Latin America", The aim of this research was to examine how knowledge acquisition and use activities by supply chain (SC) workers helped to create competitive advantage. The findings demonstrate that having a wide range of professional connections helps SC professionals become more skilled and competent, which in turn affects their performance and job satisfaction. These highlights how important it is to invest in highly qualified people capital as they may boost knowledge acquisition, usage, and, eventually, SC competitiveness.

Supply chain personnel bring essential expertise and skills that are crucial for effective procurement processes. Their knowledge of market trends, supplier capabilities, and negotiation tactics enables organizations to make informed purchasing decisions. Skilled personnel can identify cost-saving opportunities and assess supplier quality, leading to improved procurement outcomes and enhanced organizational performance. This results concur with Mwangi (2019) who found that competency of supply chain personnel affected performance for Kenyan manufacturing enterprises

The simple regression model for the influence of supply chain personnel competency on the performance of procurement functions can therefore be presented by the equation below.

$$Y = 0.630 + 0.832X_4$$

Where; Y = Performance of procurement function , 0.630 = constant, 0.832 = slope of regression model, X_4 = supply chain personnel competency .

4.10 Moderating Effect of ICT Integration on the Relationship between Supply Chain Management Practices and Performance of Procurement Function.

The study's fifth objective was to examine the moderating effect of ICT integration on the relationship between supply chain management practices and procurement function performance of County Public secondary schools in Tharaka Nithi County. The hypothesis evaluated was that ICT integration has no statistically significant moderating influence on the relationship between supply chain management practices and procurement function performance of County Public secondary schools in Tharaka Nithi County. Multiple linear regression analyses were used to test the hypotheses. The results are presented under the following sub-sections.

To test the Null Hypothesis H_{05} which stated that there is no statistically significant moderating effect of ICT integration on the relationship between supply chain management practices and performance of procurement function in Tharaka Nithi County Government, Kenya, multiple regression analysis was carried out using guidelines set out by Hayes and Rockwood (2017). Moderation was tested by checking the behaviour of the adj. R^2 and the coefficient of regression of the independent variable were monitored for any change. This was the criteria for the decision on whether the hypothesis was supported or not.

The results are presented in Table 25 to 27.

Table 25: The Goodness of Fit of Model for ICT Integration, Supply Chain Management Practices and Performance of Procurement Function

Model Summary							Observation
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Model 1 (adj. R2)	
1	.805 ^a	.648	.641	.59859	.648	.583	Explanatory power of the model adj. R2 improved by 0.058

a. Predictors: (Constant), Supply chain management practices *ICT integration, Supply chain management practices, ICT Integration

The findings in Table 25 showed that ICT integration, moderated the relationship between supply chain management practices and performance of procurement functions . The values of adjusted R-squared obtained for the subsequent models testing the moderating effect improved from 0.583 to 0.641. This implies that enhancing the moderator would increase the effect of the predictor on performance of procurement functions by 17.3%.

The study further carried out Analysis of Variance (ANOVA) test to ascertain the significance of the estimation model. Results presented in table 26

Table 26: ANOVA Results Showing Overall Significance of the Model for Objective Four.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91.208	3	30.403	84.851	.000 ^b
	Residual	49.447	138	.358		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance
b. Predictors: (Constant), X.M, Supply chain management practices, ICT Integration

The findings presented in Table 24 show the ANOVA results of the regression model estimating the moderating effect of the ICT integration on the relationship between supply chain management practices and performance of procurement functions. The results show that F statistics was 84.851 and p-value $0.000 < 0.05$. This implied that the model used is statistically significant. Also, this signifies that the null hypothesis

stated that there is no statistically significant moderating effect of the ICT integration on the relationship between supply chain management practices and performance of procurement functions is rejected. A conclusion is drawn that the ICT integration has a significant moderating effect on the relationship between supply chain management practices and performance of procurement functions .

Further the study results determined the coefficient estimates that pointed out the magnitude that the ICT integration affected the relationship between supply chain management practices and performance of procurement function in Tharaka Nithi County Government, Kenya. The regression coefficients for the model are presented in Table 27.

