

**ETHICAL PROCUREMENT PRACTICES AND PERFORMANCE
OF MEDICAL SUPPLY CHAIN IN KENYA**

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DECLARATION AND APPROVAL

Declaration by the Student:

This research proposal is my original work and has not been presented for a degree in any other university or for any other award.

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Approval by the Supervisor:

I confirm that the work reported in this research proposal was carried out by the candidate under my supervision.

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ABSTRACT

Public procurement holds a crucial role within the government, serving as a mechanism to acquire goods, services, and works. Its primary purpose is to improve the efficiency of service delivery to the citizens. However, the procurement process is susceptible to risks that could lead to the misappropriation of public funds if proper ethical procurement practices are not adhered to. The background of this study elaborates on ethical procurement practices, supply chain performance, and a general overview of the Kenyan medical sector. The study sought to examine the effect of ethical procurement practices on the performance of the medical supply chain in Kenya. The study of the medical sector is justified since it is perceived to be highly susceptible to corruption and unethical practices. The following goals served as the study's compass: to establish the effect of transparent procurement practices on the performance of the medical supply chain in Kenya, to evaluate the impact of accountability practices in procurement on the performance of the medical supply chain in Kenya; to determine the impact of integrity procurement practices on the performance of the medical supply chain in Kenya and to assess how professional procurement practices, affect the performance of the medical supply chain in Kenya. The theoretical frameworks of public value, deontology, and utilitarianism guided this research. To accomplish this, a comprehensive review of empirical and theoretical literature was conducted. To fill in known gaps in the literature and respond to research questions, the study used a design that is descriptive in nature. A stratified random sampling method was employed to sample data. A sample size of 100 supply chain management officers spanning from senior to support cadres was used most of whom with work experience of between 6-10 years. Questionnaires were used to gather first-hand information, which were subsequently assessed using inference and descriptive statistics and shown in the form of graphical representations and tables. The relationship between variables was assessed using correlation coefficients and multilinear regression equations. To determine the reliability and validity of the study instrument, a trial run was conducted. Drop-and-pick questionnaire administration were used, and meticulous precision and comprehensiveness checks were done on all data obtained. Subsequently, the information was coded and analyzed using SPSS version 20.0. Results indicate that accountability ($\beta = .557, p < 0.001$) and professional procurement practices ($\beta = .405, p < 0.001$) have a positive and significant effect on performance while transparent procurement practices ($\beta = .009, p > 0.001$) and professional procurement practices ($\beta = -.015, p < 0.001$) do not significantly influence performance of the medical supply chain in Kenya. It is thus concluded that accountability and professional procurement practices are key drivers of performance of the medical supply chain in Kenya, while transparent and integrity procurement practices do not significantly influence performance in the context of this study.

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LIST OF ABBREVIATIONS AND ACRONYMS

PPADA 2015	Public Procurement and Asset Disposal Act 2015
KISM	Kenya Institute of Supplies Management
WTO	World Trade Organization
GPO	Agreement on Government Procurement
PPRA	Public Procurement Regulatory Authority
USD	United States Dollar
PIC	Public Investments Committee
SCOR	Supply Chain Operations Reference
SPSS	Statistical Package for Social Sciences
NPPADP	National Public Procurement and Asset Disposal Policy 2020
USAID	United States Agency for International Development
NSCMPF	National Supply Chain Management Professional Framework
NACOSTI	National Commission for Science, Technology and Innovation
FBOs	Faith-Based Organizations
NGOs	Non-Governmental Organizations
EHRs	Electronic health records
ANOVA	Analysis of Variance

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The concept of ethical procurement encompasses a complex web of practices, principles, codes of conduct, and standards within a supply chain. These practices include fair and competitive bidding, supplier selection criteria, anti-corruption measures, and ethical decision-making by procurement professionals (Brown & Santos, 2022). Particularly in the medical supply chain, ethical procurement holds paramount importance as it directly impacts the quality, accessibility, and integrity of healthcare services, making it a matter of life and death for many (Roberts & Evans, 2022). Ensuring that procurement practices adhere to ethical principles such as transparency, integrity, fairness, professionalism, accountability, and anti-corruption measures not only safeguards public health but also upholds the trust of the community in the healthcare system (Lopez, 2021). Understanding the application and effectiveness of these concepts in the Kenyan medical supply chain is thus crucial for improving the quality and accessibility of healthcare services to the population.

Theoretically, the association between the performance of the supply chain and ethical procurement practices is firmly rooted in several ethical theories, each providing a unique perspective on the significance of this relationship. Extant literature particularly anchors this relationship on three key theories, including the Public Value Theory (Moore, 1995), Utilitarianism Ethical Theory (Bentham, 2009), and Deontology Ethical Theory (Kant, 1964). Public Value Theory points to the importance of government and public organizations in delivering value to society, emphasizing that ethical procurement practices not only enhance supply chain efficiency but also contribute to the overarching goal of providing public goods and services that improve the well-being of citizens (Moore, 1995). Utilitarianism Ethical Theory,

which focuses on maximizing overall happiness and utility, aligns with the study by highlighting that ethical procurement practices can optimize resource allocation, reduce waste, and ultimately lead to the greatest good for the greatest number, benefiting both healthcare providers and patients (Bentham, 2009). Deontology Ethical Theory, on the other hand, emphasizes the moral duty and principles governing ethical decision-making (Kant, 1964). By integrating these ethical theories, the study provides a comprehensive and nuanced understanding of how ethical procurement practices can enhance supply chain performance while aligning with principles of public value, utility, and moral duty, ultimately contributing to the betterment of healthcare systems and the well-being of society as a whole.

Historically, the association between the performance of the supply chain and ethical procurement practices in the medical sector is marked by a series of pivotal moments and lessons that point to the importance of this study. Over the years, healthcare systems have been plagued by procurement scandals, corruption, and inefficiencies, which have had severe consequences on public health in various international contexts. In the United States, incidents like the 2012 fungal meningitis outbreak linked to contaminated compounded medications exposed the risks of lax procurement oversight, leading to tragic consequences (Brown & Santos, 2022). In the United Kingdom, the PIP breast implant scandal in 2010 exposed the perils of inadequate supplier scrutiny and highlighted the need for ethical procurement practices to protect public health (Harrison, 2019). In Sub-Saharan Africa, Nigeria has witnessed procurement irregularities leading to drug shortages and compromised healthcare services, exemplified by the 2018 nationwide medicine scarcity (Adeleke, 2023). In Ghana, the 2017 "rotting food for patients" scandal revealed the dire consequences of supply chain inefficiencies on patient care (Mensah, 2019). South Africa's history is marked by incidents like the 2007 antiretroviral drug

procurement controversy, underscoring the importance of ethical procurement in securing access to life-saving medications (Merwe, 2021).

Kenya's healthcare system has a history marred by inefficiencies, corruption, and a lack of transparency in its procurement processes. The 2016 "Afya House Scandal" for instance revolved around allegations of corruption and mismanagement within the Ministry of Health, with accusations of inflated medical supply prices and embezzlement of funds. The scandal revealed glaring issues with procurement processes in the healthcare sector, underscoring the need for ethical procurement practices to ensure transparency and accountability (Malalo, 2020). Similarly, the 2020 COVID-19 Medical Supplies Scandal, dubbed "COVID Millionaires" involved allegations of corruption and fraud related to the procurement of medical supplies, including personal protective equipment (PPE) and ventilators. This incident highlighted the need for ethical practices in emergency procurement and crisis response to ensure equitable access to critical medical resources (Oketch & Ngugi, 2022). Further, the 2021 Kenya Medical Supplies Authority (KEMSA) Scandal involved accusations of mismanagement, corruption, and inflated pricing in the procurement of COVID-19 supplies, including PPE and testing kits (Oketch, 2023). The incident cast a shadow over the integrity of the medical supply chain, further emphasizing the importance of ethical procurement practices in safeguarding public health. The foregoing history points to the urgency of investigating the role of ethics in procurement within the medical supply chain to rectify past shortcomings.

1.1.1 Ethical Procurement Practices

Procurement is the process of acquiring goods, services, resources, or works through contractual agreements. It is a comprehensive process that covers a wide range of items, including livestock

and various combinations, and extends to advisory services, planning, and overall supply chain management (PPADA, 2015). The National Public Procurement and Asset Disposal Policy (2020) states that every public institution must uphold high moral standards in managing resources delegated to it as a publicly funded entity. Ethical practices in public procurement are built on values such as public trust, common good, equity, neutrality, clarity, responsibility, expertise, and ethical principles. Effective governance requires a corruption-free public procurement system. Public officers involved in procurement must maintain high levels of integrity while fulfilling their duties proficiently and ethically.

Fairness must prevail in tendering opportunities, and tender documents should be unbiased. Procurement professionals should remain neutral and objective. They should adhere to professional ethical guidelines, and procuring entities should promote professional conduct and continuous professional development. Transparency and accountability are key ethical procurement practices that professionals and public entities must strive to promote. The procurement process should be transparent, equitable, consistent, and responsible to achieve cost-effectiveness.

The procurement and asset disposal process should be efficient and timely. Weak governance in public procurement and asset disposal systems hampers ethical procurement practices, resulting in increased procurement costs. Therefore, procurement professionals must strictly adhere to ethical norms (NPPADP, 2020). According to Baraka (2019), ethical procurement practices are intentionally designed to improve the accessibility and quality of procured goods, services, and works. These practices achieve these goals by promoting accountability, competition, and corruption prevention. The National Ethics and Corruption Survey (2017) found that 67 percent

of participants were aware of ethical standards in the public sector and that 57 percent of those participants had also seen violations. This knowledge of infractions and their frequency emphasizes how crucial it is to address ethical behaviour in government.

The significant government expenditure, which accounts for more than 30% in most developing countries, makes public procurement susceptible to corruption. However, in Kenya, public procurement has undergone various reforms aimed at improving efficiency, transparency, and accountability. Corruption remains a challenge despite these reforms, negatively impacting economic development and public trust (KISM, 2023). Public procurements are governed by the Agreement on Government Procurement (GPO), a plurilateral international treaty established in 1981 under the World Trade Organization (WTO). This agreement sets out regulations that member governments must adhere to in their procurement processes, with the overarching goals of promoting transparency, and non-discrimination in these processes. (Nzai, 2023).

According to Article 227 of the Kenyan Constitution, state organs and other public entities that engage in contracting for goods or services are mandated to conduct such contracts in a manner that is fair, equitable, transparent, competitive, and cost-effective. This constitutional provision emphasizes the importance of ensuring fairness, transparency, and efficiency in public procurement processes within Kenya. Indeed, these principles form the cornerstone of moral procurement practices and ought to direct effective public procurement initiatives with the ultimate goal of maximizing value for money.

According to the Kenyan Healthcare Public Policy and Research, procurement is essential to ensure timely access to high-quality medical care at affordable costs. The public procurement cycle, as stipulated in the provisions of the Public Procurement and Asset Disposal Act 2015,

encompasses various stages, including need identification, procurement planning, specification preparation, tender document creation, invitation to tender, bid submission, tender opening, tender evaluation, professional opinion, notification of the tender outcome, contract preparation, contract signing, and contract management. Each of these stages is essential for the efficient and ethical procurement of medical-related goods and services.

1.1.2 Supply Chain Performance

The overall control of the flow of commodities, services, financial resources, and information is covered by supply chain management, a strategic process that also nurtures and monitors relationships both within and across enterprises. The ultimate aim of this process is to maximize economic value, (NSCMPF, 2021). The core of healthcare delivery relies on supply chain management to ensure timely access to quality healthcare services. Supply chains handle a wide range of items and face challenges related to storage and distribution, which are crucial for providing high-quality patient service (Karen Moons, 2019).

The main challenge for supply chain managers lies in ensuring that healthcare facilities are adequately prepared to deliver products at the correct price, in the right place, at the right time, and in the correct shape, all with the ultimate goal of achieving optimal outcomes. (Scheneller, 2023). In Kenya, there are regular concerns regarding the non-pharmaceutical and pharmaceutical supplies that are lacking in state hospitals. These problems are commonly associated with the challenges within Kenya Medical Supplies Agency (KEMSA), the public organization responsible for procuring, warehousing, distributing, and managing the supply chain for medical products. Reforms in the medical supply chain are necessary to address performance concerns and ensure sufficiency and integration in the supply chain.

Efforts have been made by the Government through projects like the Kenya Health Sector Support Project (HSSP) to address the availability of essential health commodities and strengthen supply chain management (Kanda & Iravo, 2015). Improving supply chain efficiency and effectiveness requires a multifaceted approach that addresses the diverse needs of customers. While overall supply chain performance may share similarities, each component within the supply chain may have distinct performance objectives (Kanda & Iravo, 2015). A high-performing medical supply chain can lead to improved safety, quality of patient service, and greater efficiency. To improve supply chain processes, performance must be measured to identify and address deficiencies (Karen Moons, 2019).

1.1.3 Overview of the Kenyan Medical Sector

The Kenyan government is firmly committed to improving healthcare services, aligning them with a modern healthcare framework based on a comprehensive rights-based approach, a commitment stated in the 2010 Kenyan Constitution. Healthcare delivery is a decentralized function overseen by County Governments, while the national government primarily focuses on policy formulation and the management of national referral health facilities, (KH CPR, 2023). The Ministry of Health, County Governments, different Agencies, and Healthcare Facilities are important stakeholders in the healthcare industry. Additionally, the private sector, which includes for-profit businesses, non-profit organizations, and faith-based groups, is essential in supporting the efforts of the government to deliver affordable and high-quality healthcare services.

According to the Health Sector Working Group Report (2021), the healthcare delivery system is hierarchically divided into six tiers: community, dispensaries, health centers, primary referral facilities, secondary referral facilities, and tertiary referral facilities. The financing of the

healthcare sector in Kenya relies on a diverse range of sources, including government funding, contributions from private enterprises, household expenditures, financial support from donors (including NGOs and FBOs), and health insurance schemes. Referring to the Economic report (2022), the total amount spent in the healthcare sector from the financial years 2017/2018 to 2021/2022 amounted to KES 955 billion, or around 6% of the national budget.

1.2 Statement of the Problem

Ethical procurement practices aim to prevent actions that compromise public trust by discouraging public employees from pursuing personal gains that conflict with their professional responsibilities. Ethics in business have historically been discussed in theological and religious studies (Gichure, 2015). Ethical procurement practices start with procurement personnel adhering to a comprehensive code of ethics guiding their behaviour and decisions during business transactions (Sengbeh, 2015). The healthcare supply chain faces numerous challenges, including the increasing needs of an aging population, rising expectations from healthcare consumers, and disparities in health status and outcomes among marginalized populations (Schneller, 2023).

By the end of the 1970s, ethical issues like extortion, ludicrous advertising, price fixing, safety of goods, and noxious emissions began to seriously threaten company performance in the United States, (Gichure, 2015). Despite the creation of legislation on public procurement, more than 80% of cases of corruption that are being prosecuted or are being investigated by anti-corruption agencies are procurement-related, (Nzai, 2023).

The Kenyan healthcare system is highlighted in the Global Corruption Report (2011) as having problems with conflict of interest, a lack of accountability systems, openness, and

professionalism that lead to the misuse and misappropriation of monies intended to treat illness. Kenya's medical supply chain is particularly highlighted with a series of high-profile scandals and issues that have incurred staggering financial costs and have had a profound impact on the healthcare system and the public. Specifically, the Kshs5 billion in the 2016 "Afya House Scandal" (Malalo, 2020); the Kshs47.7 billion in the 2017 Medical Equipment Leasing scandal (Ambani, 2023); the Kshs7.8 billion in the 2020 COVID-19 medical supplies controversy (Office of the Auditor General, 2020); and the 2021 KEMSA scandal, where Kshs19 billion remains unaccounted for (Oketch & Ngugi, 2022), collectively amount to a massive financial loss of approximately Kshs79.5 billion. Further, Previous EACC reports paint a picture of a health sector plagued by widespread misconduct. According to the 2016 EACC National Ethics and Corruption Survey (NECS), the Ministry of Health (MoH) was found to be the second most bribery-prone ministry (33%). Similarly, the top spot for most corrupt service was awarded to county health services (37.4%). According to NECS 2017 (27.8%) and NECS 2018 (17.9%), county health services were the second most corruptible category. Furthermore, county health departments were identified as the most corrupt entities in NECS 2017 and 2018, placing them second (15.2%) and first (12.1%), respectively.

The foregoing financial losses represent a significant drain on resources that could have been allocated to improving healthcare infrastructure, providing essential medical supplies, and enhancing healthcare services. The misappropriation and inefficiencies resulting from these scandals not only have financial repercussions but also undermine the capacity of the healthcare system to serve the public, emphasizing the dire need for ethical procurement practices to prevent such losses and ensure the integrity of the medical supply chain. It is however important to note that the extent of ethical conduct in procurement about performance of the medical

supply chain in Kenya is not well documented. It is against this background that the current research sought to fill by answering the question: what is the effect of ethical procurement practices and the performance of the medical supply chain in Kenya?

