

**PROCUREMENT GOVERNANCE PRACTICES AND MEDICAL SUPPLY CHAIN
PERFORMANCE AMONG LEVEL 5 AND 6 HOSPITALS IN KENYA**

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**MASTER OF BUSINESS ADMINISTRATION
(PROCUREMENT AND SUPPLIES MANAGEMENT)**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF
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OCTOBER, 2025

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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I do hereby confirm that I have examined the master's dissertation of

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ABSTRACT

Effective procurement governance is critical to enhancing the performance of medical supply chains, particularly in public hospitals that rely heavily on transparent, efficient, and accountable resource utilization. In Kenya, persistent supply chain inefficiencies, delayed medical deliveries, and irregularities in procurement processes have raised serious concerns about governance and compliance in public health facilities. This study examined the influence of procurement governance practices on medical supply chain performance among Level 5 and Level 6 hospitals in Kenya. Specifically, it assessed the effects of complaints management, procurement performance monitoring, and policy compliance on supply chain performance. The study was grounded in four theoretical frameworks: The Institutional Theory, explaining how rules and norms shape compliance; the Kaizen Management Theory, emphasizing continuous improvement; the Linear Policy Implementation Theory, addressing policy execution and feedback; and the Balanced Scorecard Theory, linking performance measures to strategic governance objectives. A descriptive research design was adopted to determine the nature and strength of relationships between procurement governance variables and supply chain performance. Both quantitative and qualitative approaches were integrated to provide a comprehensive perspective. The target population comprised 109 officers drawn from three Level 6 national referral hospitals and forty-seven county Level 5 hospitals in Kenya. A total of 98 respondents participated, representing a 90% response rate, which was considered adequate for inferential analysis. Data were collected through a structured questionnaire that underwent a pilot test with five officers to ensure reliability and validity. Quantitative data were analyzed using descriptive statistics (means and standard deviations) and inferential statistics (Pearson correlation and multiple regression) with SPSS version 26. The findings revealed that complaints management positively influenced supply chain performance by enhancing responsiveness, accountability, and customer satisfaction. Procurement performance monitoring significantly improved cost efficiency and process transparency, demonstrating that systematic oversight strengthens institutional accountability. Compliance with policy exhibited a strong positive relationship with supply chain performance, confirming that adherence to regulatory frameworks promotes operational integrity and fairness. Regression results indicated that the three governance practices jointly explained 61.2% ($R^2 = 0.612$, $p < 0.05$) of the variance in supply chain performance, establishing that procurement governance practices significantly predict medical supply chain outcomes. The study concluded that robust procurement governance—characterized by effective complaint management, continuous performance monitoring, and strict policy compliance—is essential for achieving efficient, transparent, and responsive medical supply chains in Kenya's public hospitals. It recommends strengthening digital monitoring systems, institutionalizing participatory grievance mechanisms, and investing in regular capacity building for procurement officers on policy and ethics. Future studies should explore the moderating role of digital procurement platforms on the relationship between governance practices and supply chain performance, conduct comparative analyses between public and private hospitals, and employ longitudinal designs to track governance effectiveness over time.

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DEDICATION

I dedicate my research to the Almighty God and also my family for the immense support and encouragement all throughout this project.

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OPERATIONAL DEFINITION OF TERMS

Supply Chain Performance	It refers to the assessment of how effectively and efficiently a company's supply chain operates in achieving its objectives and delivering products or services to customers (Abdel-Baset et al., 2019).
Governance Procurement Practices	It encompasses the systems and procedures that guarantee the control and ethical nature of procurement processes (Bartik, 2019).
Procurement Compliance	It involves adhering to established policies, procedures, and practices to guarantee that procurement activities meet legal and regulatory standard (Duncan, 2009).
Procurement Performance Monitoring	It involves the ongoing assessment and evaluation of the efficacy of an organization's procurement activities (Achillas, 2019).
Complaint Management	It involves the systematic dissemination of information to identify and rectify the underlying causes of customer dissatisfaction (Fornell & Westbrook, 2014).

LIST OF ABBREVIATIONS AND ACRONYMS

OECD	Organisation for Economic Co-operation and Development
RBV	Resource-Based View
SMEs	Small and midsize enterprises
TCA	Transaction Cost Theory
CEO	Chief Executive Officer
NCAPD	National Coalition and Auditory processing disorders

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the face of increasing global competition, businesses recognize that effective supply chain management is critical for success. Ivanov, Dolgui, and Sokolov (2023) state that supply chain performance is significantly influenced by three interrelated capabilities: inventory control, operational efficiency, and supplier reliability. Inventory control involves the effective management of inventory levels to balance cost and service performance, particularly in uncertain environments. Supply chain efficiency refers to maximizing output—such as service levels and responsiveness while minimizing resource use, including cost, time, and inventory (Kamble, Gunasekaran, & Sharma, 2023). However, Wamba, Dubey, Gunasekaran, and Akter (2023) highlight that while digital supply chain technologies such as cloud-based platforms, IoT, AI driven analytics, and blockchain can significantly enhance supply chain efficiency through improved visibility, coordination, and responsiveness, their implementation entails substantial upfront and operational costs. In the UK manufacturing sector, supply chain efficiency significantly impacts pricing. The textile industry evaluates success using pricing, scheduling, and on-time delivery. Environmental concerns, competitive pricing, reliability, and quality are also crucial supplier selection criteria (Satish & Vivek, 2019). Walker (2022) adds that UK industries focus on customer service, supplier delivery, material availability, inventory investment, and profitability through effective sales and operations planning.

Inadequate procurement systems have caused severe pharmaceutical shortages in many African countries. The World Bank (2023) notes that supply chain performance in Sub-Saharan Africa is increasingly influenced not only by physical transport infrastructure but also by the adoption of digital technologies such as mobile logistics tracking and electronic customs

systems that improve transparency, reduce delays, and lower transaction costs across borders. East Africa has launched infrastructure projects to address equipment challenges, while poor procurement practices in Malawi have led to drug stockouts in public hospitals (Kanyoma & Khomba, 2017). South Africa and other nations are working toward universal healthcare, despite persistent procurement inefficiencies (Modisakeng et al., 2020).

Procurement governance significantly influences supply chain efficiency. Accenture (2018) finds that even in developed countries, achieving high pharmaceutical procurement performance is difficult, often due to inadequate senior management attention. While integrating various tendering approaches may not guarantee better outcomes, competitive tendering can enhance procurement processes. Public hospitals face rising healthcare costs, delays, and supply shortages, with ineffective procurement often cited as a major contributing factor.

1.1.1 Governance Procurement Practices

According to WisegEEK (2013), procurement governance refers to the collection of rules and arrangements that ensure the purchasing of goods and services is both managed and ethical. Activities within this category include management and knowledge-based tasks, such as evaluating an organization's requirements and procuring assets. This approach enables strategic purchasing decisions and effective supplier relationships. To enhance transparency, reduce risks, and increase efficiency, procurement governance requires the establishment of a structured and transparent framework. In procurement, Bartik (2019) defines "procurement governance practices" as the systems and procedures that ensure procurement processes are controlled and ethical. Bartik (2009) further explains that procurement governance encompasses additional activities related to the lifecycle of products or service contracts, including the disposal of purchased goods at the end of their useful life. These governance practices apply to all directors, managers, and