Table 27: Coefficient Estimates of the Moderating Model

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.151	1.166		0.986	0.032
Supply chain management practices	0.133	.308	0.092	0.433	0.015
ICT Integration	0.040	.312	0.032	0.130	0.027
Supply chain management practices *ICT integration	0.147	.077	0.753	1.894	0.040

a. Dependent Variable: Procurement Function Performance

Results in Table 27 showed that when supply chain management practices interacted with the ICT integration , the resultant coefficient (0.147) was positive and significant therefore implying that enhancing the ICT integration in supply chain management practices would improve performance of procurement functions through timely delivery of goods and services, less lead times and quality goods. Thus the null hypothesis that the there is no statistically significant moderating effect of the ICT integration on the relationship between supply chain management practices and performance of procurement functions is rejected. Therefore, the study concludes that the ICT integration moderates the relationship between supply chain management practices and performance of procurement functions .

The conclusion arrived at in this hypothesis can be explained on several grounds. First, as observed by literature by Otchere et al. (2023) an institutions management that stimulates the ICT integration integrated databases, information sharing, and technological improvements affects the functioning supply chain which creates value for the institution. Secondly, Mohamed (2021) adds that ICT integration is an essential working tool for every organization's production. Therefore, to achieve successful supply chain performance, buyer-supplier management, information sharing, and short reaction times were crucial strategies. These attributes are associated with an enhance provision of procurement functions.

Third, from the theoretical literature, the study used the postulates of the knowledge-based theory (Zahra and Filatotchev, 2004) . The theory posits that One manner in which ICT integration may greatly aid the company's knowledge-based vision is via the utilisation of information systems to consolidate, enhance, and expedite vast intra- and inter-firm knowledge management. These benefits enhance the provision of supply chain functions and therefore influence effectiveness in procurement performance as proved by the empirical findings of the current study.

Lastly, from the findings shown in Table 28, the coefficient estimates of the moderating effect of ICT integration on the relationship between supply chain management practices and performance of procurement function in Tharaka Nithi County Public secondary schools, Kenya can be presented in the regression equation below:

$$(Y) = 1.151 + 1.133x_1 + 0.040x_3 + .0147x_{1*x_3} + \varepsilon \dots\dots\dots 5$$

Where, X_1 = Supply chain management practices, X_3 = ICT integration, Y is the dependent variable representing performance of procurement function.

ε is the error of prediction.

x_{1*x_3} is the interaction term of supply chain management practices and ICT integration

4.11 Multiple Regression Analysis

Multiple regression (R) is a symbol for a model that makes predictions about the connection between independent and dependent variables. The extent to which shifts

in the independent variables explain shifts in the dependent variable is calculated using a set of correlation coefficients. (R²). Below, presented are the calculated values of R and R².

Table 28: Multiple Regression Model Summary

Model	Model Summary					Change Statistics			
	R	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	
1	.771 ^a	.595	.64500	.583	50.273	4	137	.000	

a. Predictors: (Constant), Supply chain personnel competency , Inventory Management, Tendering Process, Information Sharing

Source: Primary Data, (2024)

The results in table 28 implied that performance of procurement functions and supply chain practices are strongly and positively correlated, as shown by the multiple coefficients of variation (R) value of 0.583. supply chain practices was conceptualized as supply chain personnel competency , inventory management, tendering process, information sharing can be held accountable for 58.3% of changes in performance of procurement functions , while random mistake and other factors can be held accountable for 41.7 % of them.

The results of this study demonstrate that supply chain management practices are crucial for influencing the procurement performance of Public Secondary Schools in Tharaka Nithi County. Second, theoretical studies that incorporate the tenets of the transactions-cost economics theory by Coase (1937) and Institutional Theory by Meyer and Rowan's (1977) which demonstrates the significance of understanding supply chain management practices as it may influence the performance of procurement functions. The study adds to the development of the theories by first showing the performance of procurement functions gains derived from supply chain management practices and by empirically showing extent through which all critical aspects of supply chain management practices affect the performance of procurement functions. The current study delved into these supply chain management practices; critical aspects which remained unexplored by extant literature.

4.10.1 Analysis of Variance

Table 29: Multiple Regression ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.659	4	20.915	50.273	.000 ^b
	Residual	56.996	137	.416		
	Total	140.655	141			

a. Dependent Variable: Procurement Function Performance

b. Predictors: (Constant), Supply chain personnel competency , Inventory Management, Tendering Process, Information Sharing

Source: Primary Data, (2024)

The F test determines if a set of variables is collectively significant. The p-value, which is just one indicator of significance in a F Test, was also considered in this study to see whether the probability outcomes may have happened by coincidence. The results in table 27 show that $F(4, 137) = 50.273$ and $p\text{-value} = 0.000 < 0.05$, implying that the model used is statistically significant. Also this signifies that the null hypothesis that there is no statistically significant joint effect of supply chain personnel competency, inventory management, tendering process and information sharing on performance of procurement functions is rejected.