1.3 Purpose of the study

To examine the effect of ethical procurement practices on the performance of medical supply chain in Kenya.

1.4 Objectives of the Study

1. To establish the effect of transparent procurement practices on the performance of the medical supply chain in Kenya.
2. To evaluate the impact of accountability practices in procurement on the performance of the medical supply chain in Kenya.
3. To determine the impact of integrity procurement practices on the performance of the medical supply chain in Kenya.
4. To assess how professional procurement practices, affect the performance of the medical supply chain in Kenya.

1.5 Research Questions

1. What effect do transparent procurement practices have on the performance of the medical supply chain in Kenya?
2. To what degree do accountability practices in procurement affect the performance of the medical supply chain in Kenya?
3. To what degree do integrity procurement practices affect the performance of the medical supply chain in Kenya?

4. What is the contribution of procurement professionalism on the performance of the medical supply chain in Kenya?

1.6 Significance of the Study

Successful research on ethical procurement practices and the performance of the medical supply chain in Kenya will have a substantial effect on theory, policy formulation, and practical application.

1.6.1 Healthcare sector

The study's outcomes will have the potential to enhance the efficiency and effectiveness of Kenya's medical supply chain, ultimately resulting in improved access to high-quality healthcare for the Kenyan population.

1.6.2 Government

The study's conclusions will help the authorities to create laws governing the healthcare industry that are more effective, potentially lowering corruption and increasing transparency in the procurement process.

1.6.3 Non-governmental organizations (NGOs)

Conclusions that will be drawn from this study will aid NGOs in their efforts to promote better purchasing procedures in the healthcare industry. This will ensure that Kenyans have affordable access to necessary medical supplies.

1.6.4 Business community

The study's results will aid businesses in cultivating more ethical procurement practices, fostering trust with customers, and enhancing the overall reputation of these enterprises.

1.7 Scope of the Study

The investigation was carried out over 13 semi-autonomous government agencies under the Ministry of Health, with data collection spanning locations in both Nairobi and Eldoret. The study examined the effect of ethical procurement practices on the performance of the medical supply chain in Kenya. The study's goals were as follows: to assess the effect of transparent procurement practices on the performance of the medical supply chain in Kenya, to evaluate the impact of integrity procurement practices on the performance of the medical supply chain in Kenya, to look into the performance of medical supply chain in Kenya about accountable procurement practices and to ascertain how professional procurement practices, affect the performance of medical supply chain in Kenya. The study covered 100 supply chain management officers, including those in senior, middle, and support positions who provided information for this research. The research was conducted over the course period of one year.

1.8 Study limitations

Irrespective of the study's outcomes, it's crucial to acknowledge its inherent limitations. One notable limitation pertains to the possible influence of respondent honesty on the research's validity and reliability. The study placed significant reliance on the genuine and truthful responses provided by the participants through the research instruments, which might potentially introduce bias or error into the data evaluation process. There was a potential risk of response redundancy as some respondents might have felt they were under investigation and may opt not to complete the questionnaires, potentially affecting the response rate. The vast scope of the medical sector in Kenya, comprising numerous entities under the Ministry of Health, presented a significant challenge. Conducting research in such a diverse and expansive field required substantial financial resources to ensure the study's successful execution.

1.9 Delimitations of the Study

It is commendable that the study took proactive measures to address these limitations by ensuring that respondents were not pressured and given ample time and freedom to respond, structuring the data collection instruments in a user-friendly manner, and providing comprehensive information about data usage and protection rights will contribute to a more successful data collection process. Moreover, the adjustment of the research budget to meet the necessary financial requirements demonstrated a commitment to conducting thorough research. These efforts enhanced the overall quality and reliability of the study's findings.

1.10 Assumptions of the Study

The investigation was predicated on the notion that the selected sample of respondents accurately represented the broader population and that they provided honest and truthful responses.

1.11 Operational definition of key terms

Ethics: Moral principles governing or influencing conduct, (Gichure, 2015).

Unethical practice: Not conforming to moral principles, (Lusakova, 2015).

Procurement: The procurement of any kind of works, resources, amenities, or goods, including animals, or any combination of the two, through buying it, leasing, rent, hire buy, license, rental agreement, franchise, or by any other formal means; this includes advice, planning, and processing within the supply chain framework (PPADA, 2015).

Supply Chain Management: It entails the strategic planning and management of operations about the movement of goods, services, and information, beginning with the first raw material stage and continuing through various manufacturing, procurement, distribution, and finally reaching the final consumers. (Stadler, 2014).

Public Procurement: The process of obtaining goods, works, and services by use of public funds, (NPPADP, 2020).

Public entity: Any department, agency, organ, or another unit of the government that uses public money, either in whole or partially, to acquire goods, works, or services is considered a procuring entity, (NPPADP, 2020).

Professional: A person who has acquired the knowledge, skills, and expertise necessary to practice a particular profession. Professionals are often characterized by their commitment to high standards of competence, ethics, and conduct within their respective domains (NPPADP, 2020).

Supplier: A supplier is a business or individual that provides goods, works, or services to a government agency or other public body, (PPADA, 2015).

Transparency: The availability of essential procurement data to civil society, the media, and other interested parties, as well as

how these entities utilize this information, has a direct impact on ensuring accountability in the procurement process, (Marendi, 2014).

Procurement performance:

Procurement performance refers to the evaluation of how effectively and efficiently an organization manages its procurement processes and activities. It involves measuring the outcomes and results of the procurement function, (Moon, 2017).

Accountability:

Refers to the process of one individual or agency being held to answer for their actions or performance, (Barbara, 2018).

Integrity:

Behaving in a way that is considered to be right and good, according to the accepted standards of society, (Huberts, 2018).

Corruption:

Abuse of public office for private benefit (Liu, 2016).

Medical:

Refers to anything related to the field of medicine, which encompasses the science and practice of diagnosing, treating, and preventing diseases and injuries to maintain or restore health.

Stakeholder:

A person, group, organization, or thing that is interested in or worried about a specific project, system, or organization.

Healthcare Systems Integration: Connecting and coordinating different aspects of patient care, including electronic health records (EHRs), medical devices, and healthcare providers.

Value for money: Engagement on the part of the procuring entity that benefits the procuring entity about cost, performance, volume, reliability, and hazard sharing, (PPADA, 2015).

Tendering: Formal process through which organizations, including government agencies, corporations, and non-profit entities, invite bids, proposals, or offers from qualified suppliers, contractors, or service providers to provide goods, services, or perform work.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a summary of a selection of recent studies about the primary concern of the study. It delves into different theories associated with the research issue and conducts a thorough analysis of empirical research carried out by modern scholars. Additionally, the chapter establishes the groundwork for the study's methodology by constructing a conceptual framework that outlines the dependent and independent variables constituting the study's fundamental model. Ultimately, the chapter offers a comprehensive overview of the literature that is pertinent to the research problem at hand.

2.2 Empirical Literature

An empirical review, also known as an empirical study or empirical research, aims to gather and analyze data from the real world to answer research questions or test hypotheses.

2.2.1 Ethical Procurement Practices

Ethics serve as guidelines or rules of conduct that individuals and organizations aspire to uphold. These ethical standards are often formalized through codes of ethics or conduct, (Ndolo, 2014). However, merely having these codes in place is insufficient; they must be complemented by assigning functional responsibilities and ensuring a deep understanding of ethical principles. Ethical procurement practices revolve around principles of conduct governing individuals or groups, emphasizing what is morally right or wrong, (Gichure, 2015). Procurement professionals are particularly exposed to ethical dilemmas and various selling techniques, some of which may lack ethical integrity. Compromising ethics to expedite processes or bypass scrutiny during

audits can harm an organization's reputation and financial well-being. As a result, supply chain managers need to understand ethics since it greatly affects the effectiveness of procurement.

Transparency and visibility in government transactions and operations are critical in uncovering, deterring, and mitigating corruption. Granting citizens, the legal right to access information related to all government activities except those involving national security is essential in the fight against corruption. Financial contributors, financial institutions worldwide, as well as medical organizations should utilize their clout to push for policy changes in African healthcare systems with the ultimate goal of improving healthcare outcomes for all patients, (Makali, 2015). Ethics in procurement significantly shapes public perception and is vital for organizations. Unethical procurement practices can manifest in various ways, including accepting gifts, favouring certain suppliers, conflicts of interest, and breaches of confidentiality. To promote ethical behaviour and shared values among supply chain stakeholders, organizations should implement a procurement code of conduct. Such a code helps reduce malpractices among procurement staff and should be disseminated to foster a culture of integrity (Mastert, 2015).

While individual causes frequently give rise to corruption among public officials, organizational, institutional, and cultural environments also have an impact on ethical behaviour. Corruption is frequently motivated by personal gain, relationships, or opportunities to engage in unethical behaviour without accountability. Implementing an ethics policy has the advantage of setting clear standards, but these policies are sometimes overlooked or ignored. To address this gap, organizations can provide procurement ethics training to individuals involved in purchasing and supplier interactions. Some organizations appoint ethics ambassadors to give workers a secret

way to bring up violations of ethics particularly when dealing with powerful internal stakeholders (Schleper, 2013).

To ensure compliance with ethical standards, every significant procurement process should undergo comprehensive management reviews (Njeri Kagotho, 2016). These reviews confirm adherence to established guidelines and identify any past or potential ethical violations. Periodic audits are also crucial for validating ethical conduct in procurement activities and deterring future unethical behaviours. The Public Procurement and Asset Act 2015 provides detailed and systematic instructions for conducting an open tendering process and outlines all the procurement cycle requirements.

2.2.2 Transparent Procurement Practices

Transparency is the quality or condition of being easily seen through, understood, or detected. In various contexts, transparency refers to openness, clarity, and the degree to which actions, decisions, or processes are easily accessible and understandable to others, especially the public or stakeholders (Kohler, 2020). When openness is a part of sound administration, the institutions that govern are more competent to satisfy the expectations of the people they govern. Being aware of how actions are taken must involve having an understanding of the steps that are taken and the guidelines employed by those who make the decisions. Recognizing the justifications behind actions calls for revealing the information that was employed to arrive at them as well as the arguments made in support and opposition to specific choices. In a decentralized system, easier pricing comparisons between different facilities for the same pharmaceutical are made possible by a greater degree of openness in the pharmaceutical procurement process. This enables healthcare facilities to make more accurate decisions and

can ultimately result in greater buying power when haggling for more affordable rates from vendors.

These actions should ideally assist in reducing price gouging, pricing exploitation, and overcharges. The information is crucial since it may disclose tendencies and any unusual circumstances that may be indicative of payments that are excessive, conspiracy, or scams occurring in the purchasing transaction. In the long run, visibility may be understood to mean a government's decision to make information known to members of the public to ensure everyone can understand how the government makes choices and decisions and hold them responsible. Transparency's significance in the global arena of public acquisition is impossible to overstate. This principle ensures that the public can comprehend how procurement decisions are reached and that these decisions are made in the best interests of the public. Procurement professionals bear the responsibility of justifying all procurement decisions and upholding fairness throughout the bidding process, (NPPADP, 2020).

Transparency within public procurement dictates that all relevant stakeholders should have access to information concerning the procurement process, (Nzai, 2023). This includes providing access to tender documents, outlining the evaluation criteria, and clarifying the decision-making process. Transparency helps to prevent corruption and favouritism from influencing the procurement process. Accountability entails holding those responsible for procurement decisions accountable for their actions, (PPADA, 2015). It necessitates the establishment of clear procedures for monitoring and auditing procurement processes and taking punitive measures against those who violate the rules. Fairness ensures that all bidders are treated equitably throughout the procurement process. It prohibits discrimination against any bidder and mandates

a fair evaluation of all bids, (Siyal, 2020). The government must make sure that public procurement follows the values of openness.

2.2.3 Accountability Practices in Procurement

Accountability is the act of accepting responsibility for one's decisions and deeds. It entails having to explain the outcomes and ramifications of the choices and activities made to a specified oversight organization as well as the general public. As public servants, procurement professionals are held answerable and constrained by a professional standard of practice enforced by KISM. The foundation for maintaining integrity within public procurement systems relies on the existence of effective internal control and audit mechanisms. These mechanisms are critical for upholding the fairness and credibility of the procurement process. Additionally, establishing channels for registering complaints and contesting administrative decisions further reinforces the integrity of the entire process.

To meet the increasing demand for improved accountability in managing public funds, certain governments have implemented direct social control mechanisms. This calls for active interaction with numerous stakeholders, such as businesses, consumers, groups representing civil society, the media, and the public as a whole. By involving these stakeholders, the integrity of procurement practices undergoes thorough scrutiny, promoting transparency and accountability throughout the process. The global awareness of the risk of a lack of accountability and corruption in public procurement points to the need for governments worldwide to implement appropriate systems to ensure accountability (Kohler, 2020).

Maintaining accurate records is a fundamental requirement for accountability and control in any system. These written records, covering various phases of the procurement process, play a crucial role in ensuring transparency. They create an audit trail that facilitates control over procurement decisions. Moreover, these records serve as the official documentation for administrative challenges and offer citizens the opportunity to closely monitor the utilization of public funds as gaps in procurement records can weaken accountability and compromise the integrity of procurement processes, procuring entities must implement procedures to guarantee that procurement decisions are thoroughly documented, thus fostering corruption (Ottou, 2019). To prioritize different components of public procurement, policymakers must decide clearly which audience the purchase mainly benefits. This could include customers in the business sector, the government, the press, or the general population as a whole.

Public procurement has gained increased recognition as a fundamental component of governmental accountability to the public, as it signifies how public funds are administered. Governments have taken measures to strengthen their oversight and accountability mechanisms related to public procurement, to foster a sense of responsibility. However, a significant challenge in upholding accountability lies in the absence of a clear definition concerning the chain of authorization and liability within the public procurement process, especially in decentralized procurement contexts. There is a growing consensus on the need for internal controls and external audits to adopt a risk-based approach, enabling the identification and prevention of fraud during the purchasing process.

Professionals involved in purchasing are subject to sanctions as a means to address any conduct that contradicts the established legal framework and foundational principles of public

procurement. Furthermore, a crucial requirement is the reorientation of public procurement officers to prioritize consistency across procurement procedures. Regulatory bodies responsible for overseeing procurement processes should ensure the comprehensive enforcement of legislative obligations and policies governing public procurement. This multifaceted approach aims to establish a more robust and transparent public procurement landscape, reinforcing governments' accountability to their constituents (Akaninyene, 2015).

2.2.4 Integrity Practices in Procurement

Fidelity in procurement is of paramount importance as it ensures that the procurement process is conducted ethically, transparently, and in a manner that upholds the highest moral standards. Integrity in procurement means that individuals involved in the process are incorruptible. They do not engage in bribery, kickbacks, or any form of corruption that could compromise the fairness and transparency of the procurement process. This involves resisting temptations to favour one supplier over another due to personal gain, (Nathan, 2019).

Procurement practitioners should be reliable and consistent in their decision-making processes. They should adhere to established rules and guidelines consistently, ensuring that no favouritism or bias creeps into the procurement process. This reliability builds trust among stakeholders. Transparency is a cornerstone of integrity in procurement. All procurement decisions, actions, and transactions should be open and easily accessible to relevant stakeholders, including bidders and the public. Transparency help to prevent hidden agendas or unethical practices, (NPPADP, 2020). Every bidder should be treated fairly and equally in the procurement process. There should be no discrimination based on personal relationships, biases, or any other unfair criteria. Fairness ensures that the best-qualified suppliers have an equal opportunity to compete.

Maintaining integrity requires structured and systematic procedures in procurement. Responsibilities should be clearly defined and segregated to prevent conflicts of interest. Procurement officers should follow a well-established process that ensures fairness and impartiality. Public entities have a responsibility to provide equal opportunities for all qualified suppliers to participate in the procurement process. This means that all bidders should have access to the same information and opportunities, eliminating any advantage for a particular supplier.

Procurement professionals should adhere to a code of conduct that outlines ethical behaviour and principles. This code of conduct guides their actions and decisions, helping them to maintain integrity throughout the procurement process. Procurement decisions should be made impartially solely based on the merits of the bids and by established legal frameworks. Personal biases or preferences should not influence procurement outcomes. Keeping accurate records of the procurement process is crucial for accountability and integrity. These records serve as an audit trail and official documentation that can be used to monitor and verify procurement decisions. In some cases, external oversight bodies or agencies play a role in ensuring integrity in procurement. These bodies help to monitor procurement processes, investigate complaints, and hold those who breach ethical standards accountable.