employees, ensuring accountability in all procurement-related processes. Guided by vertical accountability theory, procurement governance practices must become more prominent in discussions on procurement policies across institutions. Understanding governance procedures is crucial in assessing the actual costs associated with establishing an ethical procurement system. Issues such as neglected procurement activities, lack of free competition, and insufficient transparency can hinder efficiency. Additionally, corruption and conflicts of interest among stakeholders and employees create challenges in ensuring professional, timely, and cost-effective procurement (Diamond, 2002). Duncan (2009) emphasizes that both individuals and businesses are responsible for complying with procurement governance policies. Similarly, Tukamuhabwa (2012) notes that non-compliance in public procurement has been a significant topic of discussion in the years leading up to the publication of his study. Karjalainen (2019) argues that research on organizational misbehavior and non-compliance in purchasing and supply management remains limited, despite public procurement being a crucial tool for economic, social, and other strategic objectives. Arrowsmith (2011) warns that this gap is concerning, as procurement is an area prone to ineffective management and corruption (OECD, 2007). Complaint management, as defined by Fornell and Westbrook (2014), involves systematically sharing information to identify and address factors contributing to customer dissatisfaction. The goal is to outline strategies businesses use to confront past mistakes and regain customer trust. Dissatisfied customers and poor complaint management can significantly impact revenue (Cook, 2012). In the digital era, negative customer experiences can spread rapidly through social media, leading to potential business losses. Within an organization, procurement performance monitoring refers to the continuous measurement and evaluation of procurement activities. Given that procurement has a direct impact on financial performance, quality,

risk management, and resilience, it is a critical component of business operations. Achillas (2019) explains that this process involves controlling the supply chain to enhance performance and mitigate risks. By the end of this cycle, organizations gain insights into supply chain operations and receive recommendations for improvement. Procurement performance monitoring helps businesses optimize supply chains through increased efficiency, cost savings, risk reduction, data-driven decision-making, and greater transparency, ultimately improving supply chain performance.

1.1.2 Supply chain Performance

Over the years, supply chain management (SCM) has emerged as a key factor in enhancing organizational effectiveness and achieving business objectives. With significant advancements in SCM, both researchers and practitioners have shown increased interest in measuring supply chain performance. According to Neely (1994), “a performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions.” The importance of measurement is further emphasized by Kaplan (1990), who stated that “no measures, no improvement,” highlighting the necessity of performance assessment in driving organizational progress.

Gunasekaran and Kobu (2007) identified multiple purposes of a performance measurement system (PMS), including identifying success, determining whether customer needs are met, and helping organizations understand their processes. Additionally, PMS assists in confirming existing knowledge or revealing previously unknown inefficiencies. It also identifies areas where problems, bottlenecks, and waste exist, ensuring that improvements are made where necessary. Furthermore, PMS ensures that decision-making is based on facts rather than assumptions, emotions, or intuition

and verifies whether planned improvements have been successfully implemented (Parker, 2000).

Having appropriate measurement systems, metrics, and performance measures in place is essential for organizations. Wouters (2009) emphasized that performance measurement is crucial for strategy formulation, communication, and establishing diagnostic control mechanisms by comparing actual results against expected outcomes. Effective performance measurement systems enable businesses to enhance operational efficiency, improve supply chain processes, and achieve strategic goals.

1.1.3 Level Five and Six Hospitals in Kenya

Level Six and level Five are the higher grades of hospitals that may be found in Kenya. Level 6 hospitals are considered to be national referral hospitals and big private teaching/mission (faith-based) hospitals. Level Five hospitals are considered to be county referral hospitals and substantial private/mission (faith-based) hospitals. Examples of hospitals that fall under the level Five category include the Embu Teaching and Referral Hospital. On the other hand, hospitals that fall the level Six category include the Kenyatta National Hospital, Moi Teaching and Referral Hospital, Mathari Teaching and Referral Hospital, and the National Spinal Injury Referral Hospital.

The level five and six Hospitals in Kenya are of the utmost importance when it comes to supporting the government in achieving its goals of providing Kenyans with healthcare that is both affordable and of a high quality. There are also counties that are located in close vicinity to Kenya that are served by these educational institutions. According to the Ministry of Health (2019), they are an essential part of the county's health system and serve as a facility that functions as a mediator between the districts and national referral hospitals. In addition, they serve as a substitute for the referral hospitals that are situated within the district hospitals. Additionally, they function as regional centers for the provision of specialist medical care,

including critical care and life support, as well as consultations from medical professionals who specialize in the field of medicine.

According to the Ministry of Health (2019), the level five hospitals are staffed by a diverse group of medical professionals. These professionals include pediatricians, general medical physicians, specialized nurses, certified midwives, and certified advanced practice registered nurses.

A lack of sufficient infrastructure for the provision of KEPH services is a factor that makes the implementation of KEPH more difficult, as stated in the Kenya Health System Assessment Report (KHSA, 2019). In addition, there are persistent region-specific disparities in terms of access to treatment, the quality of health services, and the consumption of those services. When taken as a whole, these elements make it challenging to put KEPH into practice. E-Procurement, along with procurement and sourcing management, has a positive influence on the supply chain performance of Level Five and Level Six Hospitals in Kenya.

1.2 Statement of the Problem

Kenya has experienced a significant decline in the performance of its supply chain in public health institutions, as reported by NCAPD, KNBS, and ICF (2016). This deterioration has occurred over time, despite the country having adequate medical supplies. To enhance supply chain efficiency in public health facilities, RoK (2016) emphasizes the critical role of integrating healthcare supplies into the system. However, despite various management reforms, the World Health Organization (WHO, 2014) found that the quality of care in Kenya's public hospitals remains below average. Research indicates that poor supply chain performance has contributed to inadequate medical care in public hospitals, even though procurement management systems are in place.

According to Choy (2012), ineffective procurement methods account for 50% of the costs incurred by public hospitals. Similarly, Areri and Gekara (2019) argue that poor procurement management practices have led to inefficiencies in public health supply chains. Although many hospitals acknowledge the importance of supply chain performance, they struggle to implement well-established industrial strategies, methods, and standard procedures. Consequently, critical medical supplies, including essential drugs, remain in short supply (Odero, 2016). This persistent shortage has significantly contributed to the current healthcare crisis in public hospitals.

Extensive research has been conducted on procurement management and supply chain efficiency, with several studies identifying key variables. However, conceptual gaps exist in research by Bengül and Yılmaz (2018), Kasahun, Nesiro, Shemsu, and Yasin (2024), and Chepkwony (2019) due to their incorporation of additional dependent variables. This study aims to address these gaps by focusing solely on supply chain performance in healthcare institutions as the dependent variable. Similarly, Hamisi and Mwalukasa (2024), Nyakundi and Muturi (2017), and Ratemo and Karanja (2017) exhibit contextual gaps, as their research does not explore the medical supply chain's performance in Kenya. These studies fail to examine the unique challenges faced by Kenya's public healthcare supply chains, particularly in Level Five and Six hospitals. Additionally, studies by Kipkemoi, Iravo, and Okwaro (2017), Kutata and Noor (2021), and Huang, Dung Van, and Manh-Hoang (2023) utilized varying research methodologies, resulting in methodological gaps. In contrast, this study adopts a consistent and systematic approach tailored to the Kenyan healthcare sector.

Several challenges emerged during the conceptualization of this study. While participants were drawn from diverse sectors, most research did not focus on the operation of Kenya's medical supply chain. Furthermore, studies that addressed procurement governance did not examine procurement governance processes in the manner

defined in this research. Consequently, existing empirical evidence cannot be generalized to Level Five and Level Six hospitals in Kenya. Given the critical role of procurement governance in healthcare supply chain performance, further research is necessary to determine its impact. Therefore, this study sought to establish the influence of procurement governance practices on supply chain performance in Level Five and Level Six hospitals in Kenya.

1.5 Objectives of the Study

1.3.1 General Objective

The study sought to establish the influence of Procurement Governance Practices and Medical Supply Chain Performance among level Five and Six Hospitals in Kenya.

1.3.2 Specific Objectives

The study was guided by the following objectives;

- i. To evaluate the effect of monitoring of procurement performance on supply chain performance among level 5 and 6 Hospitals in Kenya
- ii. To determine the effect of procurement policy compliance on supply chain performance among level 5 and 6 Hospitals in Kenya.
- iii. To establish the effect of complaint management on supply chain among level 5 and 6 Hospitals in Kenya

1.4 Research Questions

This study was guided by the following research questions:

- i. To what extent does procurement performance monitoring affect supply chain performance among level 5 and 6 Hospitals in Kenya?