4.10.2 Test of Significance of Regression Coefficients

The cause-and-effect link between the dependent variable and the explanatory factors was determined using the regression coefficients and the t-test at the 5% level of significance.

Table 30: Test of Significance of Regression Coefficients

Coefficients ^a				
Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
1 (Constant)	0.060	0.399	0.149	0.811
Information Sharing	0.537	0.154	3.487	0.000
Inventory Management	0.615	0.162	3.796	0.002
Tendering Process	0.541	0.165	3.279	0.004
Supply chain personnel competency	0.593	0.179	3.313	0.001

a. Dependent Variable: Procurement Function Performance

Source: Primary Data, (2024)

Table 30 presents the model's intercept and slope coefficients. The purpose of this research was to examine the joint effect of supply chain practices constructs; supply chain personnel competency , inventory management, tendering process and information sharing on the performance of procurement functions in public secondary

schools in Tharaka Nithi County, Kenya. The joint variables null hypotheses were rejected, and the regression coefficients were 0.537, 0.615, 0.541 and 0.593 (p-values >.000). Performance of procurement functions is therefore positively correlated with all the supply chain practices constructs. The coefficient of regression in Table 28 was used in coming up with the model below:

$$Y = 0.060 + 0.537X_1 + 0.615X_2 + 0.541X_3 + 0.593X_4$$

Where;

0.537, 0.615, 0.541 and 0.593

Y = performance of procurement function

0.060 = constant of regression or the Y intercept

.537, 0.615, 0.541 and 0.593, respectively are the slope of regression model in regards to supply chain practices constructs; supply chain personnel competency, inventory management, tendering process and information sharing. The model determined that each variable was significant since it had a positive association with the performance of procurement function and its significance values were all less than 0.05. The findings from for the four variables evidenced that there is a strong statistical relationship between the independent variables (Information sharing, inventory management, tendering process and supply chain personnel) and the independent variable (Procurement performance). The implication of the findings reinforces the value of investing in Information sharing, inventory management, tendering process and supply chain personnel to improve procurement function performance in public schools in Tharaka Nithi County. Thus, Wanja & Achuora, 2020 confirms that an effective management of the procurement function and better supply chain management practices can be a precursor to the procurement performance and achieving the firms' intended objectives in both the public and the private sector

4.12 Summary of Hypothesis Testing Results

Using Chi-square and binary regression analysis, the study's hypotheses were examined and the findings were presented in tables. At the 5% significance level, the hypotheses were evaluated and either accepted or rejected.

Table 31: Summary of Hypothesis Testing Results

	Null Hypothesis	Results	Reject/ Uphold
H ₀₁	Tharaka Nithi County public secondary schools' procurement function performance is unaffected by information sharing.	P<0.05	Rejected
H ₀₂	Public secondary schools in Tharaka Nithi County are not significantly impacted by inventory management in terms of their procurement function performance.	P<0.05	Rejected
H ₀₃	Tharaka Nithi County's public secondary schools' procurement function performance is unaffected by the tendering procedure.	P<0.05	Rejected
H ₀₄	There is no statistically significant relationship between the procurement function performance of public secondary schools in Tharaka Nithi County and the competence of supply chain professionals.	P<0.05	Rejected
H ₀₅	There is no statistically significant relationship between public secondary schools' procurement effectiveness and their supply chain management methods; however, there is no statistically significant moderating effect of information and communication technology integration into this connection.	P<0.05	Rejected

Source: Research Data, (2024)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Results

This section provides a summary of the findings of the research objectives, which were; to establish the effect of information sharing, inventory management, supply chain personnel competency on procurement function performance in County Public Secondary Schools in Tharaka Nithi County and to examine the moderating effect of ICT integration on the relationship between supply chain management practices and procurement function performance of County Public secondary schools in Tharaka Nithi County. The findings for each study objective are summarized in the following subsections.