Procurement professionals should receive ethics training to enhance their understanding of ethical principles and practices. This training helps them to recognize and address potential ethical dilemmas. Engaging with stakeholders, including civil society organizations, the media, and the public, can help promote transparency and accountability in procurement. These stakeholders play a vital role in scrutinizing procurement practices, (Cyrus Saul Amemba, 2013).

To guarantee that public money is spent appropriately and that the buying process is open, equitable, and responsible, integrity in procurement practices is crucial. It promotes public trust, fights corruption, and guarantees that purchasing choices are taken with the entity's and the general public's best interests in mind, (Nzai, 2023).

2.2.5 Procurement Professionalism Practices

A supply chain practitioner is an individual registered under Section 16(1) of the Supplies Practitioners Management Act, 2007, possessing expertise acquired through formal education and practical experience, (KISM, 2023). A properly functioning system of buying calls for the organization that purchases goods and services to be filled with personnel with purchasing professionals who have gone through education and have been certified by an appropriate procurement competent body. Professional behaviour is contingent on the personnel, expertise, abilities, and skills of human resources as well as on regulates in the structure that contributes to how individuals act, (Mrope, 2017). These professionals are responsible for upholding the highest standards of professional conduct and continuous professional development.

On the flip side, an absence of competence breeds graft, which hinders the success of procuring organizations and prohibits them from successfully conforming to purchasing regulations and laws. The function of purchasing has evolved beyond mere administrative functions to become a strategic discipline that significantly influences a country's socio-economic progress, (Kiama, 2014). Given the strategic importance of procurement, professionals are expected to have formal education, training, and practical experience. They must maintain high professional standards and adhere to an ethical code of conduct, (Rotich, 2015). These professionals should undergo examination, registration, licensing, and regulation by a competent and recognized regulatory

body. The foremost objective of white-collar standards is to guide and promote professional practice (NSCMPF, 2021).

Procurement standards encompass guidelines, principles, and expectations that define the desired performance levels for procurement professionals. These standards ensure that procurement processes are conducted with ethics, transparency, and efficiency in mind. They provide a framework for decision-making, risk management, and compliance with regulations, covering areas such as supplier selection, contract management, risk assessment, and reporting (Hamid, 2014). Various countries are recognizing the significance of procurement and are integrating e-procurement modules to enhance performance (Kanda & Iravo, 2015). Efficiency, effectiveness, adaptability, cost variation, agreement execution, handling of materials exhalation, the performance of suppliers, sourcing duration, settlement duration, urgent acquisition, price information, and procurement expenses are some key performance indicators (Yadav, 2014).

While the media often highlight inefficiencies and corruption, there are numerous examples of successful procurement practices worldwide. Sharing and promoting these best practices can improve procurement standards and transparency in both public and private sectors (Lung Wu, 2014). Standardizing procurement practices across different levels of government entities offers numerous benefits. Global collaboration among public sector professionals can establish standardized best practices that promote sustainability, equality, and economic development. A strong procurement system, guided by ethical principles and managed by professional practitioners, is crucial for good governance. Efficiency and effectiveness are critical indicators for evaluating supply chain performance, covering costs, inventory management, and asset

turnover. In today's competitive landscape, the focus is on supply chain management, and information sharing and collaboration are essential for performance.

In the healthcare sector, supply chain management coordinates information, resources, and finances to improve clinical outcomes while managing costs. Effective coordination and harmonization of operational procedures in healthcare supply chains can lead to improved performance. Particularly in purchasing, inventory control, and patient record systems, technological interoperability is crucial. Supply chain performance evaluation shapes strategic procurement decisions, including competitive strategies, make-versus-buy choices, and market-based transactions, (NA Medvedeva, 2020).

2.3 Theoretical Literature

Precisely, the theoretical framework creates a robust foundation for the study by providing a structured approach to understanding and addressing the issue under investigation. It also helps to guide the research by providing a set of concepts and theories that can be used to explain the problem, (Dunn, 2019).

2.3.1 Public Value Theory

The theory of public value was indeed developed by Mark Moore in 1995. Moore argued that public value theory goes beyond the traditional view of public management, which sees managers as simply implementing policies and procedures. Instead, public value theory sees managers as active agents who can shape the public good. Public value theory has been influential in shaping discussions and practices in public administration and policy, emphasizing the importance of public organizations going beyond mere efficiency to contribute positively to

society and its well-being. It provides a framework for evaluating and improving the impact of government actions on the public and encourages a more holistic and values-driven approach to governance.

Public value theory also emphasizes the importance of accountability in public sector organizations. Accountability means being answerable to others for one's actions. In the public sector, accountability is often to citizens and their elected representatives. Public value theory indeed offers a valuable framework for understanding the roles and responsibilities of public managers. By creating public value through transparent and responsive actions, public managers contribute to the overall effectiveness and accountability of public sector organizations.

The Public Value Theory is highly relevant to the study of the association between the performance of the supply chain and ethical procurement practices in the medical sector, as it points to the overarching goal of public organizations to deliver value to society. In the context of healthcare, ethical procurement practices that prioritize transparency, professionalism, fairness, accountability, and anti-corruption measures not only enhance supply chain efficiency but also align with the fundamental mission of healthcare systems to improve the well-being of citizens. By adhering to ethical principles, healthcare organizations can optimize resource allocation, reduce waste, and ensure equitable access to high-quality medical supplies, thereby maximizing overall societal well-being. This theory emphasizes that the role of the medical supply chain goes beyond the mere logistics of procurement; it extends to the critical task of delivering essential healthcare services and products, ultimately impacting the health and lives of the public. Therefore, understanding how ethical procurement practices contribute to public

value in healthcare supply chains is not just a matter of operational efficiency but a moral and strategic imperative to fulfill the fundamental mission of public healthcare systems.

2.3.2 Utilitarianism Ethical Theory

The basic premise of utilitarian ethical theories is based on the notion that the rightness or wrongness of an act can be judged by whatever outcomes or ramifications it generates. These viewpoints are often associated with intellectuals notably the late Jeremy Bentham and Sir John Stuart Mill. This point of view is based on the intellectual works of John Stuart Mill, who made clear that upright behaviour is possible only when it advances the "uppermost good about it," or the betterment of all. The notion of what constitutes the "greatest benefit" is controversial on several fronts since there may not be unanimity regarding what it involves. In line with this hypothesis, an action is deemed morally right if it results in the greatest benefit for the largest number of individuals.

Both act utilitarianism and rule utilitarianism possess their respective advantages and drawbacks. Act utilitarianism offers greater flexibility and adaptability to novel situations but may potentially result in morally questionable actions if the consequences are inaccurately predicted. On the other hand, rule utilitarianism provides more predictability and is less likely to lead to ethically questionable actions, yet formulating universally applicable rules that consistently yield the greatest benefit for the majority can be challenging.

Utilitarian ethical theories have faced criticism on several fronts. One critique revolves around the difficulty of accurately forecasting the consequences of an action. Another critique relates to the challenge of comparing diverse types of outcomes, such as tangible and intangible gains.

Lastly, some argue that utilitarianism fails to account for the individual rights of persons. Despite these criticisms, utilitarian ethical theories maintain significant influence in various domains, including business, government, and the legal field.

The Utilitarianism Ethical Theory is highly pertinent to the study of the association between performance of the supply chain and ethical procurement practices in the medical sector, as it aligns with the overarching objective of maximizing overall happiness and utility. Ethical procurement practices that emphasize fairness, transparency, and accountability have the potential to optimize resource allocation, reduce wastage, and enhance the quality and accessibility of healthcare services. By adhering to ethical principles, healthcare organizations can not only improve supply chain performance but also promote the greatest good for the greatest number. The benefits extend to both healthcare providers and patients, as efficient and ethical procurement practices can lead to cost-effective healthcare services and better health outcomes. In a sector where lives are at stake, Utilitarianism points to that the study is not merely about the efficiency of procurement processes but about a moral imperative to ensure the well-being and satisfaction of the widest possible population, making it a crucial ethical lens through which to view the study's subject matter.

2.3.3 Deontology Ethical Theory

Deontological ethical theories are grounded in the concept that certain actions possess inherent moral qualities, irrespective of their consequences. These theories assert that individuals have specific duties or obligations that they are obligated to fulfil, even if doing so requires sacrificing their interests or the interests of others. One prominent deontological theory is Kantian ethics, which centres around the notion of categorical imperatives. Categorical imperatives represent

moral principles that bind all individuals, regardless of their circumstances. For instance, Kant's first categorical imperative states that we should consistently act in a manner that we would wish for our maxim (or guiding principle) to become a universal law. This implies that our actions should align with principles that we'd be willing for everyone to follow at all times.

The core concept of the deontological hypothesis, which puts a great deal of importance on the action itself while ignoring the consequential nature of the result, is further emphasized by Gray and Schein (2012). The vitality of the deontological framework in multiple settings is plausible to argue for. However, talk of consciousness, which of duty, or performing deeds recognizing that you may be in breach of law, is vital in considering the heated debate around the behavior and uprightness of common people. The universality of the actions perpetrated along with certain hallmarks of malicious disdain for procedures and rules may be simultaneously prevalent in reckless breaches of ethics. Virtue ethicists argue that individuals should strive to nurture virtues such as honesty, courage, and compassion. These virtues guide individuals in making sound choices, even when the consequences of those choices are not immediately apparent. Deontological ethical theories are commended for their emphasis on duty and principled conduct. Nevertheless, they have also faced criticism for their perceived inflexibility and for not sufficiently considering the outcomes of our actions.

The Deontology Ethical Theory is profoundly relevant to the study of the association between performance of the supply chain and ethical procurement practices in the medical sector, as it emphasizes the moral duty and principles governing ethical decision-making. In the context of procurement, this theory points to the inherent obligation to act ethically, irrespective of the consequences. Ethical procurement practices, such as transparency, fairness, and honesty, align with these fundamental moral principles and serve as an ethical compass guiding the conduct of

healthcare professionals and organizations involved in procurement processes. Deontology insists on the importance of adhering to these principles not just as a means to achieve efficient supply chain performance but as a moral imperative in the healthcare sector. By embracing Deontological ethics, the study not only explores the practical implications of ethical procurement but also points to the essential ethical duty to ensure the integrity and fairness of the medical supply chain, thereby safeguarding public health and enhancing the ethical foundation of the healthcare system.



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2.4 Conceptual framework

A conceptual framework is a succinct delineation complemented by a graphical or visual illustration that outlines the configuration of diverse elements constituting a particular phenomenon, event, or occurrence, (Mugenda, 2013).

Independent Variable

Dependent variable

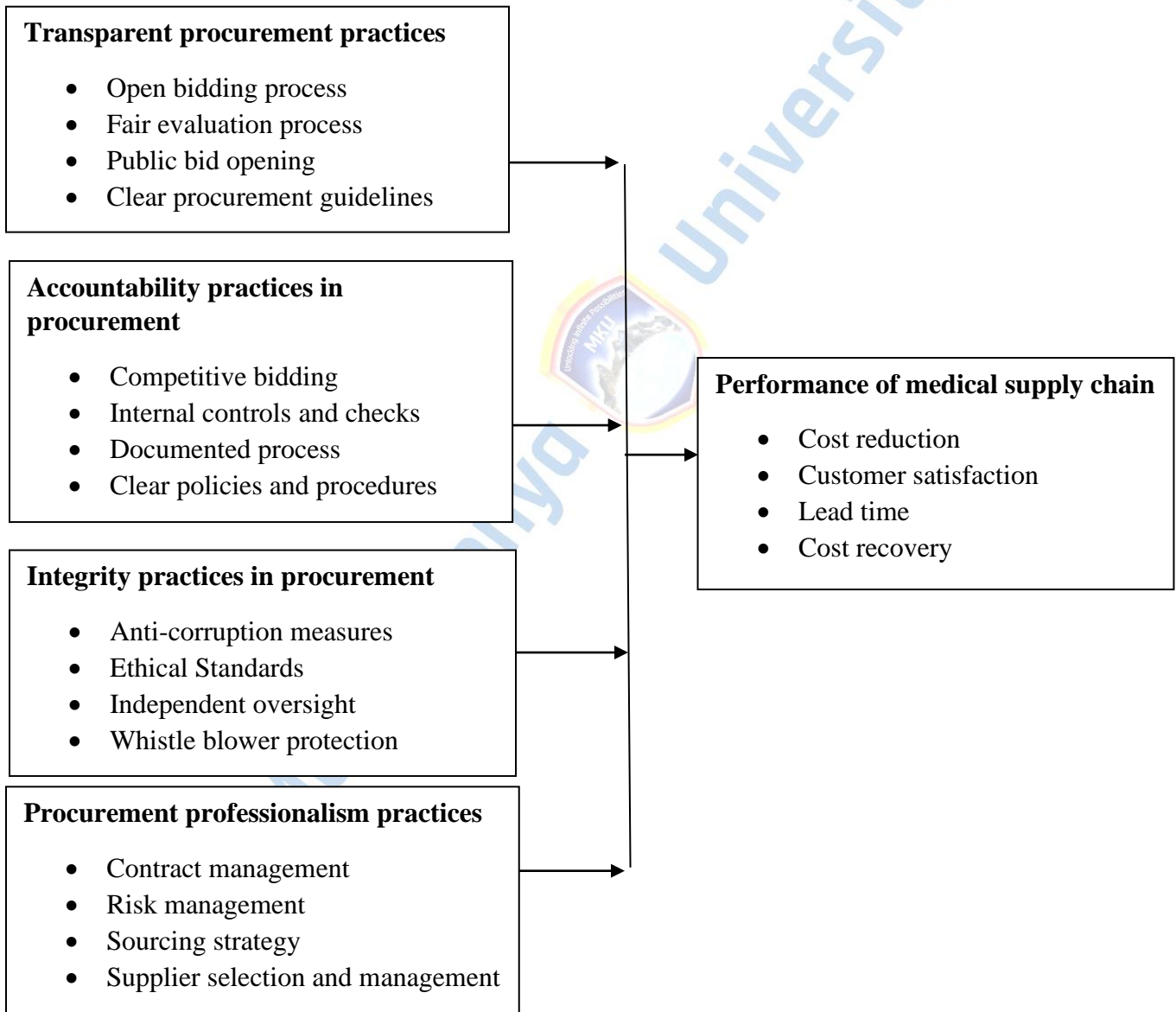


Figure 2.1: Conceptual framework

Source: Researcher (2023)

2.5 Recap of Literature Review

Certainly, fraud represents a notable aspect of corruption within the procurement domain, and this misconduct often finds facilitation in various organizational factors. These include the prevalence of peer culture, the absence of proper due process, susceptibility to temptation, managerial incompetence, and a wilful disregard for ethical standards. Such factors can be observed in different countries, contributing to a nuanced understanding of the varied forms of corruption that may manifest within the procurement process (Graycar, 2019). It is worth noting that discussions about bribery and other unethical practices in procurement have primarily concentrated on empirical aspects, potentially neglecting the essential normative dimension. This oversight means that the emphasis has predominantly been on "how" these behaviours occur rather than delving into the deeper "why" behind them (Chavan, 2021).

The ethical nature of practices like bribery is not solely determined by whether their advantages outweigh the associated costs, including damage to trust and reputation. Arguments can be constructed both in favor of and against such practices. Tailoring performance metrics to suit the needs and preferences of different audiences within organizations can enhance communication, understanding, and alignment across various levels and functions. Conversely, an alternative perspective argues that performance measurement should encompass four distinct dimensions: customer satisfaction, internal business processes, innovation, and learning.

Ethical procurement practices are founded on principles that dictate acceptable behaviour, guided by considerations of morality, rightness, wrongness, goodness, and badness. Procurement professionals frequently encounter situations that challenge these ethical principles. They may confront various selling techniques, some of which might compromise ethical standards in

exchange for expediting processes or evading scrutiny during audits. Such compromises can have detrimental effects on both reputations and profits, (Hoque, 2014).

Efficient supply chain performance plays a pivotal role in shaping the strategic evaluation of procurement decisions. This encompasses key factors such as devising competitive strategies, determining whether to insource or outsource and choosing between market-driven or relationship-based exchange approaches. These decisions significantly influence the nature of buyer-seller relationships within procurement. Collaborative efforts between buyers and suppliers are increasingly vital in this landscape, aimed at fostering enduring and robust relationships. Public procurement is mandated to adhere to core principles, including openness, fairness, consistency, transparency, and accountability, all to obtain worth for the funds, (Sillanpaa, 2015). It is essential to use public resources responsibly and to do so in a way that is successful, productive, and responsive.

The Kenyan Constitution, under Article 227, points to the importance of transparent and accountable procurement practices by procuring entities. Transparency ensures that procurement processes are appropriate and compliant with legal requirements, with fundamental elements encompassing policy, legislative obligations, information, and disclosure, (Ortega, 2020). Accountability transcends mere legal and regulatory requirements; it represents a moral and ethical imperative in public procurement. Upholding accountability not only safeguards public trust but also contributes to the effective and ethical utilization of public resources for societal betterment. As employees of the government, procurement specialists are expected to uphold an official code of behaviour enforced by the Kenya Institute of Supplies Management.