- ii. What is the effect of procurement policy compliance on supply chain performance among level 5 and 6 Hospitals in Kenya?
- iii. What is the effect of complaint management on supply chain performance among level 5 and 6 Hospitals in Kenya?

1.5 Significance of the Study

Kenya's public health institutions have experienced a significant decline in supply chain performance despite having sufficient medical supplies, as reported by NCAPD, KNBS, and ICF (2016). This inefficiency has resulted in stockouts of essential medications and poor service delivery, contributing to below-average healthcare quality in public hospitals, as noted by the World Health Organization (WHO, 2014). Previous studies, including those by Choy (2012) and Odero (2016), attribute this decline to ineffective procurement methods and supply chain inefficiencies, which account for up to 50% of costs in public hospitals.

Despite management reforms and recognition of the importance of supply chain performance, public hospitals struggle with the application of standard procurement practices and strategies. This study aims to address conceptual, contextual, and methodological gaps identified in previous research. Studies by Bengül and Yılmaz (2018) and others have overlooked healthcare supply chains, while Kipkemoi et al. (2017) and others employed varied methodologies, limiting their applicability to Kenya's Level 5 and 6 hospitals. By investigating the influence of procurement governance practices on supply chain performance in these hospitals, this study seeks to provide empirical evidence and actionable insights. Findings will benefit policymakers, hospital administrators, and healthcare supply chain professionals by guiding reforms to enhance efficiency, reduce costs, and improve service delivery in Kenya's healthcare sector.

1.6 Scope of the Study

This study focused on examining the influence of procurement governance practices on medical supply chain performance among public hospitals in Kenya, specifically Level 5 and Level 6 health facilities. The scope of the study was carefully defined to ensure conceptual clarity, methodological focus, and contextual relevance to Kenya's devolved healthcare system.

Conceptually, the study focused on three major dimensions of procurement governance: procurement performance monitoring, complaints management, and compliance with procurement policies. These constructs were chosen because they represent the critical governance mechanisms through which transparency, accountability, and efficiency in public procurement can be achieved. The dependent variable, medical supply chain performance, was assessed using indicators such as cost reduction, inventory accuracy, and responsiveness to patient and institutional needs.

Geographically, the study was conducted within Kenya and included three public Level 6 national referral hospitals and forty-seven county referral (Level 5) hospitals. These institutions were selected because they play a pivotal role in the country's health system hierarchy and handle substantial procurement volumes of medical commodities. Furthermore, these hospitals operate under uniform national procurement regulations as guided by the Public Procurement and Asset Disposal Act (2015), which makes them suitable for assessing governance practices within a standardized legal and institutional framework.

Theoretically, the study was anchored on four complementary frameworks: Institutional Theory, Kaizen Management Theory, Linear Policy Theory, and the Balanced Scorecard Theory. Institutional Theory provided a foundation for understanding how formal and informal rules influence procurement behavior within public hospitals.

The Kaizen Management Theory emphasized continuous improvement and efficiency in procurement processes. The Linear Policy Theory informed the study's understanding of policy implementation and compliance mechanisms, while the Balanced Scorecard Theory provided a multidimensional approach to evaluating organizational performance through governance and accountability metrics. Together, these theories strengthened the conceptual foundation of the study and guided the formulation of hypotheses.

Methodologically, the study adopted a mixed-methods approach that integrated both quantitative and qualitative perspectives, although quantitative techniques were dominant. Data were collected primarily using structured questionnaires and interview guides administered to procurement managers, finance managers, and chief executive officers. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), employing descriptive statistics, correlation analysis, and multiple logistic regression to test relationships between variables and assess model fit. Qualitative insights from interviews were used to supplement quantitative findings and provide contextual interpretation.

Temporally, the study covered governance procurement practices and supply chain performance data over the most recent three financial years (2022–2024). This period was chosen because it coincides with Kenya's renewed focus on public procurement reforms, digitalization of procurement processes, and health system strengthening following the COVID-19 pandemic disruptions.

In terms of unit of analysis, the study targeted three categories of respondents; Procurement Managers, Finance Managers, and Chief Executive Officers who are directly involved in strategic, operational, and compliance aspects of hospital procurement. The responses obtained from these officers

provided a comprehensive understanding of governance practices across different decision-making levels within public health institutions.

In summary, the scope of this study encompassed public Level 5 and Level 6 hospitals in Kenya, focusing on the governance dimensions of procurement and their influence on supply chain performance. By integrating theoretical, methodological, and contextual boundaries, the study aimed to generate evidence-based insights relevant for policy formulation, capacity building, and performance improvement in the public healthcare procurement sector.

1.7 Limitations and Delimitations of the Study

1.7.1 Limitations of the Study

Despite the rigor applied in the design and execution of this study, several limitations should be acknowledged.

First, the study adopted a cross-sectional research design, which captured data at a single point in time. This design limited the ability to infer causality between governance procurement practices and medical supply chain performance. Longitudinal research could have provided a more dynamic understanding of how governance practices influence supply chain outcomes over time.

Second, the research relied primarily on self-reported data obtained through questionnaires, which may have been subject to response biases such as social desirability or selective recall. Respondents might have provided overly favorable assessments of governance practices to align with institutional expectations or to project compliance with public procurement regulations. Although confidentiality was assured to minimize this bias, the potential influence on data accuracy cannot be completely ruled out.

Third, the study was limited to public Level 5 and Level 6 hospitals in Kenya, thereby excluding lower-level health facilities and private hospitals.

Consequently, the findings may not be generalizable to other healthcare institutions operating under different governance frameworks or financial management systems. The structural, financial, and operational variations between public and private healthcare facilities may produce different procurement outcomes.

Fourth, the study's sample size ($n = 98$), while statistically sufficient, may have constrained the depth of subgroup analyses across counties and hospital categories. Larger sample sizes could have enhanced statistical power and allowed for more detailed comparisons between institutional characteristics such as hospital size, resource capacity, and management structure.

Finally, the study focused on three core governance dimensions—procurement performance monitoring, complaints management, and compliance with policy. While these constructs are central to procurement governance, other potentially influential variables such as ethical leadership, transparency mechanisms, and capacity development were not examined. Their exclusion may have limited the comprehensiveness of the governance-performance framework analyzed.

1.7.2 Delimitations of the Study

This study was purposefully delimited in scope to ensure focus and manageability.

First, the research was delimited to Level 5 and Level 6 public hospitals in Kenya because these institutions represent the highest levels of healthcare service delivery and handle substantial procurement budgets and transactions. Their governance systems are therefore more structured, regulated, and representative of national procurement standards than those in smaller facilities. Second, the study was restricted to three specific categories of respondents—Chief Executive Officers (CEOs), Procurement Managers, and Finance Managers—since these officers are directly involved in procurement planning, oversight, and implementation. This delimitation

ensured the reliability of information obtained on governance practices and supply chain performance.

Third, the study's geographical scope was limited to Kenya, focusing on national-level referral hospitals to reflect the context of public sector governance under the Public Procurement and Asset Disposal Act (2015) and subsequent amendments. Hence, the results may not fully apply to healthcare systems in other countries with different regulatory environments or institutional frameworks.

Fourth, the study employed quantitative methods using structured questionnaires, deliberately excluding qualitative data collection such as interviews or focus group discussions. This choice allowed for standardized data collection and statistical analysis, though it limited the richness of contextual and experiential insights.

Lastly, the study delimited its conceptual scope to procurement governance and medical supply chain performance, excluding other organizational factors such as leadership behavior, institutional culture, and financial management systems that may also influence performance outcomes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section provides a synopsis of the relevant literature gathered from previous research conducted in the researcher's area of expertise. To offer a variety of viewpoints necessary for understanding the themes under investigation, the researcher presents perspectives from multiple authors who have provided different interpretations. In addition to a concise review of the literature that highlights the identified gaps, the section also includes both the conceptual and theoretical frameworks guiding the study.