The results of the first objective which was to determine the effect of information sharing on the performance of procurement function in Public Secondary Schools in Tharaka Nithi County, showed a positive and significant association between information sharing and performance of procurement functions. Moreover, the study found that information sharing can account for differences in performance of procurement functions as the coefficients obtained by the results evaluating the relationship between information sharing and the performance of procurement function, implied there was a statistically significant relationship between the variables.

The second objective was to determine how performance of procurement function is related to inventory management. The statistical relationship between effective inventory management and productive procurement was substantial. As a result, the null hypothesis was rejected. Public secondary schools that have used inventory management have a higher chance of achieving procurement performance compared to those that have not.

The third objective was to find out how the public secondary schools in Tharaka Nithi County fared in their procurement functions as a result of the tendering procedure in place in the respective schools. The results showed that the tendering procedure was significantly related to procurement performance statistically. Consequently, the null

hypothesis was rejected. Moreover, the study found that tendering procedure can account for differences in performance of procurement functions as the coefficients obtained by the results evaluating the relationship between tendering procedure and the performance of procurement functions, implied there was a statistically significant relationship between the variables.

The fourth objective was to determine how supply chain staff competence affected the performance of procurement function in Tharaka Nithi County's public secondary schools. The results showed that procurement success was significantly related to supply chain personnel competency. Consequently, the null hypothesis was rejected. Public secondary schools that have employed supply chain professionals have a higher chance of achieving procurement performance than those without.

The fifth purpose was to investigate how the integration of information and communication technology (ICT) moderated the link between public secondary schools in Tharaka Nithi County's supply chain management practices and performance of procurement function. The values of adjusted R-squared obtained for the model testing the moderating effect improved implying that enhancing the moderator would increase the effect of the predictor on performance of procurement functions. Results also showed that when supply chain practices interacted with the ICT integration, the resultant coefficients were positive and significant therefore implying that enhancing the ICT integration and supply chain management practices would improve performance of procurement functions through timely delivery, less lead times and quality goods.

5.2 Conclusion

According to the results of the first objective, effect of information sharing has a substantial effect on the performance of procurement function in Public Secondary Schools in Tharaka Nithi County. The null hypothesis stated that there is no statistically significant relationship between information sharing and performance of procurement function was thus rejected and the conclusion reached was that information sharing is a reliable predictor of the performance of procurement function. Consequently, organisations that deliberately embrace information sharing are likely

to have a substantial effect on performance of procurement function. Effective communication leads to better alignment of expectations, improved product specifications, and timely responses to market changes.

In light of the second specified objective finding, performance of procurement function and inventory management in Tharaka Nithi County Public secondary schools are statistically significantly correlated. Consequently, the second null hypothesis stated that inventory management had no statistically significant effect on performance of procurement functions was therefore rejected and the conclusion was that performance of procurement function is well predicted by inventory management. As such the conclusion was that public institutions that aim to enhance their performance of procurement function; timely delivery, less lead times and quality goods should leverage on proper inventory management. Proper inventory practices ensure that organizations can respond promptly to customer demands without overstocking or facing shortages. This balance not only reduces holding costs but also enhances cash flow management, allowing for more strategic procurement decisions.

According to the third objective findings, there was a significant statistical relationship between tendering process and procurement function performance. As a direct result the null hypothesis was rejected. A well-managed tendering process ensures transparency and fairness, allowing organizations to select suppliers based on merit rather than personal relationships or biases. This competitive environment encourages suppliers to offer their best prices and services, ultimately leading to improved procurement outcomes. Therefore, public institutions that do not properly manage their tendering process are likely to have diminished performance of procurement functions.

The results of the fourth objective showed that there was a significant statistical relationship between supply chain personnel competence and procurement performance. The conclusion reached was that the competence of supply chain personnel is vital for effective procurement performance. Skilled professionals bring expertise in negotiation, supplier relationship management, and strategic decision-making. Their ability to analyze data and market trends allows organizations to make

informed purchasing decisions that align with business objectives. Furthermore, competent supply chain personnel facilitate better collaboration with suppliers, enhancing trust and communication within the supply chain, the null hypothesis was therefore rejected.

The results of the fourth objective showed that moderating variable (ICT integration), supply chain practices and performance of procurement functions are positively and significantly correlated. As such, the null hypothesis stated that there is no statistically significant moderating effect of the ICT integration on the relationship between supply chain practices and performance of procurement functions was rejected and a conclusion was drawn that the ICT integration has a significant moderating effect on the relationship between supply chain practices and performance of procurement functions. This indicated that ICT integration was a key factor in procurement performance thus the null hypothesis was therefore rejected.