In light of the strategic role played by the procurement function, procurement professionals are expected at the very minimum to have formal education, training, and experience gained through practical work. They are also expected to maintain high professional standards and be guided in their practice by an ethical code of conduct. The professionals are expected to be examined, registered, licensed, and regulated by a competent and recognized regulatory body, (Sengbeh, 2015). In summary, integrity in procurement serves as both a moral imperative and a practical necessity for maintaining fairness, transparency, and efficiency. It promotes confidence among interested parties, protects the process' honesty, and makes sure that the state's assets are handled appropriately. By upholding principles of integrity, procurement practitioners contribute to the establishment of a robust and ethical procurement environment that benefits society as a whole, (Gordon, 2014)

2.6 Research gap

The literature that will be examined in this study will be aligned with the research problem. Many studies have explored ethical procurement practices in response to this issue. For instance, Sengbeh (2015) investigated the association between performance of the supply chain and ethical procurement practices in Kenya's Energy Sector. His research emphasized on the importance of transparent procurement practices for achieving optimal supply chain performance, however, his study did not address the impact of other variables on supply chain performance.

Similarly, Balonyi (2020) conducted a study on the COVID-19 pandemic and its implications for public service ethics. He highlighted that the pandemic had exposed deficiencies in ethical considerations during emergency procurement. However, his study did not provide a clear analysis of the intersection between procurement processes and ethical practices. To address this

gap in the literature, the current researcher aims to explore how ethical procurement practices affect the performance of the medical supply chain in Kenya.

Methodological gaps in the existing literature on the association between the performance of the supply chain and ethical procurement practices in the medical sector are notable. While some studies have made valuable contributions, there has been a prevalent focus on qualitative research methods, such as interviews and case studies, which provide rich insights but often lack generalizability (Brown & Santos, 2022; Kohler, 2020; Ottou, 2019). The predominance of qualitative research has left a gap in the availability of quantitative data and empirical studies, which could offer a more statistically rigorous examination of the association between the performance of the supply chain and ethical procurement practices. Moreover, many studies (Yadav, 2014; Mrope, 2017; Nathan, 2019) have primarily relied on desktop reviews, analyzing existing data and documents, without direct engagement with key stakeholders and real-time observation of procurement processes. These desk-based approaches may miss out on crucial insights and fail to capture the dynamic nature of ethical dilemmas in procurement. A more balanced methodological approach that includes primary, self-reported data including surveys would offer a more comprehensive understanding of the complex dynamics involved.

Geographical gaps are apparent as most existing literature primarily focuses on developed Western healthcare systems (Nathan, 2019; Kohler, 2020; Siyal, 2020). Limited research delves into the specific challenges faced by healthcare supply chains in low- and middle-income countries, like those in sub-Saharan Africa and Southeast Asia, which encounter unique obstacles tied to infrastructure, governance, and resource constraints. These contexts require tailored

solutions, making it imperative to bridge this geographical gap and explore how ethical procurement practices can be adapted and implemented effectively in diverse healthcare settings.

The theoretical gaps in the existing literature on the association between performance of the supply chain and ethical procurement practices in the medical sector are particularly salient. While some studies (Kohler, 2020; Siyal, 2020; Ottou, 2019) have explored the theoretical underpinnings of ethical procurement, there is a lack of comprehensive and nuanced application of ethical theories. Most research has only scratched the surface in terms of integrating theories like Utilitarianism, Deontology, and Public Value Theory into the framework. There is a need for a more thorough examination of these ethical theories to understand how they can be practically applied to procurement practices in the medical sector.

Contextual gaps are also present, as the existing literature often lacks a comprehensive understanding of the unique challenges and opportunities within specific healthcare systems (Schleper, 2013; Mastert, 2015; Siyal, 2020). Factors such as regulatory frameworks, corruption levels, political influences, and the roles of various stakeholders in different countries' medical supply chains are often overlooked. The contextual dynamics can significantly impact the effectiveness of ethical procurement practices, and a more context-specific approach is needed to address these gaps in the literature. Overall, bridging these methodological, geographical, theoretical, and contextual gaps will lead to a more comprehensive and nuanced understanding of the association between the performance of the supply chain and ethical procurement practices in the medical sector.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The strategy of the investigation, the specific study's populace that was evaluated, and the systematic techniques for gathering data are all provided in detail in this section of the inquiry's material. The sample plan, selecting data gathering techniques, and determining the authenticity and dependability of the investigation tools used are all incorporated. The chapter goes into extensive detail discussing the procedures that were employed for obtaining data, the legality of the study, and the methods to be used for analyzing and interpreting the findings.

3.2 Research Methodology

In this study, the primary data collection approach predominantly involves quantitative and descriptive methods. A questionnaire with a structured format served as the main data collection tool for study respondents, and the drop-and-pick technique were implemented to obtain statistics. The study aimed at a specific subgroup within the defined participant groups, and data will be obtained through a series of pre-planned and organized questions presented to the participants, (D Aitken, 2019). This method is justified due to its flexibility since it enabled the researcher to put into use numerous designs that were relevant in gathering both types of data.

3.3 Research Design

According to D. Aitken (2019), the study may make use of a particular research technique differentiated by a particular data processing strategy. This research sought to examine the effect of ethical procurement practices and the performance of the medical supply chain in Kenya. To explore these independent variables, such as transparency, integrity, accountability, and professionalism in procurement, descriptive research was employed in this case to catch a fleeting glimpse of the current situation, where the researcher has no control over the factors

being looked at. According to Kothari (2019), descriptive research is frequently used to represent traits within a community, identify cause-and-effect links among various components, and form conclusions regarding potential relationships.

3.4 Location of the study

The study happened in the county of Nairobi, which is home to all twelve (12) of the Ministry of Health's semi-autonomous government entities. The geographic scope of the analysis also included Eldoret town, which is domicile to one (1) government institution relevant to the subject of this research.

3.5 Target population

A complete demographic is the subject of interest, things, or things that have something in connection with something else, (Mugenda, 2013). In the context of this study, the target population comprised of employees working within the supply chain management departments of thirteen Semi-Autonomous Government Agencies operating under the Ministry of Health. These agencies will include the following:

- Kenyatta National Hospital (KNH)
- Moi Teaching and Referral Hospital (MTHR)
- Kenyatta University Teaching Research and Referral Hospital (KUTRRH)
- Kenya Medical Research Institute (KEMRI)
- Kenya Medical Supplies Authority (KEMSA)
- Kenya Medical Training College (KMTC)
- National Health Insurance Fund (NHIF)
- National Syndemic Diseases Control Council (NSDCC)
- National Cancer Institute of Kenya (NCI-Kenya)
- Medical Practitioners and Dentist Council (KMPDC)
- The Mathari National Teaching and Referral Hospital (MNTRH)
- Nursing Council of Kenya (NCK)
- Kenya Nuclear Regulatory Authority (KNRA)

The one hundred (100) supply chain management officers made up the target audience of this study. This population was chosen since they are perceived to be most affected by ethical dilemmas.

3.6 Sampling procedures and techniques

The researcher used the survey as the strategy to gather information regarding the entire group due to the small number of targeted population (Nderitu, 2017). In this instance, a frame of reference denotes a set of factors from which the cohort is selected, and it is substantially associated with the demographic group entirety. Conversely, a sampling method refers to the statistical technique employed by a researcher to create a suitable sample that accurately represents the population under investigation (Gaurav, 2019). In this particular study, a stratified random sampling method was employed. This approach ensured that each respondent has an equal opportunity to participate in the research. To facilitate this process, the researcher divided the thirteen (13) Semi-Autonomous Government Agencies under the Ministry of Health into strata.

3.7 Sample Population

Compared to a wider available populace, a group of people is a more compressed meaningful subset of the total population, (Mugenda, 2013). In this research, the sample of interest consisted of 100 respondents employed in the supply chain management departments within the thirteen (13) Semi-Autonomous Government Agencies that fall under the Ministry of Health in Kenya.

3.8 Construction of research instruments

Questionnaires were used across the research since they are considered helpful in gathering information on knowledge, attitudes, perceptions, behaviors, social norms, facts, and other types

of information, (Mugenda, 2013). They are also considered swift, cost-effective, and accurate methods of collecting large amounts of complex and confidential data from the respondents. It was therefore the most successful tool for assisting a researcher in collecting data in a short time. The participants who were chosen for questionnaires were the persons selected from the specified population. Likert scales in which participants were asked to describe their thoughts on a scale of 1 to 5 were used in the study. To get precise answers for quantitative analysis, highly structured questionnaires were employed.

3.9 Testing for validity and reliability

Authenticity is the degree to which conclusions drawn from the examination of the data gathered accurately and completely represent the phenomenon under study. Contrarily, dependability measures the extent to which research instruments or methods consistently produce stable results when applied repeatedly to the same or similar subjects or phenomena, (Kothari, 2019).

The validity of the instruments to be utilized in this study was ascertained through several steps, including piloting data collection tools, member checks with the interviewed sample, careful data analysis, and ensuring strict adherence to ethical guidelines during the research process. The instruments returned from the pilot study underwent thorough review and analysis by experts to ensure that the questionnaire contents are appropriate for the intended purpose with a high level of consistency.

3.10 Data collection methods and procedures

The data collection process is a systematic approach for obtaining essential information in a research study, (Marendi, 2014). In this particular research, a combination of primary and secondary data will be employed, with a predominant focus on quantitative and descriptive data, (Zhang, 2020).

Questionnaires were selected as the appropriate tool for data collection due to their capacity to gather information that is not directly observable, encompassing individuals' emotions, motivations, attitudes, achievements, and experiences, (Zhang, 2020). Respondents were presented with descriptive statements and they were asked to express their agreement or perception using a 5-point Likert scale. The Likert scale allowed respondents to rate each statement according to how much they concur or disagree with it. Questionnaires were administered using the drop-and-pick method.

3.11 Proposed Data Analysis Techniques and Procedures

Following the data-gathering process, the completed questionnaires underwent a thorough review to ensure that they are filled out completely. They were then given special codes and input into Statistical Package for the Social Sciences version 20.0. These steps were taken to ensure that the data obtained is valid, consistent, uniform, and comprehensive. Once the data is input in SPSS, a series of analyses were conducted. Descriptive analysis was utilized to examine the frequencies of responses, both in absolute numbers and relative percentages.

Measures of central tendency, such as mean values, were used to assess the average or central trends in the data, while measures of data spread, like standard deviations, provided insights into the variability within the dataset. Correlation and regression analysis were applied in addition to descriptive analysis to examine the type and strength of correlations between the relevant variables of interest. Various statistical metrics were calculated and interpreted within the framework of different statistical models. Tests of the study's propositions were also conducted using inferential analysis. The calculation of the regression coefficient adopted multiple linear regression, adhering to the methodology as per the formula below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where

Y	=	Supply Chain Performance
β_0	=	Constant term or intercept
β_i	=	(i = 0-5) = Regression Coefficient
X_1	=	Transparent Procurement Practices
X_2	=	Accountability Practices in Procurement
X_3	=	Integrity Practices in Procurement
X_4	=	Procurement Professionalism Practices
ϵ	=	Error term

Table 3.1 Operationalization of study variables

Variable	Indicators	Measure	Questionnaire item	Analysis Techniques
Ethical Procurement Practices (Independent)	-Transparent Procurement Practices	-Openness and fairness	Questionnaire	Frequencies
	-Accountability Practices in Procurement	-Compliance	Part – B	Means
	-Integrity Practices in Procurement	-Ethical standards	Q5,6,7,8,	Correlation F - Test
	-Procurement Professionalism Practices	-Qualifications and training		T – Test
Performance of medical supply chain (Dependent)	-Inventory Management	-Cost reduction	Questionnaire	Regression
	- Supply Availability	-Customer satisfaction	Part – C Q 9	Correlation F - Test
	-Demand Forecasting	-Lead time	Questionnaire Part – D	
	-Cost management	-Cost recovery	Q10	T - Test

Source: Research Data (2023)

3.12 Ethical Considerations

Ethics is a collection of regulations that guide scholarly practice and research, (Amiri, 2019). As a result, the researcher's conduct as well as the behavior of those who become the focus of this research must be appropriate. During the design and first entry phases, as well as data collection, assessment, and reporting, moral problems arise. The study's most ethical severe issue is the right to privacy. There will be no compulsion placed on the participants to give access. During data analysis and presentations, respondents were provided with clear information about their entitlements and how their data were utilized.

During data collection, privacy and confidentiality were strictly maintained. Studying participants' conducts in their private lives were discouraged since it is deemed inappropriate. Permission was requested from NACOSTI, an ethical clearance certificate from Mount Kenya University and an introduction letter were also prepared before data collection. Throughout the data processing and reporting stages, meticulous attention was paid to prevent any biased reporting and ensure the accurate interpretation of statistical data. All the references from journals and books that the researcher made use of in this study were properly acknowledged.

CHAPTER FOUR: RESEARCH FINDINGS, ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents the research findings, analysis, and presentation of the study examining the effects of ethical procurement practices on the performance of medical supply chains in Kenya. It encompasses descriptive results, diagnostic tests, and inferential analyses aligned with the study's specific objectives. It begins with a detailed description of the data collected, highlighting key trends and patterns observed in the transparent, accountability, integrity, and professional procurement practices within the medical supply chain in Kenya. The diagnostic tests ensure the assumptions of regression analysis are met, setting the foundation for the inferential analyses. Through statistical techniques, the chapter evaluates the relationships of the various ethical procurement practices and supply chain performance, providing a comprehensive understanding of how these practices influence efficiency, effectiveness, and overall performance in the Kenyan medical supply context.

4.1.1 Response Rate

The study achieved a commendable response rate of 86%, with 86 out of 100 distributed questionnaires duly filled and returned by respondents employed in the supply chain management departments of thirteen Semi-Autonomous Government Agencies under the Ministry of Health in Kenya. This high response rate is indicative of strong engagement and interest in the research topic, which enhances the reliability and validity of the findings. According to Fincham (2008), response rates above 70% are considered very good and suggest that the sample adequately represents the population, thus reducing the risk of non-response bias. Similarly, Nulty (2008) asserts that response rates over 80% are deemed excellent, providing a solid foundation for robust data analysis and inference. Therefore, the 86% response rate in this

study is not only adequate but also aligns with established standards in survey research, ensuring that the collected data is both credible and generalizable to the target population.

Table 4.1: Response Rate

	Frequency	Percentage
Response	86	86.0
Non-response	14	14.0
Total	100	100.0

Source: Research Data (2024)

4.1.2 Reliability Analysis

In assessing the reliability of the data collection instrument, Cronbach's alpha coefficient was employed to determine the internal consistency of the various scales used in the study. The Cronbach's alpha values obtained exceeded the acceptable threshold of 0.7, which is widely regarded as an indicator of reliable constructs (Tavakol & Dennick, 2011). Specifically, the Transparent Procurement Practices scale, with 16 items, achieved an alpha of 0.876, indicating high reliability. The Accountability Practices in Procurement scale, comprising 12 items, recorded an alpha of 0.909, demonstrating excellent internal consistency. The Integrity Procurement Practices scale, with 11 items, had an alpha of 0.838, signifying strong reliability. The Professional Procurement Practices scale, containing 10 items, showed an alpha of 0.798, reflecting satisfactory reliability. The Performance scale, also with 10 items, achieved an alpha of 0.877, underscoring its high reliability. Overall, the instrument encompassing all 59 items yielded an exceptional Cronbach's alpha of 0.963, confirming the robust reliability of the data collection tool. These results affirm the consistency and dependability of the measures used in this study, aligning with recent research standards that emphasize the importance of Cronbach's alpha values above 0.7 for reliable scales (Hair et al., 2019).

Table 4.2: Reliability Analysis

Variable	Cronbach Alpha	Items	Decision
Transparent Procurement Practices	0.876	16	Reliable
Accountability Practices in Procurement	0.909	12	Reliable
Integrity Procurement Practices	0.838	11	Reliable
Professional Procurement Practices	0.798	10	Reliable
Performance	0.877	10	Reliable
Overall	0.963	59	Reliable

Source: Research Data (2024)

4.1.3 Validity Analysis

The validity of the survey instrument used in this study was ensured through rigorous measures. Face validity was addressed by seeking expert advice from the project supervisor, who provided valuable feedback on the questionnaire's content and appearance. This feedback guided improvements to ensure clarity, relevance, and appropriateness of the survey items for the study's objectives. Content validity was precisely established by aligning questionnaire items with a thorough review of existing literature and theoretical frameworks. Each question was crafted to reflect key concepts derived from established theories such as the Public Value Theory (Moore, 1995), Utilitarianism Ethical Theory (Bentham, 2009), and Deontology Ethical Theory (Kant, 1964), ensuring that the survey comprehensively covered the dimensions relevant to ethical procurement practices on the performance of medical supply chains in Kenya. This process ensured that the survey instrument was both theoretically grounded and practically relevant for capturing meaningful data related to the study objectives.