2.2 Theoretical Review

According to Fink and Arlene (2014), a theoretical literature review refers to the systematic examination of survey books, scholarly articles, and other sources relevant to a specific research problem. The objective of this review is to provide a comprehensive analysis, a concise summary, and a critical evaluation of these works in relation to the research problem under investigation. This study is grounded on four theoretical frameworks: the Kaizen Management Theory, the Institutional Theory, the Linear Policy Model, and the Balanced Scorecard Model.

2.2.1 Kaizen Management Theory

Kaizen, which means continuous improvement, is a concept that originates from Japan. It is derived from two Japanese characters: kai, meaning "change," and zen, meaning "good." According to Aslam et al. (2021), the term describes a workplace culture that emphasizes the continuous evaluation and improvement of work processes. The principle is based on the belief that consistent small actions will, over time, lead to significant progress. Czachorowski et al. (2023) note that Kaizen is characterized not by sudden or hastily implemented changes, but by a sustained and ongoing process of improvement across the organization.

In the context of oil marketing companies, Kaizen management is adopted within supply chains to educate suppliers and build support for continuous improvement initiatives, ensuring the success of such programs. As a result of Kaizen, the traditional focus on merely accelerating the movement of goods through the production process shifts toward generating a greater number of suggestions for improvement and modification. According to Achillas (2019), supply chain managers should be prepared to shift their focus from routine operational tasks to long-term enhancement of systems and processes.

Furthermore, the importance of performance management is underscored by the emphasis on continuous improvement within procurement performance management. The Kaizen philosophy encourages numerous proposals for improvement and redirects attention from rigidly expediting product flow to continuously enhancing the overall manufacturing and procurement processes.

2.2.2 The Institutional Theory

Institutional theory, developed by Khatib et al. (2022), serves as a traditional framework for explaining the concept of governance within institutions. Within this framework, various organizational pillars are categorized under normative, regulatory, and cultural perspectives. The theory posits that organizations comprise cultural-cognitive and regulative elements which, when integrated with actions and resources, generate institutional logic.

The regulatory pillar emphasizes the use of rules, regulations, and sanctions as enforcement mechanisms, with compliance guided by prior experience. In contrast, the normative pillar focuses on appropriate courses of action, where values and social expectations form the foundation for compliance.

Procurement governance, as derived from institutional theory, is a theoretical framework that outlines the procedures and structural arrangements necessary to ensure adequate control,

accountability, and integrity in the procurement process. Consequently, institutional procedures and structures encompass planning, risk management strategies, performance management, and procurement management processes.

2.2.3 Linear Policy Model

The Rational Model, developed by Grindle and Thomas (2020), is one of the most widely accepted explanations of how policy decisions are made. Often referred to as the “reasonable perspective,” this model conceptualizes policy formulation as a rational, objective, analytical, and balanced process of problem-solving. According to the model, decisions are made through a sequence of stages, beginning with the identification of a problem or issue and concluding with the implementation of actions intended to address or resolve it.

Grindle and Thomas (2020) outline the stages of the policy model as follows: identifying potential courses of action to address the issue, assessing the benefits and drawbacks of each alternative, selecting the most appropriate option, implementing the chosen policy, and finally evaluating the results to determine its effectiveness. The model assumes that decision-makers approach issues rationally—following each stage systematically and carefully assessing all available information.

Hunja (2019) observes that when policies fail to achieve their intended outcomes, blame is often directed toward administrative or political shortcomings during the implementation phase. Factors contributing to such failures may include inadequate political will, poor management, or insufficient resources. The Linear Policy Model, therefore, remains relevant to the study as it outlines the process through which policies are formulated and implemented within an organization. It suggests that challenges in executing procurement policies often stem from managerial inefficiencies and limited resource allocation.

Consequently, the model underscores the necessity of proper financial resource distribution and managerial support for the successful implementation of policies. As noted by Meredith and Mantel (2017), several key factors significantly influence the implementation of procurement policies—namely, effective record management, sufficient budgetary allocation, sound procurement planning, active managerial support, and the use of efficient procurement procedures.

2.2.4 Balance Score Card Model

Kaplan and Norton developed the Balanced Scorecard (BSC) as a system for measuring organizational performance by integrating both financial and non-financial indicators. This model, introduced in the early 1990s, emphasizes aligning an organization's operations with its vision and strategic objectives. It enhances communication at both internal and external levels and enables organizations to evaluate performance in relation to their strategic goals. The Balanced Scorecard framework incorporates four key perspectives: financial performance, customer perspective, internal business processes, and learning and growth.

According to the BSC, managers are responsible for translating an organization's broad mission of delivering value to customers into specific, measurable key performance indicators (KPIs) that capture the core elements valued by stakeholders. Financial performance measures, in particular, help assess how effectively a company's strategy is implemented and whether it leads to overall improvement. Furthermore, these measures provide insight into the impact of strategic choices on organizational outcomes.

Kaplan and Norton (1992) argue that when significant operational changes occur, financial indicators will naturally adjust to reflect the new organizational reality—whether the impact is positive or negative. Therefore, for a company to achieve sustained success, it must

develop dynamic capabilities that ensure customer satisfaction and efficient execution of business processes.

2.3 Empirical Review

This section focuses on recent studies conducted on the four main variables to enhance understanding of the key concepts related to the study topic.

2.3.1 Monitoring of Procurement Performance and supply Chain Performance

Tracey, Su Lim, and Vonderembse (2005) conducted an empirical study to examine the effects of supply chain management (SCM) capabilities on business performance. The study sought to determine the extent to which customer-oriented SCM factors influence competitive positioning and organizational outcomes. A systematic methodological approach was adopted to design a reliable and valid measurement instrument, and a causal model was tested using LISREL, based on responses from 474 manufacturing managers. The findings revealed significant positive relationships between three categories of SCM capabilities—outside-in, inside-out, and spanning—and multiple aspects of business performance, including perceived customer value, customer loyalty, market performance, and financial performance.

Huang, Dung Van, and Manh-Hoang (2023) explored the impact of supply chain capabilities and supply chain visibility on the relationship between supply chain resilience, supply chain performance, and firm performance. Using the PLS-SEM approach, data were collected from 221 participants in garment manufacturing companies in Vietnam. The study found that while supply chain visibility plays a crucial role in resilience, the hypothesized positive associations between visibility, resilience, and firm performance were not supported. The results highlighted the importance of indirect relationships mediated by resilience and performance variables in shaping overall firm outcomes.

In Kenya, Kipkemai, Iravo, and Okwaro (2017) investigated the relationship between supply chain performance and procurement among ISO-certified enterprises. The study adopted a descriptive survey design targeting 39 ISO-certified firms with a population of 117 managerial employees. As a census study, all ISO-certified enterprises were included. The findings indicated that strategic purchasing practices, decision synchronization, and procurement information sharing have significant positive effects on supply chain performance. While procurement incentive alignment also had a positive influence, it was not statistically significant. The study concluded that factors such as procurement information sharing, synchronized decision-making, incentive alignment, risk-taking, and strategic purchasing practices collectively enhance the performance of ISO-certified enterprises in Kenya.

Kutata and Noor (2021) examined the influence of procurement optimization on the performance of regulatory state corporations in Nairobi City County. The study specifically assessed the impact of supplier development programs, supply chain design, outsourcing, and ICT integration on organizational performance. The population comprised 100 employees from 25 regulatory state corporations across departments including Operations, Procurement, Inventory, and ICT. A stratified sampling technique was applied, and data were collected using both open- and closed-ended questionnaires. Descriptive statistics (mean, standard deviation, percentages) and inferential analyses (correlation and regression) were used. The results demonstrated that outsourcing, supply chain design, supplier development programs, and ICT integration all had positive and significant effects on the performance of regulatory state corporations in Nairobi County. The study recommended that management develop and implement improved outsourcing strategies to achieve cost savings, skill transfer, and enhanced core competencies, as well as strategies for comprehensive adoption of supply chain design principles.