5.3 Recommendations

The study provides the following recommendations that can be utilized in light of the research findings and conclusions:

- i. The study advises public secondary schools and policy makers in Kenya to improve and strengthen continuous information sharing with all stakeholders in order to improve performance of procurement functions.
- ii. Public institutions should leverage on instituting planning and policy on deliberate inventory management through just in time, demand management and ABC analyses. Once these policies are put in place, they must be strictly followed, and anyone found to have gone outside of the established procedures should be held accountable as this would ensure procurement performance gains among the public institutions. Continuous improvement in inventory management within the public schools was recommended to improve procurement performance.
- iii. If there is no tendering process users and procurement officers are less likely to achieve procurement performance when compared to public secondary schools that have implemented tendering process. Therefore, it was recommended that all procurement managers ought to ensure that the

stages of tendering process are followed in public secondary schools. Additionally, using e-procurement would greatly improve the procurement process thus improving procurement performance.

- iv. The research suggests that public institutions should launch drives including training drives and engaging them on regular and seasoned training courses to ensure their staff acquire the right competencies and diverse experiences. As a result; procurement performance in their institutions will increase. If there is no competent supply chain personnel users and procurement officers are less likely to achieve procurement performance when compared to public secondary schools that have implemented supply chain personnel.
- v. From the findings, there was a significant statistical relationship between the moderating variable (ICT integration) and procurement performance. This indicated that ICT integration was a key factor in procurement function performance. If there is no ICT integration practiced users and procurement officers are less likely to achieve procurement performance when compared to public secondary schools that have implemented ICT integration. The use of e-procurement in public secondary schools was recommended as it would greatly improve the procurement processes thus improving procurement performance. Procurement stakeholders ought to invest more on procurement software that will enhance procurement process.

5.4 Suggestion for Further Research

- i. This study focused on county public secondary schools in Tharaka Nithi County, therefore further studies should examine how supply chain management practices can affect other sectors.
- ii. The researcher focused on information sharing, inventory management, tendering process and supply chain personnel competence whereas there are other aspects of supply chain management practices such as procurement planning can be considered.

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Appendix I: Letter of Transmittal

Morris Mwenda Mbae

P.O Box 3147,
Chuka.

The Principal/BOM Secretary,
County Secondary School.
P.O. Box
Tharaka Nithi.

Dear Sir/Madam,

RE: REQUEST TO CARRY OUT RESEARCH WITHIN THE ORGANIZATION

I am a postgraduate student of Chuka University- Student No. **CM16/ 28948/16** and currently taking a Master of science in procurement and logistics management. I am doing a research on **The Effect of Supply Chain Management Practices on Procurement Function Performance of County Public Secondary Schools in Tharaka Nithi County Kenya**. The assessment results may be made public when the study is completed so that future researchers and other pertinent stakeholders may use them as a reference in their work. This research is limited to the area and is only being done for academic purposes.

Every precaution was taken during the data gathering process to guarantee that it complied with ethical guidelines.

.

Thank you in advance for your cooperation.

Yours faithfully;

Mwenda Morris Mbae

Appendix II: Research Questionnaire

This study aims to evaluate how supply chain management practices affect county public secondary schools in Tharaka Nithi County's procurement function

performance. Please, to the best of your knowledge, complete the questions below. Do not include your name. The information was processed with the strictest confidentiality and will only be used for the intended purpose.

Part A: General Information

Please tick (√) the appropriate answers.

1. What is your Gender?
 - Male
 - Female
2. What position do you hold in your department?
 - User
 - Procurement officer
 - Accounts Clerk/Bursar
3. What is your age bracket?
 - Below 25 years
 - 25-30 years
 - Above 30 years
4. How long have you served in your school?
 - Below 1 year
 - 1-5 years
 - 5-10 years
 - 10-15 years
 - Over 15 years
5. Kindly indicate the highest level of education?
 - Diploma
 - Undergraduate
 - Masters
 - Ph.D

Part B: Information Sharing

6. Indicate if you agree with the following assertions about the impact of information sharing on procurement function performance in public secondary schools on a scale of 1 to 5, where 1 represents strongly disagree, 2 represents disagree, 3 represents no opinion, 4 represents agree, and 5 represents strongly agree. Please check the box next to the category that best describes how your organization shares information.