4.2 Research Presentation and Interpretation

This section provides a comprehensive overview of the study's findings, beginning with an analysis of the respondent profile, which includes key demographic characteristics such as age, tenure, and the length of operation of their respective organizations. This demographic

information sets the context for understanding the background of the participants involved in the study. Following this, the section delves into the descriptive analysis of the study variables, presenting detailed summaries using means and standard deviations. This analysis offers insights into the central tendencies and variability within the data, helping to elucidate the impact of transparent, accountability, integrity, and professional procurement practices on the performance of medical supply chains in Kenya.

4.2.1 Respondent Profile

The respondent age categories in this study provide valuable insights into the demographic distribution of the supply chain management professionals within the Semi-Autonomous Government Agencies under the Ministry of Health in Kenya. The majority of respondents were aged between 31-40 years (48.8%), followed by those under 30 years (43.0%), while a smaller proportion were aged 41-50 years (4.7%) and over 50 years (3.5%) (Figure 4.1). These results suggest a predominantly young workforce, which could have significant implications for the adoption and implementation of ethical procurement practices. Younger professionals may be more open to innovative approaches and ethical standards in procurement, aligning with findings from Ganiyu and Idowu (2019) that younger employees tend to adopt new practices more readily. This demographic trend supports the study's overall objective by highlighting the potential for robust ethical procurement practices driven by a youthful and dynamic workforce. The relatively high percentage of younger respondents indicates a promising future for the performance of medical supply chains, as this group is likely to embrace transparency, accountability, integrity, and professionalism in procurement practices.

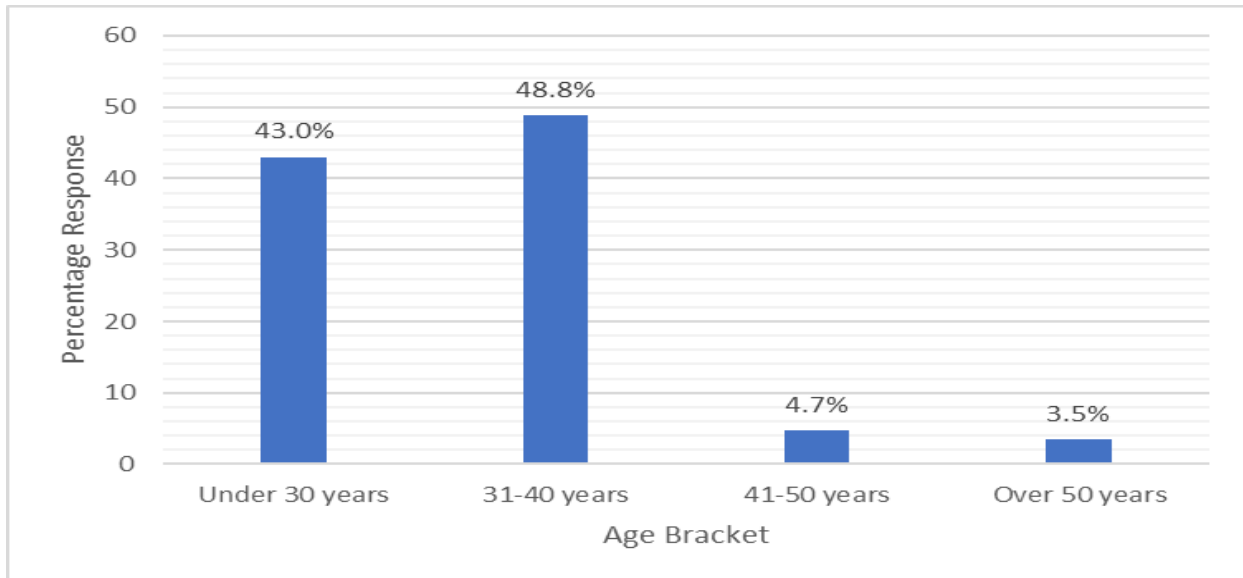


Figure 4.1: Age Bracket

Further, the length of continuous service of the respondents offers key insights into their experience and familiarity with procurement practices within the Semi-Autonomous Government Agencies under the Ministry of Health in Kenya. The results show that 17.4% of the respondents have less than 2 years of service, 36.0% have 2-5 years, 26.7% have 6-10 years, and 19.8% have over 10 years of continuous service (Figure 4.2). These findings indicate a balanced mix of both relatively new and seasoned professionals within the workforce. The substantial percentage of respondents with 2-5 years and 6-10 years of service (a combined total of 62.7%) suggests that a significant portion of the workforce is sufficiently experienced to understand and implement ethical procurement practices effectively. According to McCue and Johnson (2010), employees with moderate tenure are often well-versed in organizational procedures and more adaptable to ethical standards compared to those with very short or extremely long tenure. This distribution supports the study's overall objective by highlighting a workforce that is experienced enough to comprehend the importance of transparent, accountable, integrity-driven, and professional procurement practices, yet still flexible and open to continuous improvement. Such a profile is

conducive to enhancing the performance of medical supply chains in Kenya through the effective adoption of ethical procurement practices.

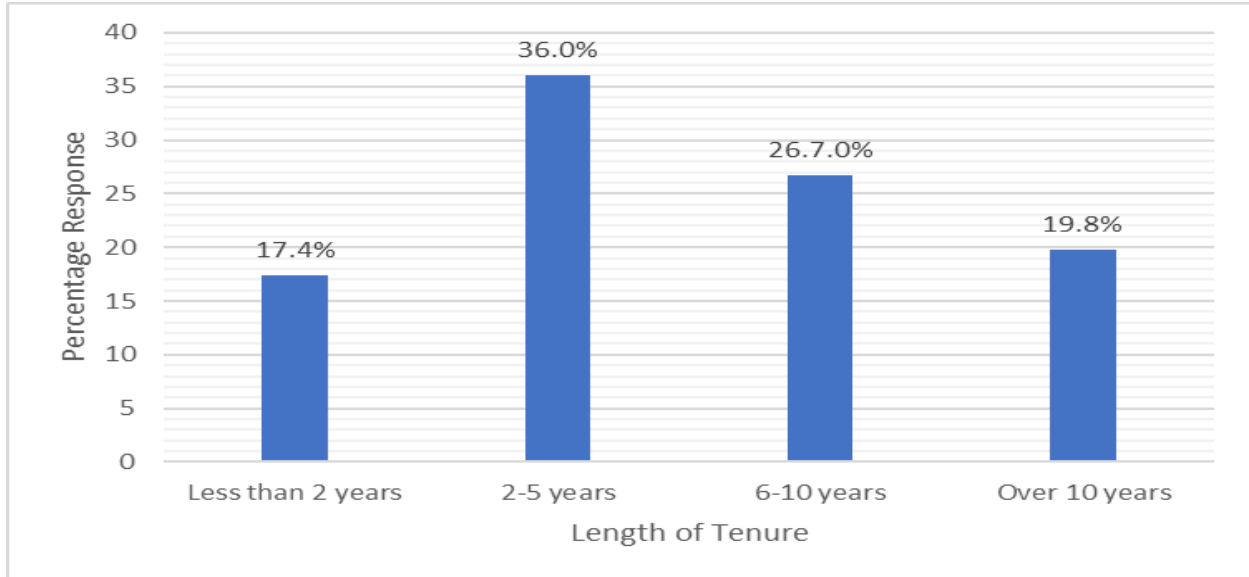


Figure 4.2: Length of Continuous Service

The length of organizational existence provides an understanding of the maturity and stability of the institutions involved in the study. The results reveal that 7.0% of the organizations have been in existence for 1-5 years, 31.4% for 6-10 years, 8.1% for 11-15 years, and a majority of 53.5% have been operating for over 15 years. These findings indicate that more than half of the organizations have a long-standing presence, which can be advantageous for implementing and maintaining ethical procurement practices. Established organizations are likely to have well-defined procedures and policies in place, which can facilitate the integration of transparent, accountable, integrity-driven, and professional procurement practices (Walker & Brammer, 2009). The significant proportion of organizations with over 15 years of existence points to a stable and potentially robust framework for ethical procurement, contributing positively to the performance of medical supply chains. The presence of newer organizations also suggests a mix

of traditional and innovative approaches within the sector, allowing for a dynamic environment conducive to adopting best practices in procurement.

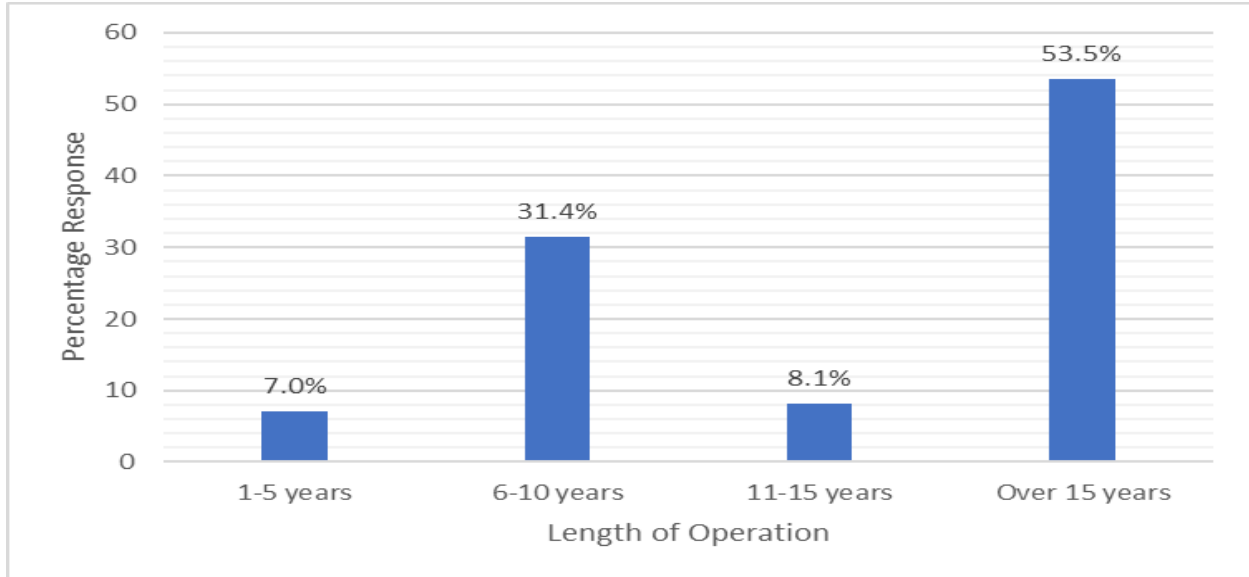


Figure 4.3: Length of Organizational Existence

4.2.2 Transparent Procurement Practices

The study sought to establish the effect of transparent procurement practices on the performance of the medical supply chain in Kenya. To this end, statements were posed to which respondents were asked to respond on a 5-point Likert scale: 5: Very great extent; 4: Great extent; 3: Moderate extent; 2: Little extent; 1: No extent. Both means and standard deviations were used in analysis. In analyzing the results, means below 2.5 were taken to indicate low extent; while means between 2.5 and 3.4 were taken to imply moderate extent. Means from 3.5 and above were taken to indicate great extent. Table 4.3 presents results from the first independent variable, transparent procurement practices.

The study's analysis of transparent procurement practices within the medical supply chain in Kenya revealed a high overall mean of 4.189 and an overall standard deviation of 0.852, indicating that respondents generally perceive these practices as being implemented to a great

extent. Individual statement results further support this finding, with particularly high means for statements such as the clear and transparent process for selecting suppliers (mean = 4.593, SD = 0.757), the existence of a code of conduct governing employee and supplier behaviour (mean = 4.523, SD = 0.762), and the overall transparency and fairness of procurement practices (mean = 4.535, SD = 0.778). These high means suggest a strong adherence to transparent practices, which is crucial for ensuring accountability and reducing corruption in procurement processes (Wittig, 2003). However, the statement regarding the posting of tenders and contracts on the Public Procurement Information Portal received a moderate mean of 3.116 and a higher standard deviation of 1.745, indicating variability in responses and a potential area for improvement. Similarly, the whistle-blower protection mechanism had a mean of 3.593 and a standard deviation of 1.010, suggesting that while some mechanisms are in place, there is room for enhancement to ensure full transparency and protection for those reporting unethical behaviour. These findings align with literature emphasizing the importance of transparent procurement for improving supply chain performance and reducing corruption risks (Caldwell et al., 2009). Enhancing transparency through robust mechanisms and clear policies is vital for the effective functioning of medical supply chains in Kenya.

Table 4.3: Transparent Procurement Practices

	Mean	Std. Dev
Procurement employees are familiar with the concept of transparent procurement practices	4.349	.590
Your organization has documented procurement policies and procedures	4.326	.622
Decisions on procurement are made objectively, without regard to external circumstances or interpersonal relationships	3.907	.806
Your organization provides all of its lost bidders with a debriefing regarding the shortcomings in their bid documents.	4.302	.783
Procurement decisions are based on a competitive bidding process, and all potential bidders are given equal opportunity to participate	4.314	.911

Procurement decisions and processes are documented, and these records are available for public scrutiny	4.349	.682
There is a clear and transparent process for selecting suppliers, including evaluation criteria and scoring methods	4.593	.757
Conflicts of interest are disclosed and managed during the procurement process	3.872	.878
Your organization ensure that procurement decisions are based on value for money and quality rather than cost alone	4.407	.742
There are mechanisms in place to prevent fraud, corruption, or favoritism in procurement	4.314	.786
Your organization engage in supplier diversity efforts to promote fairness and inclusion in procurement practices	4.384	.800
There is a code of conduct that governs the behavior of both employees and suppliers during the procurement process	4.523	.762
Your organization has a whistleblower protection mechanism in place	3.593	1.010
The firm's procurement decisions are subject to internal and external audits	4.140	.972
The firm's tenders and contracts are posted in the Public Procurement Information Portal for public scrutiny	3.116	1.745
Your organization's procurement practices are transparent and fair	4.535	.778
Overall	4.189	0.852

4.2.3 Accountability Practices

The study also set out to evaluate the impact of accountability practices in procurement on the performance of the medical supply chain in Kenya. Similarly, statements were posed to which respondents were asked to respond on a 5-point Likert scale: 5: Very great extent; 4: Great extent; 3: Moderate extent; 2: Little extent; 1: No extent. Both means and standard deviations were used in analysis. Table 4.4 presents results from the second independent variable, accountability practices.

The analysis of accountability practices in the medical supply chain in Kenya yielded an overall mean of 3.961 and an overall standard deviation of 0.962, indicating that respondents perceive these practices to be implemented to a great extent. High means were observed for statements

such as the effective communication of procurement policies and procedures to all relevant stakeholders (mean = 4.523, SD = 0.681), familiarity of procurement employees with accountable procurement practices (mean = 4.244, SD = 0.920), and the presence of clear accountability mechanisms for all personnel involved in the procurement process (mean = 4.400, SD = 0.844). These findings point to the importance of well-communicated and understood accountability practices for enhancing the performance of procurement functions, as highlighted by Thai (2001). However, areas for improvement were identified, such as the system to track and report on the performance of suppliers and contractors, which had a moderate mean of 3.209 and a higher standard deviation of 1.519, and the established key performance indicators (KPIs) for measuring procurement accountability (mean = 3.420, SD = 1.173). These results suggest variability in the implementation of tracking and performance measurement systems, which are critical for maintaining accountability and improving supply chain performance. Implementing robust tracking and reporting systems, as well as clearly defined KPIs, can further enhance accountability in procurement processes, leading to better management and oversight (Lynch, 2003). Strengthening these areas will contribute to more effective and transparent procurement practices within the medical supply chain.

Table 4.4: Accountability Practices

	Mean	Std. Dev
The procurement employees are familiar with the concept of accountable procurement practices	4.244	.920
Your organization has established procurement policies and procedures that emphasize accountability	4.070	.930
The firm's procurement policy is regularly reviewed and updated to ensure accountability in line with the best practices and regulations	3.700	1.149
There is a formal process for assessing and managing risks associated with procurement activities	4.174	.578

Your organization ensure that procurement decisions are consistent with established rules and guidelines	3.860	.960
There are clear accountability mechanisms in place for all personnel involved in procurement process	4.400	.844
Your organization has a system to track and report on the performance of suppliers and contractors	3.209	1.519
There are established key performance indicators (KPIs) to measure the accountability of the procurement process.	3.420	1.173
There is a dedicated team or officer responsible for ensuring accountability in the procurement process.	4.221	.726
There are mechanisms in place to encourage employees to report any irregularities or unethical behavior in procurement.	3.616	1.200
Your organization regularly reports on procurement activities, including financial data, to demonstrate accountability.	4.093	.863
Procurement policies and procedures are communicated effectively to all relevant stakeholders within your organization.	4.523	.681
Overall	3.961	0.962

4.2.4 Integrity Procurement Practices

The study further sought to determine the impact of integrity procurement practices on the performance of the medical supply chain in Kenya. Similarly, statements were posed to which respondents were asked to respond on a 5-point Likert scale: 5: Very great extent; 4: Great extent; 3: Moderate extent; 2: Little extent; 1: No extent. Both means and standard deviations were used in analysis. Table 4.5 presents results from the third independent variable, integrity procurement practices.