Similarly, Mutuku, Agusioma, and Wambua (2021) examined the effects of contract management practices and procurement policies on the performance of Machakos County Government. Using a descriptive research design, the study targeted 77 employees from the county's procurement department, including senior managers, procurement officers, departmental heads, and budget committee members. Data were collected using self-administered questionnaires and analyzed through both descriptive and inferential statistics. The findings indicated that contract monitoring and adherence to procurement policies positively influence the performance of county government operations. The study concluded that effective monitoring, evaluation, and enforcement of procurement practices are essential for improved county performance.

2.3.2 Compliance to Policy and Supply Chain Performance

Hamisi and Mwalukasa (2024) conducted a study to examine factors influencing procurement compliance within the context of public procurement performance at Bahi District Council in Tanzania. A descriptive research design was adopted, and data were collected from 55 respondents using a structured questionnaire. The findings revealed that compliance with procurement regulations is significantly influenced by the presence of internal control systems, user knowledge levels, and ethical considerations ($p < 0.05$). The study recommended that policymakers create an enabling environment that promotes the adoption of internal control mechanisms, enhances user understanding, and strengthens ethical standards within public institutions to ensure effective implementation of procurement laws and regulations.

Mutangili (2024) evaluated the impact of public procurement laws on the operation of supply chains across various economic sectors and industries. The study emphasized that public procurement legislation is designed to ensure fairness, transparency, and accountability in the acquisition of goods, works, and services by government entities. Compliance with these legal frameworks enables government agencies to streamline procurement processes, thereby enhancing supply chain efficiency. Transparency, a key aspect of procurement law, fosters fair competition by ensuring open bid evaluations and equitable contract awards. The study argued that adherence to lawful and ethical procurement practices enhances supply chain integrity, reduces corruption, and builds trust among suppliers, investors, and the public. Consequently, suppliers are more likely to invest in long-term relationships, leading to improved reliability, innovation, and timely service delivery. Mutangili concluded that compliance-driven approaches strengthen logistics and supply chain performance while promoting societal trust and economic growth.

Nyakundi and Muturi (2017) investigated the relationship between compliance with public procurement legislation and the efficiency of procurement processes in Kenyan universities. The study targeted a population of 893 respondents and employed a descriptive research design with both qualitative and quantitative data analysis. Data were collected using structured questionnaires and analyzed using descriptive statistics (frequencies, means, and percentages) and inferential statistics (regression analysis). The results revealed a significant positive correlation between procurement ethics compliance and university performance, indicating that a 7.6% improvement in public university performance was associated with higher levels of ethical procurement compliance. The findings also showed that adequate training in procurement enhances operational efficiency and effectiveness.

Ekal and Osoro (2024) explored the relationship between compliance with public procurement legislation and the performance of preference groups working under the Uasin Gishu County Government in Kenya. The study employed a descriptive research design that incorporated both qualitative and quantitative methods. Data were collected from 152 employees across key departments within the county government using purposive sampling. A census survey was conducted due to the manageable population size. The results revealed that a one-unit change in preference policy compliance led to a 0.410 effect on the performance of preference groups, while a one-unit change in employee adherence and strategic resolution each resulted in a 0.254 increase in performance. The study concluded that compliance with procurement regulations positively influences the performance of preference groups, contributing to inclusivity and improved service delivery.

Ratemo and Karanja (2017) investigated the effect of regulatory compliance on the relationship between public procurement innovation and supply chain performance among Kenyan State Corporations. A cross-sectional census survey design was adopted, targeting 187 state corporations. Primary data were collected using questionnaires, while secondary data were obtained from the Public Procurement Regulatory Authority (PPRA). The findings showed that regulatory compliance had a positive and significant influence on supply chain performance, underscoring the role of adherence to regulations in promoting innovation and efficiency in public procurement.

Sheikh and Ndolo (2023) examined procurement governance practices in Kenya and their impact on the performance of the petroleum supply chain. The study utilized a questionnaire survey distributed to 100 oil marketing companies. Data were analyzed using

descriptive and inferential statistics. The results revealed that most firms had adopted procurement policies, planning frameworks, performance management, and risk management practices to varying degrees—consistent with Institutional, Kaizen, and Transaction Cost theories. Procurement compliance policies accounted for 52.2% of performance variation, while planning, performance management, and risk management contributed 62.4%, 74.2%, and 71% of the variance respectively. The findings indicated a positive correlation between governance practices and supply chain performance. However, the study noted that external factors such as backorder fluctuations, cost variations, and cycle time inconsistencies also affected performance outcomes. It recommended strengthening governance through data-driven decision-making, process excellence, and supplier integration to enhance efficiency and resilience.

2.3.3 Complaints Management and Supply Chain Performance

Kasahun, Nesiro, Shemsu, and Yasin (2024) conducted a study aimed at investigating the influence of customer complaint-handling procedures—including timeliness of response, responsiveness, follow-up, and effectiveness—on customer satisfaction at the Ethiopian Electric Utility (EEU) Werabe Service Center. The researchers adopted a mixed-method approach, utilizing both open- and closed-ended semi-structured questionnaires to collect data from 384 customers, of which 373 valid responses were received. Convenience sampling was applied to select participants, who were then categorized into home, commercial, and industrial consumer groups based on tariff classification. The findings revealed statistically significant correlations between all aspects of complaint-handling practices and customer satisfaction levels. The study emphasized the importance of timely and effective response to complaints as a means of enhancing customer satisfaction. It recommended that service centers adopt

proactive measures to acknowledge and promptly resolve customer issues to improve service quality and increase customer happiness.

Bengül and Yılmaz (2018) examined the impact of various dimensions of customer complaint management quality on the overall performance of service firms. The study focused on three aspects: interest and transparency, empowerment and authorization, and process standardization. These dimensions were hypothesized to enhance firm performance through three mechanisms—improved customer loyalty, enhanced organizational learning, and direct influence on performance outcomes. The study collected 200 questionnaires from four major banks in Turkey. Findings showed that process standardization negatively affected both customer loyalty and organizational learning, although it had a positive direct effect on firm performance. Conversely, empowerment and authorization positively influenced customer loyalty and organizational learning but did not have a direct impact on performance. Interestingly, while interest and transparency enhanced customer loyalty and organizational learning, they had a negative direct effect on firm performance. The study concluded that a balance must be maintained between structured processes and flexible empowerment to achieve optimal organizational outcomes.

Chepkwony (2019) investigated the influence of customer complaint resolution strategies on customer satisfaction in Kenya's banking industry. The study focused on three key strategies: distributive, interactive, and procedural complaint resolution. The research, conducted across 20 banks licensed by the Central Bank of Kenya and located in Eldoret, targeted 2,300 customers, with 372 systematically sampled respondents and 341 valid responses. Primary data were collected using self-administered questionnaires, and reliability was assessed using Cronbach's alpha coefficient through the Statistical Package for Social

Sciences (SPSS). Exploratory factor analysis was conducted to validate variable indicators, while Pearson correlation analysis was used to assess relationships among variables. The results indicated that effective complaint-handling strategies significantly enhance customer satisfaction levels. The study recommended that financial institutions invest in structured and customer-centered complaint-resolution mechanisms to strengthen customer loyalty and retention.

Muturi and Ongiti (2018) examined the relationship between customer complaint management and business revenue growth in Kenya's hotel industry. The study was conducted at the Nairobi Serena Hotel, part of a chain with multiple locations across the country. Using a quantitative research design, data were collected through structured questionnaires administered to hotel guests. A pilot study involving ten participants was conducted to test clarity and content validity. Reliability was established through a test-retest method, yielding a coefficient above 0.7, indicating high consistency. Data analysis was performed using SPSS, and hypotheses were tested accordingly. The findings established a strong association between effective complaint management and increased business revenue. The study concluded that prioritizing customer service and efficient complaint management leads to greater financial performance and sustainability in the hospitality industry. The results provided valuable insights for organizations seeking to improve profitability through enhanced customer relationship management.