Information Sharing	1	2	3	4	5
There is flow of information among user department					
We disclose truthful information to our customers					
Responding to suppliers needs improve credibility in supply chain					
We request our suppliers for information on products required					
There is continuous sharing of information with stakeholders					

Useful information is disseminated among the procurement staff					
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Part C: Inventory Management

6. On a scale of 1-5 where; 1-strongly disagree, 2-Disagree, 3- No opinion, 4-Agree, 5- strongly agree, indicate whether you agree with the following statements on the effect of inventory management on procurement function performance in county public secondary schools. Please tick what the category applicable to your institution’s way of operations with respect to inventory management.

Inventory Management	1	2	3	4	5
The use of bin cards provides better control of inventory in the school					
The school has a material requirement panning system in place					
Material requirement panning as a system helped the school to effectively schedule inventories.					
There is reduction of the lead-time due to the adoption of Just-In-Time practices					
There is continuous improvement in inventory management within the firm					
The school uses ABC analysis to facilitate shorter lead times for inventory					

Part D: Tendering Process

7. On a scale of 1-5 where; 1-strongly disagree, 2-Disagree, 3- No opinion, 4-Agree, 5- strongly agree, indicate whether you agree with the following statements on the effect of tendering process on procurement function performance in county public secondary schools.

Tendering Process	1	2	3	4	5
Procurement officers’ conduct evaluation of qualifications of suppliers					
Procurement officers award tenders to suppliers several times in a year					
Request for proposal is done on timely basis.					
The most competitive bidders are always awarded the tender					
All the stages of tendering process are followed in an organization					
e-procurement system is used during the tendering process					

Part E: Supply Chain Personnel Competency

8. On a scale of 1-5 where; 1-strongly disagree, 2-Disagree, 3- No opinion, 4-Agree, 5- strongly agree, indicate whether you agree with the following

statements on the effect of supply chain personnel competency on procurement function performance in public secondary schools.

Supply Chain Personnel Competency	1	2	3	4	5
The supply chain personnel have knowledge and skills necessary for effective supply chain management					
We always assure the suppliers and manufacturers that needed resources was available at the right time and place					
Our staff have the ability to work effectively with customers to clarify requirements and negotiate solutions when constraints exist.					
In our school, we guarantee material availability, that is, we procure or produce the required quantities on time both for internal purposes and for sales and distribution.					
The procurement officers constantly undergone off-job training on procurement related matters					
We have staff with high analytical techniques, excel spreadsheets and may software to generate baseline statistical forecasts					

Part D: Moderating Effect of ICT Integration

On a scale of 1-5 where; 1-strongly disagree, 2-Disagree, 3- No opinion, 4-Agree, 5-strongly agree, indicate whether you agree with the following statements on the moderating effect of and ICT integration on the relationship between supply chain management practices on procurement function performance in public secondary schools.

ICT integration	1	2	3	4	5
The head of procurement is computer literate					
Our school evaluates on-time delivery rate and defect rate of the suppliers using Computer software					
The school evaluates rate of responsiveness to inquiries using computer software					
My school evaluates rate of suppliers' efficiency and effectiveness using computer software					
The head of procurement has computer skills					
In our school, Customer satisfaction is evaluated using computer software					

Part E: Procurement Function Performance

9. On a scale of 1-5 where; 1-strongly disagree, 2-Disagree, 3- No opinion, 4-Agree, 5- strongly agree, indicate whether you agree with the following

statements on the procurement function performance in public secondary schools.

Procurement Function Performance	1	2	3	4	5
Transaction costs in the procurement process have reduced significantly					
Goods procured are of good quality					
Time taken to complete goods have significantly reduced due to expected completion timelines					
Less time is taken to deliver goods procured					
Goods or services procured are valued at market rates					
The customers are satisfied with the procured products or services					