The analysis of integrity procurement practices within the medical supply chain in Kenya reveals an overall mean of 4.124 and an overall standard deviation of 0.815, indicating that respondents generally perceive these practices to be implemented to a great extent. High means were observed for statements such as ensuring professional behavior aligns with the firm's goals (mean = 4.700, SD = 0.615), consistent procurement decisions aligned with established rules and

guidelines (mean = 4.581, SD = 0.743), and organizational awareness of the vulnerability of public procurement to mismanagement and corruption (mean = 4.465, SD = 0.698). These findings suggest a strong emphasis on integrity in procurement processes, which is essential for fostering trust and accountability within supply chains (Mantzaris, 2014). However, moderate means were recorded for mechanisms for public access to procurement-related information (mean = 3.791, SD = 0.896) and the implementation of separate internal control frameworks to enhance integrity (mean = 3.767, SD = 0.942). These results indicate some variability and potential areas for improvement, emphasizing the need for more robust mechanisms to ensure transparency and integrity (Uyarra et al., 2014). Strengthening these areas can enhance the overall integrity of procurement practices, ensuring that procurement activities are conducted in an ethical and transparent manner, thereby improving the performance of medical supply chains in Kenya.

Table 4.5: Integrity Procurement Practices

	Mean	Std. Dev
The firm's procurement employees are familiar with the concept of integrity practices	4.244	.484
Your organization has a documented procurement policy that emphasizes integrity	4.151	.642
Employees in the organization's procurement department have agreed to a moral code of conduct for carrying out their responsibilities.	3.930	.779
The firm's procurement decisions are consistent and aligned with the established rules and guidelines	4.581	.743
The firm's procurement decisions are based on ethical considerations, such as sustainable sourcing.	3.919	.843
Your organization has a mechanism for public access to procurement related information to ensure integrity.	3.791	.896
The organization's procurement practices are conducted with integrity and ethical considerations.	4.023	.840
There are specific barriers in maintaining integrity in the procurement process.	3.791	1.480

Your organization has implemented separate internal control frameworks to enhance its integrity.	3.767	.942
Your organization is aware that public procurement is vulnerable to mismanagement and corruption.	4.465	.698
To ensure integrity, your professional behavior must coincide with the goals of the firm you serve.	4.700	.615
Overall	4.124	0.815

4.2.5 Professional Procurement Practices

The study set out to assess how professional procurement practices, affect the performance of the medical supply chain in Kenya. Similarly, statements were posed to which respondents were asked to respond on a 5-point Likert scale: 5: Very great extent; 4: Great extent; 3: Moderate extent; 2: Little extent; 1: No extent. Both means and standard deviations were used in analysis. Table 4.6 presents results from the third independent variable, professional procurement practices.

The analysis of professional procurement practices within the medical supply chain in Kenya yielded an overall mean of 4.168 and an overall standard deviation of 0.803, indicating that respondents generally perceive these practices to be implemented to a great extent. High means were observed for statements such as familiarity with the concept of procurement professionalism among procurement professionals (mean = 4.535, SD = 0.588) and the importance placed on supplier selection and management (mean = 4.454, SD = 0.680). These results highlight a strong emphasis on professional standards and the critical role of supplier management in effective supply chain operations (Morris, 2001). However, moderate means were recorded for the existence of a code of conduct governing procurement professionals' behavior (mean = 3.977, SD = 0.767) and the presence of a contract implementation committee for managing long-term contracts (mean = 3.837, SD = 1.235). These findings suggest that while professional practices are generally upheld, there is room for improvement in formalizing ethical

guidelines and ensuring structured oversight for long-term contracts (CIPS, 2013). Strengthening these aspects can further enhance the professionalism and efficiency of procurement practices, leading to better performance of medical supply chains in Kenya.

Table 4.6: Professional Procurement Practices

	Mean	Std. Dev
The firm's procurement professionals are familiar with the concept of procurement professionalism	4.535	.588
Your organization has established procurement policies and procedures that emphasize professionalism.	4.419	.583
There is a code of conduct governing the behavior of procurement professionals in your organization.	3.977	.767
Your organization provide training and development opportunities to enhance the professionalism and expertise of procurement professionals.	3.907	.890
Procurement professionals are required to have specific certifications to ensure professionalism and competence.	4.244	.530
There are measures in place to minimize the potential risks related to unprofessional behavior in procurement	4.151	.976
Your organization recognize procurement as a strategic function.	4.140	.948
There is always a contract implementation committee for effective management long-term contracts in your organization.	3.837	1.235
The procurement function has put in place long and short-term sourcing strategies to achieve efficiency.	4.012	.833
Your organization consider supplier selection and management as an important component in supply chain management.	4.454	.680
Overall	4.168	0.803

4.2.6 Performance

The study set out to assess the performance of the medical supply chain in Kenya. Similarly, statements were posed to which respondents were asked to respond on a 5-point Likert scale: 5: Very great extent; 4: Great extent; 3: Moderate extent; 2: Little extent; 1: No extent. Both means and standard deviations were used in analysis. Table 4.7 presents results from the dependent variable, performance.

The analysis of performance within the medical supply chain in Kenya reveals an overall mean of 4.102 and an overall standard deviation of 0.786, indicating that respondents generally perceive the performance of the medical supply chain to be high. High means were observed for statements such as the improved relationship with suppliers due to adherence to the ethical code of conduct (mean = 4.558, SD = 0.745) and the familiarity of procurement employees with the concept of supply chain performance (mean = 4.407, SD = 0.582). These findings point to the positive impact of ethical practices and professional knowledge on supply chain performance, which is critical for efficiency and effectiveness (Carter & Jennings, 2004). However, moderate means were recorded for the mechanisms in place for monitoring the accuracy of forecasting to reduce overstock and understock situations (mean = 3.709, SD = 1.050) and the decrease in operating costs due to enhanced supplier management (mean = 3.814, SD = 0.833). These results suggest that while there are significant strengths in ethical conduct and professional familiarity, there is potential for improvement in forecasting accuracy and cost management. Effective forecasting and supplier management are crucial for minimizing costs and ensuring a balanced inventory, thereby enhancing overall supply chain performance (Christopher, 2011). Strengthening these areas will further improve the efficiency and sustainability of the medical supply chain in Kenya.

Table 4.7: Performance

	Mean	Std. Dev
Procurement employees are familiar with the concept of supply chain performance.	4.407	.582
There is established procedures to address and mitigate disruptions in supply during emergencies or supply shortages.	3.954	.718
Effective management of supply chain improves customer satisfaction	4.081	.884

The personnel of the organization have improved the relationship with suppliers by adhering to the ethical code of conduct.	4.558	.745
Operating costs have decreased as a consequence of enhanced supplier management	3.814	.833
There is a mechanism for monitoring the accuracy of forecasting to reduce overstock and understock situations.	3.709	1.050
Your organization ensures that inventory is handled in compliance with regulatory standards and best practices.	4.349	.716
Your organization ensures that orders are cost-effective and value for money.	4.326	.622
Your organization faces barriers in optimizing the performance of the supply chain.	3.942	.859
There are measures in place to minimize the risk of counterfeit or substandard supplies.	3.884	.846
Overall	4.102	0.786

4.4 Diagnostic Tests

In this study, a series of diagnostic tests were conducted to ensure the reliability and validity of the regression analysis. These tests included the Multicollinearity Test, Normality Test, Linearity Test, and Heterogeneity Test. The Multicollinearity Test was performed to detect any high correlations among the independent variables, which could distort the regression results. The Normality Test assessed whether the residuals of the regression model followed a normal distribution, a key assumption for parametric statistical tests. The Linearity Test evaluated whether there was a linear relationship between the independent and dependent variables, ensuring that the regression model accurately represented this relationship. Lastly, the Heterogeneity Test, also known as the heteroscedasticity test, was conducted to check for constant variance of the residuals, an essential assumption for the reliability of the regression estimates. These diagnostic tests are crucial for validating the regression model and ensuring robust and credible results in examining the effects of ethical procurement practices on the performance of the medical supply chain in Kenya.

4.4.1 Multicollinearity Test

The Multicollinearity Test results indicate the presence of some degree of multicollinearity among the independent variables in the study. The Tolerance values for Transparent Procurement Practices (0.313), Accountability Practices (0.309), Integrity Procurement Practices (0.213), and Professional Procurement Practices (0.152) are all below the threshold of 0.4, suggesting moderate to high multicollinearity. Correspondingly, the Variance Inflation Factor (VIF) values for these variables are 3.192, 3.239, 4.704, and 6.579, respectively, with VIF values above 10 typically indicating serious multicollinearity (O'Brien, 2007). However, since the VIF values are below this critical level, the multicollinearity in this study is not severe enough to warrant immediate concern but should be monitored. Multicollinearity can inflate the standard errors of the coefficients, making it difficult to determine the individual effect of each predictor variable (Farrar & Glauber, 1967).

Table 4.8: Multicollinearity Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Transparent Procurement Practices	.313	3.192
Accountability Practices	.309	3.239
Integrity Procurement Practices	.213	4.704
Professional Procurement Practices	.152	6.579

4.4.2 Normality Test

The Shapiro-Wilk test for normality results indicate that the data for all four independent Variables -Transparent Procurement Practices (Statistic: 0.856, Sig.: 0.139), Accountability Practices (Statistic: 0.993, Sig.: 0.972), Integrity Procurement Practices (Statistic: 0.844, Sig.: 0.207), and Professional Procurement Practices (Statistic: 0.817, Sig.: 0.111)—do not

significantly deviate from a normal distribution. The significance values (p-values) for all variables are above the typical alpha level of 0.05, indicating that the null hypothesis of normality cannot be rejected (Razali & Wah, 2011). This suggests that the residuals of the regression model follow a normal distribution, satisfying one of the key assumptions for parametric statistical tests. Normality is essential for the validity of inferential statistics, as it impacts the accuracy of confidence intervals and hypothesis tests (Ghasemi & Zahediasl, 2012). The results imply that the data distribution is approximately normal, thus supporting the robustness of the regression analysis conducted in this study.

Table 4.9: Normality Test

	Shapiro-Wilk	
	Statistic	Sig.
Transparent Procurement Practices	.856	.139
Accountability Practices	.993	.972
Integrity Procurement Practices	.844	.207
Professional Procurement Practices	.817	.111

4.4.3 Linearity Test

The linearity test was conducted using a scatterplot matrix, which displayed the relationships between each independent variable-Transparent Procurement Practices, Accountability Practices, Integrity Procurement Practices, and Professional Procurement Practices and the dependent variable, the performance of the medical supply chain. The scatterplot matrix in Figure 4.4 indicated a linear distribution of the data points for all independent variables against the dependent variable, supporting the assumption of linearity in the regression analysis. Linearity is a fundamental assumption in regression models, ensuring that the relationship between the independent and dependent variables can be accurately modeled with a linear equation (Osborne & Waters, 2002). The presence of linear relationships, as evidenced by the scatterplot matrix,

suggests that the regression coefficients will provide a reliable estimate of the effect of each independent variable on the dependent variable. This is crucial for the validity of the model's predictions and for making informed decisions based on the analysis (Tabachnick & Fidell, 2013). The linearity observed in this study reinforces the appropriateness of using linear regression techniques to explore the effects of ethical procurement practices on the performance of the medical supply chain in Kenya.

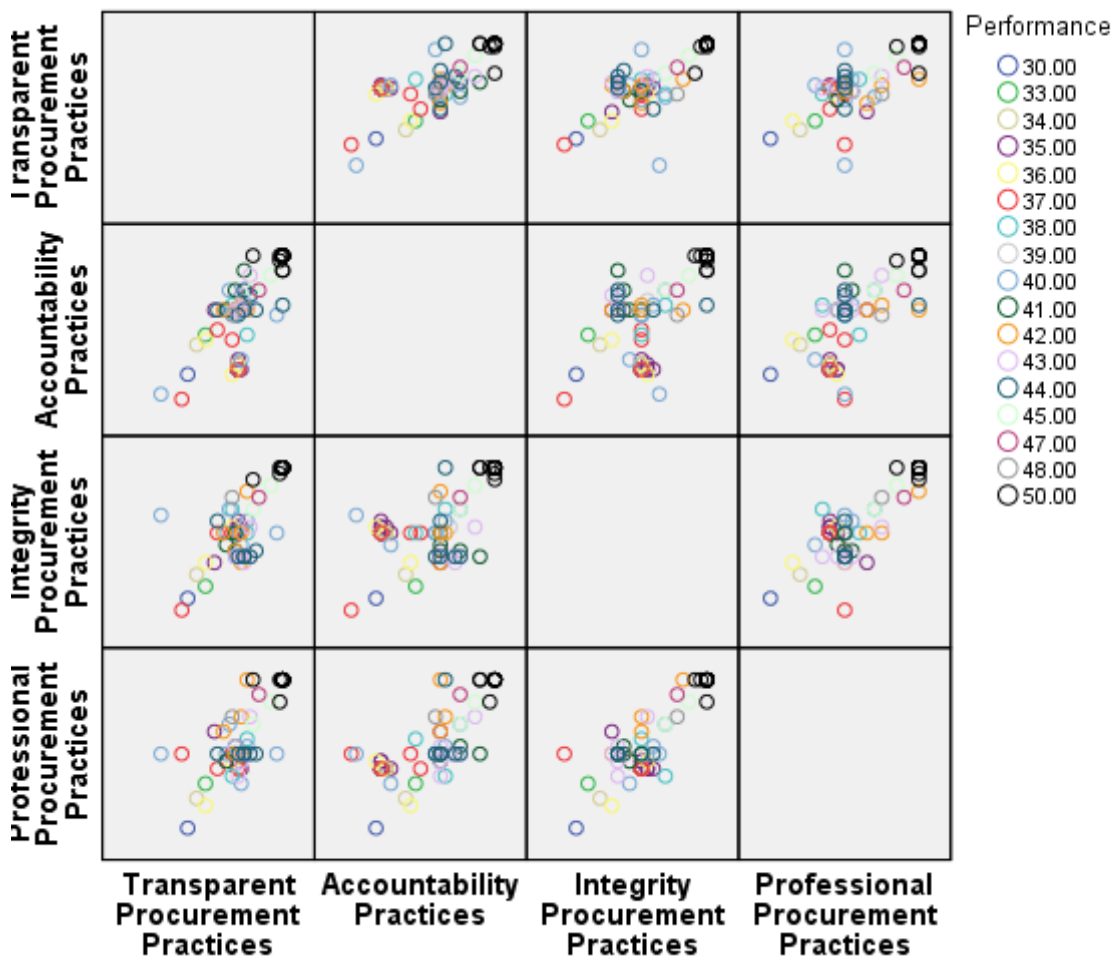


Figure 4.4: Linearity Test

4.4.4 Heterogeneity Test

The Heterogeneity Test was conducted to assess the consistency of residuals across the range of the independent variables. The analysis revealed that the spread of the residuals was consistent, demonstrating no systematic patterns or trends. As illustrated in the scatterplot (Figure 4.5), data points were randomly dispersed, forming a symmetric cloud shape around the horizontal axis. This distribution indicates that there was no significant relationship between the magnitude of the residuals and the levels of the independent variables. The absence of such systematic relationships supports the assumption of homoscedasticity, which is crucial for ensuring the reliability of the regression estimates and valid inference in regression analysis (Breusch & Pagan, 1979; White, 1980). Homoscedastic residuals confirm that the variability in the dependent variable is evenly distributed across all levels of the independent variables, thereby reinforcing the robustness of the regression model used in this study.