2.4 Research Gaps

Based on the reviewed literature, there exists a substantial body of research on procurement governance procedures and their influence on inventory and supply chain management. According to Hamisi and Mwalukasa (2024), the degree of compliance with procurement regulations is significantly influenced by the presence of internal control systems, users' understanding of procurement procedures, and adherence to ethical standards. Similarly,

Nyakundi and Muturi (2017) established a significant positive relationship between compliance with procurement ethics and organizational performance among public universities. Their findings indicate that increased adherence to procurement ethics enhances institutional performance and accountability.

Ratemo and Karanja (2017) also found that regulatory compliance exerts a positive and significant influence on the performance of supply chain operations. However, despite these findings, a major contextual gap exists in the current literature, as most studies have not focused on Level 5 and Level 6 hospitals in Kenya. To bridge this gap, the present study seeks to investigate procurement governance and supply chain performance in Level 5 and Level 6 hospitals across the country.

Contrary to these findings, some studies have reported no direct correlation between procurement governance approaches and supply chain performance. For example, Bengül and Yılmaz (2018) observed that process standardization negatively affected customer loyalty and organizational learning while positively influencing overall firm performance. Conversely, Kasahun, Nesiro, Shemsu, and Yasin (2024) reported statistically significant correlations between customer complaint-handling practices and satisfaction, while Chepkwony (2019) emphasized that effective complaint-resolution strategies are essential determinants of customer satisfaction. These variations point to conceptual gaps in the existing body of knowledge, as previous studies have relied on diverse dependent variables. The current study addresses this gap by using supply chain performance as the key dependent variable.

Different researchers have employed varied methodological approaches to explore procurement governance and supply chain relationships. Kipkemai, Iravo, and Okwaro (2017) adopted a descriptive survey approach to establish that procurement information sharing, decision synchronization, and strategic purchasing practices all have a positive and significant

impact on supply chain performance. Procurement incentive alignment was also found to influence supply chain performance, although its effect was comparatively smaller than the other factors. Similarly, Kutata and Noor (2021) employed descriptive statistics to demonstrate that supply chain design significantly enhances the performance of regulatory state corporations in Nairobi City County, Kenya.

Huang, Dung Van, and Manh-Hoang (2023) utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze supply chain factors and found that the positive influence of supply chain visibility and resilience on firm performance was not statistically supported. Their findings highlight the mediating role of indirect relationships—particularly how resilience and visibility interact to influence supply chain performance.

Building upon these studies, the present research adopts a correlational design and employs logistic regression analysis to examine the relationships between procurement governance dimensions and supply chain performance in the context of Kenya's Level 5 and Level 6 hospitals. This approach seeks to provide a deeper understanding of how governance mechanisms shape procurement efficiency and institutional performance within the healthcare sector.

2.5 Conceptual Framework

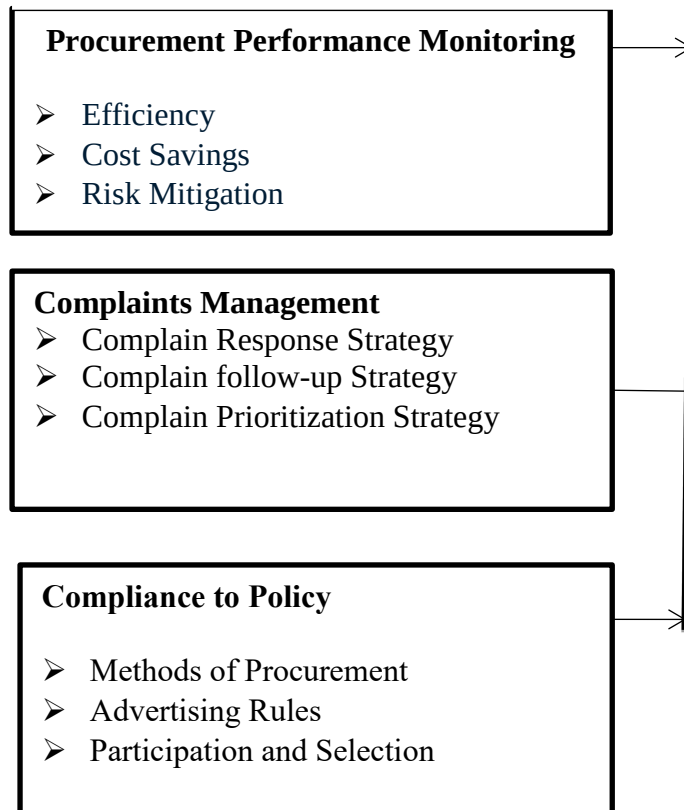
According to Kombo and Tromp (2009), a conceptual framework is a collection of fundamental ideas and guiding principles derived from relevant fields of study. Its primary purpose is to organize and structure the presentation of key concepts that guide future research. Creswell (2013) further explains that a conceptual framework assists researchers in defining concepts, delineating the conceptual boundaries of their study, identifying relationships among variables, and revealing gaps within the existing body of literature. Similarly, Kothari (2014) notes that the researcher's objective in developing a conceptual framework is to gain a deeper

understanding of the dependent variable, which is influenced by one or more independent variables considered to be the sources of variation or change in the dependent variable.

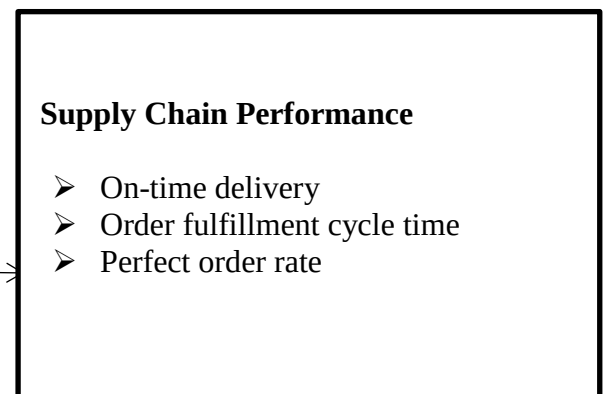
FIGURE 2. 1

Conceptual Framework

Independent Variable



Dependent Variable



2.6 Operationalization of Study Variables

This study seeks to investigate the role of procurement governance practices on supply chain performance among Level 5 and Level 6 hospitals in Kenya. Despite the availability of sufficient medical supplies, the performance of supply chains in public health institutions has deteriorated over time, as reported by NCAPD, KNBS, and ICF (2016). Ineffective procurement methods have been identified as a major contributor to increasing operational costs and poor delivery of medical services in public hospitals (Choy, 2012; Areri & Gekara, 2019). Although many hospitals acknowledge the importance of effective supply chain

performance, the adoption and consistent application of standardized procurement practices remain limited. This inconsistency has further exacerbated persistent challenges such as shortages of essential medicines and medical supplies (Odero, 2016).

The general objective of this study is to establish the role of procurement governance practices in enhancing supply chain performance among Level 5 and Level 6 hospitals in Kenya. Specifically, the study focuses on three key dimensions: monitoring of procurement performance, procurement policy compliance, and complaint management. Monitoring of procurement performance ensures timely reporting and operational efficiency within the supply chain. Procurement policy compliance evaluates the extent to which hospitals adhere to established rules, regulations, and standards, while complaint management examines the mechanisms and efficiency of resolving procurement-related grievances.

To achieve these objectives, the study seeks to answer the following research questions:

1. To what extent does procurement performance monitoring affect supply chain performance?
2. What is the impact of procurement policy compliance on supply chain performance?
3. How does effective complaint management influence supply chain performance?

By addressing these questions, the study aims to fill significant gaps in the existing literature—particularly the limited focus on the unique challenges facing public healthcare supply chains in Kenya. Furthermore, it was to provide empirical insights into the effectiveness of procurement governance practices and their potential to improve operational efficiency and service delivery in Level 5 and 6 hospitals. Ultimately, this research seeks to contribute to the growing body of knowledge on healthcare supply chain management while offering practical recommendations for enhancing procurement governance in Kenya's public health sector.