Thank you for your participation

Appendix III: List of Public Secondary Schools

1. Chief Mbogori Girls Secondary School
2. Chiakariga Girls Secondary School
3. Chiakariga Boys Secondary School
4. Gaciongo Secondary School
5. Gatunga Secondary School
6. Ibiriga Secondary School
7. Igwanjau Secondary School
8. Ikawa Secondary School
9. Itugururu Secondary School
10. Kajiunduthi High School
11. Kajuki Secondary School
12. Kamwathu Secondary School
13. Kamwimbi Secondary School
14. Kambandi Secondary School
15. Kanjuri Secondary School
16. Kanyuru Sec School
17. Karamugi Secondary School
18. Kathii Mixed Secondary School
19. Kiriani Mixed Secondary School
20. Kieganguru Girls Secondary School
21. Kiamuchii Secondary School
22. Kiamuriuki Secondary School
23. Kiang'ondu Secondary School
24. Kieganguru Girls Secondary School
25. Kiereni Secondary
26. Kiini Secondary School
27. Kimucia Secondary School
28. Kiriani Boys High School
29. Kirege Secondary School
30. Kiurani Secondary School
31. Makanyanga Secondary School
32. Magenka Secondary School
33. Magumoni Girls
34. M.C.K Kiangiri Sec School
35. Mugona Girls Secondary School
36. Muthambi Boys Secondary School
37. Mpukoni Secondary School
38. Nkondi Sec. School
39. Njuri High School
40. Ndagoni Girls Secondary School
41. Ngeru Secondary School
42. Nkondi Sec. School

43. Ntumbara Secondary School
44. Nturiri Boys' Secondary School
45. Ngaita Girls Secondary School
46. Rubate Secondary School
47. St. Augustine Ruguta Secondary School
48. St Ann Girls Secondary School
49. St. Bonventure Mumbuni Secondary School
50. Tharaka Secondary School
51. Thigaa Secondary School
52. Wiru Secondary School

Source: County Education Office, Tharaka Nithi County.2024.

Appendix V: Institutional Introductory Letter



Knowledge is Wealth (*Sapientia divitia est*) Akili ni Mali
OFFICE OF THE DIRECTOR
BOARD OF POSTGRADUATE STUDIES

Telephones: 020-2310512/18
Direct Line: 020-268 7625

postgraduate@chuka.ac.ke

P. O. Box 109-60400, Chuka
Website: www.chuka.ac.ke

REF: CM16/28948/16

14th May, 2024

Director
National Commission for Science Technology and Innovation
Off Waiyaki Way, Upper Kabete
P O Box 30623, 00100
Nairobi.

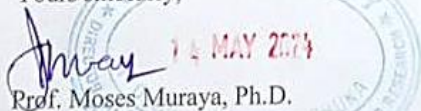
Dear Sir / Madam,

MORRIS MWENDA MBAE

The above-named person is a *bona fide* student of Chuka University pursuing MSC Procurement and Logistics Proposal titled: **Effect of Supply Chain Management Practices on Procurement Performance in Public Secondary Schools in Tharaka Nithi County, Kenya.**

Mr. Mwenda has defended at the Faculty level and is now expected to conduct research. Any assistance accorded will be highly appreciated

Yours sincerely,



Prof. Moses Muraya, Ph.D.

DIRECTOR
BOARD OF POSTGRADUATE STUDIES

Appendix V: Ethics Review Letter

CHUKA



UNIVERSITY

Knowledge is Wealth (*Sapientia divitia est*) Akili ni Mali

CHUKA UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE

Telephones: 020-2310512/18

Direct Line: 0772894438

Email: info@chuka.ac.ke,

P. O. Box 109-60400, Chuka

Website: www.chuka.ac.ke

8th May, 2024

REF: CUIERC/ NACOSTI/519

TO: Morris Mwenda Mbae

RE: Effect of Supply Chain Management Practices on Procurement Performance in Public Secondary Schools in Tharaka Nithi County, Kenya

This is to inform you that *Chuka University IERC* has reviewed and approved your above research proposal. Your application approval number is *NACOSTI/NBC/AC-0812*. The approval period is 8th May, 2024 – 8th May, 2025.

This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by *Chuka University IERC*.
- 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 *Chuka University IERC* within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to *Chuka University IERC* 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 *Chuka University IERC*.

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

Yours sincerely

Dr. Benjamin Kanga
SECRETARY

Appendix VI: NACOSTI License


REPUBLIC OF KENYA
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 806997 **Date of Issue: 28/May/2024**

RESEARCH LICENSE



This is to Certify that Mr.. Morris Mwenda Mbae of Chuka University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Tharaka-Nithi on the topic: EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON PROCUREMENT PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN THARAKA NITHI COUNTY, KENYA for the period ending : 28/May/2025.

License No: NACOSTI/P/24/36135

806997
Applicant Identification Number


Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code


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See overleaf for conditions