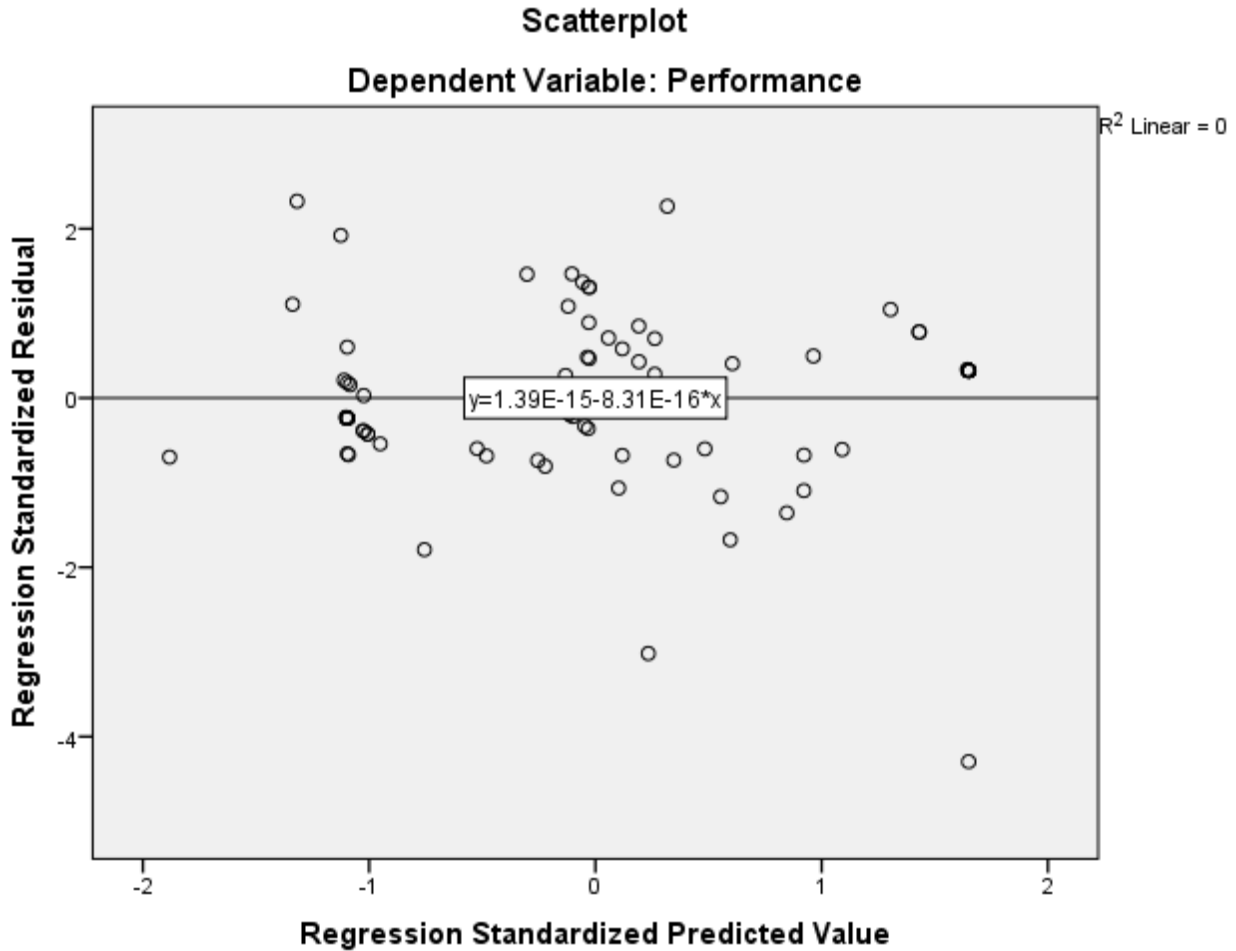


Figure 4.5: Heterogeneity Test

4.5 Correlation Analysis

A correlation analysis was conducted to determine the strength, significance and direction of the relationship between the independent and dependent variables. The correlation analysis test results indicate strong positive relationships between the independent variables and the performance of the medical supply chain. Specifically, Transparent Procurement Practices have a correlation coefficient of $r = 0.697$ ($p < 0.001$), indicating a substantial positive relationship with performance. Accountability Practices show an even stronger correlation with $r = 0.873$ ($p < 0.001$), suggesting that higher levels of accountability are strongly associated with improved performance. Integrity Procurement Practices also demonstrate a significant positive correlation

with $r = 0.660$ ($p < 0.001$), reflecting that greater integrity in procurement is positively related to performance. Finally, Professional Procurement Practices have a correlation coefficient of $r = 0.837$ ($p < 0.001$), indicating a robust positive association with performance. These findings point to the importance of each ethical dimension in enhancing supply chain performance, aligning with literature that highlights the critical role of ethical practices in achieving operational excellence (Harrison & Newholm, 2003; Melnyk et al., 2003). Strong correlations imply that improvements in these practices are likely to lead to better performance outcomes, reinforcing the value of integrating ethical procurement practices into organizational strategies.

Table 4.10: Correlation Analysis

		Performance	Transparent Procurement Practices	Accountability Practices	Integrity Procurement Practices	Professional Procurement Practices
Performance	r	1	.697	.873	.660	.837
	Sig. (2-tailed)		.000	.000	.000	.000
Transparent Procurement Practices	r	.697	1	.699	.769	.767
	Sig. (2-tailed)	.000		.000	.000	.000
Accountability Practices	r	.873	.699	1	.584	.787
	Sig. (2-tailed)	.000	.000		.000	.000
Integrity Procurement Practices	r	.660	.769	.584	1	.848
	Sig. (2-tailed)	.000	.000	.000		.000
Professional Procurement Practices	r	.837	.767	.787	.848	1
	Sig. (2-tailed)	.000	.000	.000	.000	

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

4.6 Regression Analysis

Regression analysis was employed to examine the relationship between the independent variables—Transparent Procurement Practices, Accountability Practices, Integrity Procurement Practices, and Professional Procurement Practices—and the dependent variable, the performance of the medical supply chain. The Model Summary IN Table 4.11 results provide key insights into the strength and explanatory power of the regression model. The coefficient of determination, $R^2 = 0.821$, indicates that approximately 82.1% of the variance in the performance of the medical supply chain can be explained by the independent variables included in the model. This high R^2 value suggests a strong model fit, demonstrating that the selected procurement practices are significant predictors of performance. The Adjusted R^2 of 0.812 accounts for the number of predictors in the model, adjusting the explained variance for the degrees of freedom and reinforcing the robustness of the model. The standard error of the estimate, 2.38068, reflects the average distance that the observed values fall from the predicted values, indicating the precision of the regression predictions. Overall, these results suggest that the model provides a reliable explanation of performance variations in the medical supply chain, highlighting the importance of integrating ethical procurement practices to enhance supply chain efficiency (Hair et al., 2010).

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.906 ^a	.821	.812	2.38068

a. Predictors: (Constant), Professional Procurement Practices, Transparent Procurement Practices, Accountability Practices, Integrity Procurement Practices

The Analysis of Variance (ANOVA) results (Table 4.12) for the regression model provide insights into the overall significance of the model in explaining variations in the performance of the medical supply chain. The ANOVA table shows that the Regression model has a Sum of Squares of 2102.876 with 4 degrees of freedom, resulting in a Mean Square of 525.719. This is compared to the Residual Sum of Squares of 459.077 with 81 degrees of freedom, yielding a Mean Square of 5.668. The F-statistic for the model is 92.758, with a significance level of $p < 0.001$, indicating that the model is statistically significant. This suggests that the independent variables—Professional Procurement Practices, Transparent Procurement Practices, Accountability Practices, and Integrity Procurement Practices—collectively contribute to explaining the variability in the dependent variable, performance. The high F-value and low p-value confirm that the model has a strong predictive capability and that the predictors are collectively significant in influencing the performance of the medical supply chain (Field, 2013).

Table 4.12: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2102.876	4	525.719	92.758	.000 ^b
	Residual	459.077	81	5.668		
	Total	2561.953	85			

a. Dependent Variable: Performance

b. Predictors: (Constant), Professional Procurement Practices, Transparent Procurement Practices, Accountability Practices, Integrity Procurement Practices

The coefficients table (4.13) provides detailed information about the individual contributions of each independent variable to the dependent variable, performance. The intercept is 5.309 with a standard error of 2.378. This value is statistically significant ($t = 2.232$, $p = 0.028$), indicating that when all independent variables are zero, the expected performance level is 5.309. The coefficient for Transparent Procurement Practices is 0.006 with a standard error of 0.056,

yielding a standardized coefficient (Beta) of 0.009. The t-value is 0.103, and the significance level is 0.918. This high p-value suggests that Transparent Procurement Practices do not have a statistically significant effect on the performance of the medical supply chain. The coefficient for Accountability Practices is 0.362 with a standard error of 0.055, resulting in a standardized Beta of 0.557. The t-value is 6.576, and the significance level is 0.000. These results indicate that Accountability Practices have a strong positive and statistically significant effect on performance.

The coefficient for Integrity Procurement Practices is -0.014 with a standard error of 0.097, and the standardized Beta is -0.015. The t-value is -0.143, and the significance level is 0.886. This high p-value suggests that Integrity Procurement Practices do not significantly affect performance. The coefficient for Professional Procurement Practices is 0.450 with a standard error of 0.134, resulting in a standardized Beta of 0.405. The t-value is 3.354, and the significance level is 0.001. This indicates a significant positive impact on performance, suggesting that higher levels of professionalism in procurement practices lead to better performance. As such, while Accountability Practices and Professional Procurement Practices are statistically significant predictors of performance, Transparent Procurement Practices and Integrity Procurement Practices do not show a significant effect. These findings highlight the importance of focusing on Accountability and Professionalism in enhancing the performance of the medical supply chain (Cohen et al., 2003; Hair et al., 2010).

Table 4.13: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.309	2.378		2.232	.028

Transparent Procurement Practices	.006	.056	.009	.103	.918
Accountability Practices	.362	.055	.557	6.576	.000
Integrity Procurement Practices	-.014	.097	-.015	-.143	.886
Professional Procurement Practices	.450	.134	.405	3.354	.001

a. Dependent Variable: Performance

4.5 Discussion

4.5.1 Transparent Procurement Practices and Performance

The coefficient for transparent procurement practices is 0.006 with a standard error of 0.056, resulting in a standardized Beta of 0.009. With a t-value of 0.103 and a significance level of 0.918, the findings indicate that Transparent Procurement Practices do not significantly influence the performance of the medical supply chain. This result suggests that, within this study, transparency in procurement processes may not be a critical factor affecting performance outcomes. This finding is somewhat contrasting with existing literature, which often emphasizes the importance of transparency in enhancing procurement performance. Studies have shown that transparent procurement practices can lead to better accountability, reduced corruption, and improved operational efficiency (Pellegrini & Gerlagh, 2008; OECD, 2016). For instance, Pellegrini and Gerlagh (2008) argue that transparency reduces opportunities for corruption and fosters more competitive and fair procurement processes, which can positively impact organizational performance.

However, the lack of significant impact in this study may be attributed to specific contextual factors or implementation issues. It is possible that the mechanisms for ensuring transparency were not sufficiently robust or well-implemented in the organizations studied, leading to minimal

observable effects on performance. Additionally, the limited scope of the measures used to assess transparency might not fully capture its impact on performance (Kaufmann et al., 2009). Therefore, while the literature generally supports the significance of transparency, this study's findings highlight the need for further investigation into how transparency is operationalized and its practical effects in different contexts. Future research could explore these nuances to better understand how transparency influences performance and to refine strategies for its effective implementation.

4.5.2 Accountability Practices and Performance

The coefficient for accountability practices is 0.362 with a standard error of 0.055, leading to a standardized Beta of 0.557. The t-value of 6.576 and a significance level of 0.000 indicate that Accountability Practices have a strong positive and statistically significant effect on the performance of the medical supply chain. This result points to the critical role of accountability in enhancing organizational performance, as evidenced by its strong impact. These findings are consistent with existing empirical literature that highlights the positive effects of accountability on organizational outcomes. Accountability practices are known to improve performance by ensuring that all stakeholders are answerable for their actions and decisions, thereby fostering a culture of responsibility and integrity (Becker & Huselid, 1998; Gelfand et al., 2017). For example, Becker and Huselid (1998) demonstrate that accountability mechanisms in procurement processes lead to better performance outcomes by promoting transparency and reducing opportunities for misconduct.

Further, research by Gelfand et al. (2017) indicates that strong accountability frameworks are associated with enhanced organizational performance due to their impact on employee behavior

and organizational trust. Accountability practices facilitate effective monitoring and evaluation, leading to better decision-making and improved operational efficiency. The significant positive effect of Accountability Practices in this study aligns with these findings, suggesting that the implementation of robust accountability mechanisms is crucial for optimizing the performance of the medical supply chain. These results reinforce the value of developing and maintaining effective accountability structures to ensure that procurement processes are managed efficiently and ethically.

4.5.3 Integrity Procurement Practices and Performance

The coefficient for Integrity Procurement Practices is -0.014 with a standard error of 0.097 , yielding a standardized Beta of -0.015 . The t -value of -0.143 and a significance level of 0.886 indicate that Integrity Procurement Practices do not have a statistically significant effect on the performance of the medical supply chain. This finding suggests that, within the context of this study, integrity practices may not have a direct or substantial impact on performance outcomes. This result is somewhat inconsistent with the broader body of literature that emphasizes the importance of integrity in procurement processes. Integrity is widely recognized as a fundamental component of effective procurement management, as it helps to mitigate corruption, enhance trust, and ensure ethical conduct (Gibbon & Vickery, 2017; Vian, 2008). For instance, Gibbon and Vickery (2017) argue that integrity in procurement practices fosters a more transparent and accountable environment, which can lead to improved organizational performance and reduced risk of corruption.

Similarly, Vian (2008) highlights that integrity practices are crucial in preventing procurement fraud and ensuring that procurement processes are conducted fairly and ethically. The

expectation is that strong integrity measures should enhance performance by promoting fairness and reducing unethical behavior. The lack of a significant effect in this study may be attributed to several factors. It is possible that the specific integrity practices assessed were not adequately implemented or were not sufficiently comprehensive to affect performance meaningfully. Additionally, the measures used to capture integrity practices might not fully encompass the complexity of how integrity influences procurement outcomes (Kaufmann et al., 2009). Thus, while the literature supports the significance of integrity in enhancing procurement performance, the findings of this study suggest that the relationship might be more nuanced and context-dependent. Further research could explore different dimensions of integrity practices and their implementation to better understand their impact on performance.

4.5.4 Professional Procurement Practices and Performance

The coefficient for Professional Procurement Practices is 0.450 with a standard error of 0.134, which translates to a standardized Beta of 0.405. The t-value of 3.354 and a significance level of 0.001 indicate a statistically significant positive impact of Professional Procurement Practices on performance. This finding suggests that enhanced professionalism in procurement practices is associated with improved performance outcomes in the medical supply chain. This result aligns well with existing empirical literature that points to the importance of professionalism in procurement. Professional procurement practices are crucial for ensuring that procurement processes are managed efficiently, ethically, and in accordance with best practices. Studies have demonstrated that professionalism in procurement can lead to better supplier relationships, more effective contract management, and overall improved organizational performance (Monczka et al., 2015; Kraljic, 1983).

Monczka et al. (2015) highlight that professional procurement practices contribute to higher performance levels by enhancing procurement efficiency, reducing costs, and fostering better strategic alignment with organizational goals. Similarly, Kraljic (1983) emphasizes that a professional approach to procurement helps in managing risks and optimizing procurement strategies, which in turn enhances performance. The significant positive effect found in this study suggests that organizations that invest in developing their procurement professionals and adhere to high standards of professionalism are likely to see better performance outcomes. This supports the literature's emphasis on the value of professionalism in procurement as a key driver of organizational success. Thus, the findings point to the importance of professional development and adherence to best practices in procurement as essential components for achieving superior performance in the medical supply chain.



Mount Kenya

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a comprehensive synthesis of the research findings, drawing on the analysis presented in the previous chapters. This chapter begins with a summary of the key results and insights gained from the study, highlighting the main patterns and trends observed. It then moves on to draw conclusions based on the evidence, addressing the research objectives and examining the implications of the findings for the medical supply chain in Kenya. Finally, the chapter offers practical recommendations for improving procurement practices, grounded in the study's results, and suggests areas for future research to build upon the insights gained. This concluding section aims to provide actionable guidance for stakeholders and contribute to the ongoing discourse on enhancing procurement performance through ethical and professional practices.

5.2 Summary of the Result Findings

The descriptive statistics for the study variables reveal generally positive perceptions among respondents. Transparent Procurement Practices has an overall mean of 4.189 and a standard deviation of 0.852, indicating a strong and somewhat variable view of transparency's impact. Accountability Practices shows a mean of 3.961 with a standard deviation of 0.962, reflecting favorable views with moderate variability. Integrity Procurement Practices has a mean of 4.124 and a standard deviation of 0.815, suggesting a strong perception of integrity, though responses vary. Professional Procurement Practices reports a mean of 4.168 and a standard deviation of 0.803, highlighting a positive and consistent perception of professionalism. For Performance, the mean is 4.102 with a standard deviation of 0.786, indicating a generally positive and consistent view of performance outcomes influenced by procurement practices. These statistics collectively

point to the importance of procurement practices in shaping performance, with some differences in how these practices are perceived and experienced.