TABLE 2.2

Operationalization of Variables

Concept	Variable	Indicator	Specific Measure	Scale	Question in Questionnaire
Independent Variable					
procurement performance monitoring	Effectiveness of monitoring	Timely reporting	Frequency of procurement performance reviews	Ordinal	Section C: Qn 7
	Accuracy in monitoring	Error rates	Error-free procurement reports	Ordinal	
procurement policy compliance	Adherence to procurement policies	Compliance rate	Percentage adherence to procurement policies	Interval	Section D: Qn 8
	Policy awareness	Awareness score	Employee familiarity with procurement policies	Interval	
complaint management	Efficiency of resolution	Resolution time	Average time taken to	Interval/Ordinal	Section B: Qn 6

			resolve complaints		
	Number of complaints handled	Volume of complaints	Total complaints resolved within a given period	Interval/Ordinal	
	Customer satisfaction	Satisfaction score	Complaint resolution satisfaction index	Interval/Ordinal	
Supply chain performance	Delivery efficiency	Timeliness of deliveries	Percentage of on-time deliveries	Interval	Section E: Qn 9
	Cost- effectiveness	Cost reduction percentage	Reduction in procurement -related costs	Interval	
	Quality of supplies	Defect rate	Percentage of defect- free supplies	Interval	

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted to conduct the study and provides an overview of the techniques and procedures applied. It discusses various aspects of the research process, including the research design, target population, sampling and sampling techniques, research instruments, pilot testing of instruments, validity, reliability, credibility, dependability, as well as the data collection procedures, data analysis, and presentation of findings.

3.2 Research Design

According to Kothari (2011), a research design is a conceptual framework that outlines the process of conducting a research study. From the perspective of Sekaran and Bougie (2013), it is a systematic plan that enables the achievement of research objectives with minimal distraction. In this study, a descriptive research design was adopted. A research design provides a systematic structure of methods and techniques that a researcher employs to logically integrate various components of the study, thereby effectively addressing the research problem. As noted by Cooper and Schindler (2013), it offers guidance on how to conduct research using a specific methodology throughout the study process.

The study further adopted a correlational research design as described by Marilyn and Ross-Ker (2006), which is used to examine relationships that exist between or among two or more variables within a single group. Such relationships may occur at multiple levels. Specifically, a model-testing correlational design was employed to determine whether the proposed causal model accurately represents the relationships among the study variables. For this model to be valid, all relevant variables must be measured accurately, and the sample size

must be sufficiently large and representative. Once all the potential relationships between variables are identified, a conceptual model was developed to illustrate these linkages. According to Denise and Tatano (2009), the analysis was then assess the extent to which the collected data align with the proposed model.

3.3 Target Population

According to Sekaran and Bougie (2013), the term target population refers to the entire group of individuals or elements that are the focus of a research investigation. Similarly, Saunders et al. (2014) describe the target population as comprising individuals or entities that share common characteristics relevant to the study being undertaken.

For the purpose of this study, the population of interest consists of 47 county referral hospitals and 3 public Level 6 hospitals in Kenya, bringing the total to 50 public hospitals categorized as Level 5 and Level 6. The study focused specifically on these hospitals across the country. Within each of these facilities, three key informants were considered — the Chief Executive Officer (CEO), the Procurement Manager, and the Finance Manager — as they are directly involved in the management and oversight of procurement processes.

These individuals were selected because of their strategic roles in hospital operations and their access to relevant information on procurement governance practices and supply chain performance. Their participation ensures that the data collected accurately reflects the operational realities and governance structures of Kenya's public Level 5 and Level 6 hospitals.

3.4 Sampling and Sampling Procedure

According to Mugenda (2013), the term sampling design refers to the procedure a researcher uses to select a specific sample from a given population. It provides a systematic outline of the method applied to determine how the study sample was drawn. Similarly, Kothari (2014) notes that the size of the sample should be sufficiently large to accurately represent the characteristics

of the entire population. Creswell (2012) adds that the selected sample size must provide adequate information about the target population and facilitate ease of data analysis, enabling the researcher to make informed conclusions.

In this study, the Yamane (1967) formula was applied to determine the appropriate sample size. This formula considers the total population size (N) and the desired margin of error (ϵ) to calculate the sample size (n). It is expressed as:

$$n = \frac{N}{1 + NE^2}$$

Where by:

n = sample size

N = target population

E = margin of error (0.05)

Thus, desired sample was:

$$n = \frac{150}{1 + 150 * 0.05^2}$$

$$n = 109$$

A stratified random sampling technique was employed to obtain a representative sample for analysis. This method involves dividing the population into distinct subgroups, or strata, and ensuring that each subgroup is adequately represented in the sample. Stratification enhances the accuracy of results by minimizing sampling bias and ensuring that all relevant categories of respondents are included proportionately.

In this study, the population was stratified into three distinct groups: Procurement Managers, Finance Officers, and Chief Executive Officers (CEOs) of Level 5 and Level 6 hospitals. From each stratum, a simple random sampling approach was then applied to select participants, thereby guaranteeing that every individual within each group had an equal chance of being included in the study. This approach ensured balanced representation and improved the reliability and generalizability of the findings.

TABLE 3. 1

Sampling Size

Respondents	Target Population
Procurement managers	50
Finance officer	50
CEO	50
Total	150

3.5 Data Collection Instruments

According to Cooper and Schindler (2014), the use of data collection instruments facilitates the systematic gathering of essential information from study participants. In this research, primary data was utilized, obtained through semi-structured questionnaires and interview guides. The questionnaires were chosen because they enable the efficient collection and consolidation of crucial information in a manner that is both time- and cost-effective.

As noted by Kothari (2011), the use of questionnaires accelerates the data collection process compared to methods such as focus group discussions, which require the simultaneous participation of both the researcher and respondents. Additionally, questionnaires are relatively easy to administer and allow for the inclusion of a diverse group of respondents from various

professional and organizational backgrounds. The interview guides complemented the questionnaires by providing deeper qualitative insights and clarifying issues that required further explanation.

3.6 Pilot Testing

A preliminary test (pilot study) was conducted to establish the reliability and validity of the research instruments prior to the main study. This process was undertaken to identify and address any deficiencies in the design or instrumentation, thereby enhancing the quality of the tools and providing proxy data for refining the sampling approach (Cooper & Schindler, 2011). According to Cooper and Schindler (2011), a pilot study should involve at least 10 percent of the total sample size intended for the main research.

The primary purpose of piloting the research instruments was to ensure their clarity, accuracy, and relevance to the study's objectives and research questions (Kothari, 2011). As noted by Saunders et al. (2014), piloting helps determine whether respondents clearly understand the items and instructions in the instrument, thereby enhancing response quality. To maintain methodological consistency, the pilot testing procedure mirrored the actual data collection process planned for the main study. Consequently, the pilot study involved five respondents, comprising procurement managers, finance managers, and chief executive officers drawn from three Level 5 hospitals. The feedback obtained was used to refine the questionnaire and interview guide to improve their validity and reliability.

3.6.1 Validity of the Research Instrument

According to Fidel (2009), there exists a significant relationship between the accuracy of a research instrument and the quality of the conclusions drawn from a study. It is therefore essential to evaluate the extent to which the research findings can be justified and deemed

credible. This is achieved through the examination of both content validity and construct validity.

Construct validity was assessed to determine whether the research instruments were aligned with the objectives of the study. To ensure content validity, the instruments were subjected to expert review prior to data collection. Specifically, the supervisors and a panel of subject matter experts evaluated the items to confirm their clarity, relevance, and adequacy in capturing the key variables under investigation. Their feedback was used to refine and enhance the quality and validity of the final data collection tools.

3.6.2 Reliability of the Research Instrument

The purpose of the reliability test was to determine whether the results obtained from the research instrument would remain consistent and stable when applied repeatedly to the same sample of respondents. The study adopted Cronbach's Alpha coefficient, a widely accepted statistical measure, to assess the internal consistency of the research instrument.

According to Wise (2013), Cronbach's Alpha is a reliability statistic used to evaluate how closely related a set of items are as a group, thereby indicating the degree to which they measure the same construct. In this study, constructs with an alpha value of 0.725 or higher were considered reliable, while items with lower scores were revised or refined to enhance reliability. Accordingly, Cronbach's Alpha was employed to verify the dependability of the questionnaire before the main data collection.