In terms of regression analysis results, Accountability Practices has a coefficient of 0.362 with a standardized Beta of 0.557 and a significance level of 0.000, indicating a strong positive and statistically significant effect on performance. Professional Procurement Practices also has a coefficient of 0.450 with a standardized Beta of 0.405 and a significance level of 0.001, also showing a significant positive impact on performance. Transparent Procurement Practices has a coefficient of 0.006 with a standardized Beta of 0.009 and a significance level of 0.918, indicating no significant effect on performance. Similarly, Integrity Procurement Practices has a coefficient of -0.014 with a standardized Beta of -0.015 and a significance level of 0.886, suggesting no significant impact on performance. These statistics highlight that Accountability and Professional Procurement Practices are key drivers of performance, while Transparent and Integrity Procurement Practices do not significantly influence performance in the context of this study.

5.3 Conclusions

The analysis reveals that transparent procurement practices do not significantly impact the performance of the medical supply chain. This finding suggests that while transparency is a key element of effective procurement, its direct influence on performance outcomes may be limited. Transparency in procurement typically involves clear processes and open communication, which are essential for fostering trust and accountability. However, the lack of a significant impact in this study implies that transparency alone might not be sufficient to drive performance improvements. Instead, it is likely that other procurement practices or external factors contribute more substantially to performance outcomes. This could include factors such as the efficiency of

procurement processes, the effectiveness of accountability mechanisms, or the professionalism and expertise of procurement staff. The results highlight the need for a more comprehensive approach to procurement, where transparency is integrated with other critical practices to achieve meaningful enhancements in supply chain performance. Future research might explore how transparency interacts with these other factors to better understand its role and optimize its contribution to performance.

The results demonstrate a substantial and statistically significant positive effect of accountability practices on performance within the medical supply chain. This highlights that implementing effective accountability mechanisms is crucial for enhancing performance outcomes. Accountability practices ensure that procurement activities are conducted with transparency and responsibility, which helps in identifying and addressing inefficiencies, reducing fraud, and maintaining high standards of ethical behavior. The significant positive impact points to the importance of having robust accountability frameworks in place, which include clear roles, responsibilities, and procedures for monitoring and evaluating procurement activities. This reinforces the notion that accountability is not just a regulatory requirement but a fundamental component of successful procurement management. Establishing strong accountability practices will enable organizations can better manage their resources, improve operational efficiency, and ultimately achieve better performance outcomes. The findings advocate for the prioritization of accountability in procurement strategies to drive improvements and sustain high performance in the supply chain.

The findings indicate that integrity procurement practices do not significantly affect the performance of the medical supply chain, despite their theoretical importance. Integrity in procurement involves adherence to ethical standards, transparency, and honesty, which are

essential for maintaining trust and avoiding corruption. However, the results suggest that integrity alone does not translate into measurable improvements in performance within this context. This outcome may point to the need for integrating integrity practices with other critical procurement elements to achieve meaningful performance enhancements. For instance, while integrity ensures that procurement processes are ethical, it may require reinforcement through effective accountability mechanisms, transparent procedures, and professional expertise to fully realize its potential impact on performance. The results point to the importance of a holistic approach where integrity is combined with other robust practices to optimize procurement outcomes. Future research could explore how the interaction between integrity and these additional factors influences performance, offering a more nuanced understanding of how to leverage integrity within procurement strategies effectively.

The analysis reveals a significant positive effect of professional procurement practices on performance, indicating that higher levels of professionalism are strongly associated with better performance outcomes. This finding points to the critical role of professionalism in procurement processes, highlighting that expertise, adherence to best practices, and a commitment to high standards significantly enhance supply chain effectiveness. Professional procurement practices encompass not only technical skills and knowledge but also the ethical and procedural rigor necessary to navigate complex procurement environments. The strong positive relationship between professionalism and performance emphasizes that organizations benefit substantially from investing in skilled procurement professionals who adhere to established standards and practices. This result aligns with existing literature that consistently highlights the importance of professional conduct in procurement, suggesting that professional standards are vital for achieving optimal outcomes in supply chain management. The findings advocate for a focus on

professional development and adherence to best practices as key strategies for improving procurement performance and overall supply chain efficiency.

5.4 Recommendations for Practice

5.4.1 Authorities for Implementation

Given the significant positive impact of accountability and professionalism on performance, it is essential for authorities to prioritize these aspects in their procurement frameworks. Authorities should establish and enforce comprehensive accountability mechanisms within procurement processes, including clear roles, responsibilities, and oversight procedures. This could involve setting up robust audit trails, regular performance reviews, and transparent reporting systems to ensure procurement activities adhere to high standards. In addition, authorities should invest in professional development programs for procurement staff to enhance their skills and adherence to best practices. This could include certification programs, continuous education, and training workshops to maintain high standards of professionalism and expertise in procurement.

5.4.2 Service Users/Beneficiaries

For service users and beneficiaries, including healthcare providers and supply chain managers, the focus should be on advocating for and participating in procurement processes that emphasize accountability and professionalism. Users should actively engage in monitoring procurement practices and provide feedback on their effectiveness. They should also support initiatives aimed at improving transparency and accountability in procurement, such as participating in public procurement forums and ensuring that procurement decisions align with ethical standards. Further, beneficiaries should seek to build strong relationships with procurement professionals

who demonstrate a high level of expertise and professionalism, thereby contributing to more effective and efficient procurement outcomes.

5.4.3 Other Stakeholders

Other stakeholders, including suppliers, procurement consultants, and industry associations, should collaborate to promote best practices in procurement. Suppliers should adhere to ethical standards and engage in transparent practices to foster trust and mutual respect within the supply chain. Procurement consultants and industry associations can play a vital role by providing guidance, resources, and advocacy for the adoption of accountability and professionalism standards. They should also facilitate networking opportunities and knowledge sharing among procurement professionals to support ongoing improvements in procurement practices. Stakeholders should work together to create a culture of integrity and professionalism in procurement, which will ultimately enhance supply chain performance.

5.5 Recommendations for Further Research

Future research should explore the interactions between different procurement practices to better understand their combined effects on performance. Specifically, studies could investigate how transparency and integrity practices work together with accountability and professionalism to influence procurement outcomes. In addition, longitudinal studies examining the long-term impact of professional development programs on procurement performance could provide valuable insights. Research should also consider sector-specific factors that might affect the relationship between procurement practices and performance, such as variations in regulatory environments and organizational structures. Finally, comparative studies across different countries or industries could offer broader perspectives on best practices and strategies for optimizing procurement performance.

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APPENDICES

APPENDIX I: LIST OF SAGAS UNDER THE MINISTRY OF HEALTH IN KENYA

- 1) Kenyatta National Hospital (KNH)
- 2) Moi Teaching and Referral Hospital (MTHR)
- 3) Kenyatta University Teaching Research and Referral Hospital (KUTRRH)
- 4) Kenya Medical Research Institute (KEMRI)
- 5) Kenya Medical Supplies Authority (KEMSA)
- 6) Kenya Medical Training College (KMTC)
- 7) National Health Insurance Fund (NHIF)
- 8) National Syndemic Diseases Control Council (NSDCC)
- 9) National Cancer Institute of Kenya (NCI-Kenya)
- 10) Medical Practitioners and Dentist Council (KMPDC)
- 11) The Mathari National Teaching and Referral Hospital (MNTRH)
- 12) Nursing Council of Kenya (NCK)
- 13) Kenya Nuclear Regulatory Authority (KNRA)

Source: Health Sector Working Group Report (2021)

APPENDIX II: INFORMED CONSENT FORM

My name is Maurice Juma Atiende. I am a Master of Science in Procurement and Supplies Management student. I am conducting a research study titled “**ETHICAL PROCUREMENT PRACTICES AND PERFORMANCE OF MEDICAL SUPPLY CHAIN IN KENYA**”. This research will be used to examine the effects of ethical procurement practices and performance of medical supply chain in Kenya. This study will review both the theoretical framework and empirical literature to comprehensively analyze the effects of ethical procurement practices on the performance of medical supply chain in Kenya.

Procedures to be followed

Participation in this study will require that I present to you both quantitative and qualitative questionnaires in order to determine your expertise in procurement and supplies management. I will record the information on a Likert scale for analysis.

Voluntarism

You have the right to refuse to participate in this study. Please keep in mind that your participation in this study is entirely voluntary. You may ask questions about the study at any time. You may refuse to respond to any questions and you may stop the interview at any time. You may also stop being in the study at any time without any consequences now or in the future.

Discomforts

If some of the questions are too personal, embarrassing or make you to feel uncomfortable, you may choose to refuse or ignore them. You may also stop the interview at any time.

Confidentiality

The interviews will be conducted in a private setting within your office or a place you are most comfortable with. Your name will not be recorded on the questionnaire. The questionnaires will be kept in a locked cabinet for safe keeping at Mount Kenya University. Everything will be kept private and only shared with the research study team.

Contact Information

If you have any questions about the study, call my Supervisor Dr. Jackson Ndolo on telephone number +254 723699889 or the Post Graduate Coordinator, Nairobi Campus, Dr. Isaac Mokono Abuga on telephone number +254 720 062505.

Participant's Statement

The above information regarding my participation in the study is clear to me. The study has been explained to me and I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time.

Name: - _____

Designation: - _____

Signature: _____ Date: - _____

Investigator's Statement

I, the undersigned, have explained to the participant in a language s/he understands, the procedures, and the reasons for this study.

Name of Interviewer: -

Signature: -

Date: -

	regarding the shortcomings in their bid documents.					
5	Procurement decisions are based on a competitive bidding process, and all potential bidders are given equal opportunity to participate					
6	Procurement decisions and processes are documented, and these records are available for public scrutiny					
7	There is a clear and transparent process for selecting suppliers, including evaluation criteria and scoring methods					
8	Conflicts of interest are disclosed and managed during the procurement process					
9	Your organization ensure that procurement decisions are based on value for money and quality rather than cost alone					
10	There are mechanisms in place to prevent fraud, corruption, or favoritism in procurement					
11	Your organization engage in supplier diversity efforts to promote fairness and inclusion in procurement practices					
12	There is a code of conduct that governs the behavior of both employees and suppliers during the procurement process					
13	Your organization has a whistleblower protection mechanism in place					
14	The firm's procurement decisions are subject to internal and external audits					
15	The firm's tenders and contracts are posted in the Public Procurement Information Portal for public scrutiny					
16	Your organization's procurement practices are transparent and fair					

6. Please indicate the degree to which your organization has implemented accountability practices in procurement.

Very great extent; 4) Great extent; 3) Moderate extent; 2) Little extent; 1) No extent”

	Accountability Practices in Procurement	5	4	3	2	1
1	The procurement employees are familiar with the concept of accountable procurement practices					
2	Your organization has established procurement policies and procedures that emphasize accountability					
3	The firm's procurement policy is regularly reviewed and updated to ensure accountability in line with the best practices and regulations					

4	There is a formal process for assessing and managing risks associated with procurement activities					
5	Your organization ensure that procurement decisions are consistent with established rules and guidelines					
6	There are clear accountability mechanisms in place for all personnel involved in procurement process					
7	Your organization has a system to track and report on the performance of suppliers and contractors					
8	There are established key performance indicators (KPIs) to measure the accountability of the procurement process.					
9	There is a dedicated team or officer responsible for ensuring accountability in the procurement process.					
10	There are mechanisms in place to encourage employees to report any irregularities or unethical behavior in procurement.					
11	Your organization regularly reports on procurement activities, including financial data, to demonstrate accountability.					
12	Procurement policies and procedures are communicated effectively to all relevant stakeholders within your organization.					

7. Please indicate the degree to which your organization has implemented integrity practices in procurement.

“Very great extent; 4) Great extent; 3) Moderate extent; 2) Little extent; 1) No extent”

	Integrity Practices in Procurement	5	4	3	2	1
1	The firm’s procurement employees are familiar with the concept of integrity practices					
2	Your organization has a documented procurement policy that emphasizes integrity					
3	Employees in the organization's procurement department have agreed to a moral code of conduct for carrying out their responsibilities.					
4	The firm’s procurement decisions are consistent and aligned with the established rules and guidelines					
5	The firm’s procurement decisions are based on ethical considerations, such as sustainable sourcing.					
6	Your organization has a mechanism for public access to procurement related information to ensure integrity.					
7	The organization's procurement practices are conducted with integrity and ethical considerations.					

8	There are specific barriers in maintaining integrity in the procurement process.					
9	Your organization has implemented separate internal control frameworks to enhance its integrity.					
10	Your organization is aware that public procurement is vulnerable to mismanagement and corruption.					
11	To ensure integrity, your professional behavior must coincide with the goals of the firm you serve.					

8. Please indicate the degree to which your organization has implemented procurement professionalism practices.

“Very great extent; 4) Great extent; 3) Moderate extent; 2) Little extent; 1) No extent”

	Procurement Professionalism Practices	5	4	3	2	1
1	The firm’s procurement professionals are familiar with the concept of procurement professionalism					
2	Your organization has established procurement policies and procedures that emphasize professionalism.					
3	There is a code of conduct governing the behavior of procurement professionals in your organization.					
4	Your organization provide training and development opportunities to enhance the professionalism and expertise of procurement professionals.					
5	Procurement professionals are required to have specific certifications to ensure professionalism and competence.					
6	There are measures in place to minimize the potential risks related to unprofessional behavior in procurement					
7	Your organization recognize procurement as a strategic function.					
8	There is always a contract implementation committee for effective management long-term contracts in your organization.					
9	The procurement function has put in place long and short-term sourcing strategies to achieve efficiency.					
10	Your organization consider supplier selection and management as an important component in supply chain management.					

PART C: SUPPLY CHAIN PERFORMANCE

9) To what degree ethical procurement practices influenced supply chain performance in your firm?

“Very great extent; 4) Great extent; 3) Moderate extent; 2) Little extent; 1) No extent”

Please choose (by ticking) only one option that suits you

	Supply Chain Performance	5	4	3	2	1
1	Procurement employees are familiar with the concept of supply chain performance.					
2	There is established procedures to address and mitigate disruptions in supply during emergencies or supply shortages.					
3	Effective management of supply chain improves customer satisfaction					
4	The personnel of the organization have improved the relationship with suppliers by adhering to the ethical code of conduct.					
5	Operating costs have decreased as a consequence of enhanced supplier management					
6	There is a mechanism for monitoring the accuracy of forecasting to reduce overstock and understock situations.					
7	Your organization ensures that inventory is handled in compliance with regulatory standards and best practices.					
8	Your organization ensures that orders are cost-effective and value for money.					
9	Your organization faces barriers in optimizing the performance of the supply chain.					
10	There are measures in place to minimize the risk of counterfeit or substandard supplies.					

Appendix IV: Letter of Introduction



DIRECTORATE OF GRADUATE STUDIES

MPSM/2022/52430

15th March, 2024

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

Dear Sir/Madam,

RE: MAURICE JUMA ATIENDE- REGISTRATION NO. MPSM/2022/52430

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

The title of the research is **"Ethical Procurement Practices and Performance of Medical Supply Chain in Kenya"** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **March, 2024 and May, 2024**.

Any assistance accorded to the student will be highly appreciated.






Thank you.


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

Enc.

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

Appendix V: NACOSTI Permit

 REPUBLIC OF KENYA National Commission for Science, Technology and Innovation	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 628317	Date of Issue: 13/April/2024
RESEARCH LICENSE	
	
This is to Certify that Mr.. Maurice Juma Atiende of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi, Uasin-Gishu on the topic: ETHICAL PROCUREMENT PRACTICES AND PERFORMANCE OF MEDICAL SUPPLY CHAIN IN KENYA for the period ending : 13/April/2025.	
License No: NACOSTI/P/24/34422	
Applicant Identification Number 628317	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

Appendix VI: ERC Approval



REF: MKU/ISERC/3524
TO: MAURICE JUMA ATIENDE

Date: 14 March 2024

REG: MPSM/2022/52430

Dear Sir/Madam,

RE: ETHICAL PROCUREMENT PRACTICES AND PERFORMANCE OF MEDICAL SUPPLY CHAIN IN KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2568**. The approval period is **14/03/2024 - 13/03/2025**.

This approval is subject to compliance with the following requirements;

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

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

Yours sincerely,

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

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

Appendix VII: Turnitin Report

Project Final 1-Maurice

ORIGINALITY REPORT

19% SIMILARITY INDEX	15% INTERNET SOURCES	5% PUBLICATIONS	10% STUDENT PAPERS
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PRIMARY SOURCES

1	Submitted to Mount Kenya University Student Paper	4%
2	erepository.uonbi.ac.ke Internet Source	2%
3	Submitted to Higher Education Commission Pakistan Student Paper	1%
4	Submitted to Ethiopian Civil Service University Student Paper	<1%
5	ir.jkuat.ac.ke Internet Source	<1%
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