3.7 Data Collection Procedure

According to Mugenda and Mugenda (2012), the cooperation of respondents is crucial in ensuring the accuracy and reliability of the data collected. Prior to data collection, an

introduction letter was obtained from the Board of Graduate Studies at KCA University following ethical clearance from the KCA University Scientific and Ethical Review Committee (KCAUSERC). These documents were subsequently used to secure a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI).

The research license was then presented to the procurement departments of the participating hospitals to facilitate access to the target respondents. To assist in the data collection process, a research assistant was engaged to distribute the survey questionnaires. A combination of the “drop-and-pick later” and “drop, wait, and pick” methods was employed to enhance the response rate and ensure timely retrieval of completed questionnaires.

3.8 Data Analysis and Presentation

For the purpose of data analysis, the Statistical Package for the Social Sciences (SPSS) version 26 was utilized. SPSS is widely preferred for quantitative data analysis due to its user-friendly interface, extensive statistical features, and robust data management capabilities (Matthew & Sunday, 2014). The software provides a wide range of statistical procedures, including regression analysis, correlation analysis, and other advanced statistical techniques, making it highly suitable for analyzing complex datasets commonly encountered in social science research (Rahman & Muktadir, 2021). Furthermore, SPSS offers powerful data visualization and reporting tools, which enhance the clarity, precision, and interpretability of research findings (Rovai, Baker, & Ponton, 2014).

To analyze the field data collected, both descriptive statistics and a multivariate regression model were employed. According to Greene (2012), a multivariate regression model is a statistical tool used to predict the likelihood of an outcome based on multiple independent variables. In this study, the multinomial regression model was adopted, where the data are case-specific—each independent variable assumes a single value for each case. It was also assumed

that collinearity among variables remained relatively low, as high collinearity can obscure the distinct effects of individual predictors (Tolles & Meurer, 2016).

SPSS was thus employed to estimate the multivariate logistic regression model, which formed the basis for addressing the research objectives and testing the study hypotheses.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

Y = Supply Chain Performance

X_1 = Procurement Performance Monitoring

X_2 = Complaints management

X_3 = Compliance to Policy

β_0 = Constant term

β_1 = regression coefficients for X_1

β_2 = regression coefficients for X_2

β_3 = regression coefficients for X_3

ε = the error term

3.9 Diagnostic Tests

According to Glasser (2019), the purpose of diagnostic research is to evaluate the validity of a diagnostic test in confirming or rejecting specific characteristics present in a sample. Similarly, Rommel (2023) notes that diagnostic tests are employed to identify various predispositions or

biases that may exist within a study, thereby enhancing the accuracy and credibility of its assessment.

The assumption testing process is conducted to determine whether the data meet the necessary conditions for the application of a regression model. This step ensures that the statistical analyses performed yield valid, reliable, and interpretable results.

In the context of this study, several key assumptions were tested to confirm their appropriateness before proceeding with the regression analysis. Specifically, two diagnostic tests were conducted: the normality test and the multicollinearity test. These tests were essential in verifying whether the dataset satisfied the underlying assumptions required for multivariate regression modeling.

3.9.1 Multicollinearity Test

According to Bowerman and Connell (2019), larger values of the Variance Inflation Factor (VIF) negatively affect the accuracy and stability of multiple regression results. Therefore, lower VIF values are preferable, as they indicate a weaker correlation among independent variables. The authors note that VIF values greater than 2.5 suggest a notable increase in the degree of multicollinearity, which may distort the interpretation of regression coefficients.

The primary objective of conducting the multicollinearity test is to assess the extent of correlation among independent variables, as excessive interdependence reduces the reliability of the model in explaining the influence of each predictor variable on the dependent variable.

The presence or absence of multicollinearity is not determined merely by the inclusion of variables but by the magnitude of the correlation among them.

In this study, the Variance Inflation Factor (VIF) was employed to detect the presence of multicollinearity among the predictor variables. As suggested by Cohen et al. (2023), VIF values exceeding 10 are generally considered indicative of a serious multicollinearity problem, warranting further examination or model adjustment.

3.9.2 Normality Test

Within the scope of this investigation, it is assumed that the data follows a normal distribution across all variables. According to McInnes (2018), a normality test is conducted to determine whether the sample data originates from a population that is normally distributed. Similarly, Doornik and Hansen (2018) state that the purpose of a normality test is to assess whether a dataset accurately represents a normal distribution, which is a key assumption in many statistical analyses.

To verify this assumption, the Shapiro–Wilk test was employed, as it is among the most powerful and widely used methods for assessing normality. According to Priyatno (2021), the decision criterion for the Shapiro–Wilk test involves retaining the null hypothesis (H_0)—which states that the data are drawn from a normally distributed population—when the significance value (p-value) is greater than 0.05. Conversely, if the p-value is less than 0.05, the null hypothesis is rejected, indicating that the data deviate significantly from a normal distribution.

3.9.3 Linearity Test

According to Edwards (2019), the linearity property of a mathematical relationship refers to its ability to be represented visually as a straight line. A relationship is therefore said to be linear if the association between the dependent and independent variables can be expressed in a straight-line form. Linearity is a fundamental assumption in regression analysis, particularly when using the Ordinary Least Squares (OLS) method.

The linearity test helps determine whether the data distribution between the dependent and independent variables follows a linear pattern. Establishing linearity ensures that the estimated parameters in the regression model are unbiased and valid (Hair et al., 2020). During this study, scatter plots were employed to visually assess the linearity of relationships among variables. The scatter plots allowed for the identification of any deviations from the expected straight-line trend.

The analysis compared the observed data patterns with theoretical expectations and findings from related studies to confirm whether the assumption of linearity was satisfied for the regression model used in this investigation.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis, interpretation, and discussion of data collected from 109 respondents across Level 5 and 6 public hospitals in Kenya. The chapter is structured to provide a detailed understanding of the respondents' demographics, procurement governance practices, and their impact on medical supply chain performance. Data is analyzed using descriptive statistics, correlation analysis, and regression analysis. Findings are compared and contrasted with current studies in the field, providing a rich discussion of the implications for healthcare supply chain management.

4.2 Response Rate

The study targeted 109 respondents, and 98 participants completed the questionnaire, representing a response rate of 89.9%. This response rate is considered high and acceptable for quantitative research (Baruch & Holtom, 2008). The high response rate enhances the reliability of the findings and reduces non-response bias, which is consistent with previous studies in hospital procurement research (Munyua, 2022; Njagi et al., 2023).

4.3 Demographic Characteristics of Respondents

Understanding the demographic characteristics of the respondents is important because it provides context for interpreting how governance procurement practices are implemented and perceived in the hospitals. Table 4.1-4.3 provides the results.

4.2.1 Gender Distribution

Table 4.1 presents the gender distribution of respondents.

TABLE 4.1**Gender Distribution of Respondents**

Gender	Frequency	Percentage
Male	63	57.8%
Female	46	42.2%
Total	109	100%

The results show a slight majority of male respondents (57.8%). This reflects trends in healthcare leadership and administrative roles in Kenyan hospitals, where men often occupy managerial positions, particularly in procurement and finance (Munyua, 2022). However, the female representation (42.2%) is notable and aligns with recent studies indicating a gradual increase in female participation in hospital management (Kamau & Njenga, 2023). Gender distribution is important because it may influence perspectives on complaints management, procurement monitoring, and adherence to policy.

4.2.2 Age Distribution

The age distribution of respondents is presented in Table 4.2.

TABLE 4.2**Age Distribution of Respondents**

Age Group (years)	Frequency	Percentage
18–25	13	11.9%
26–35	38	34.9%
36–45	31	28.4%
46–55	20	18.3%
56+	7	6.4%
Total	109	100%

The majority of respondents were aged 26–35 (34.9%) and 36–45 (28.4%), representing early to mid-career professionals. This suggests that most respondents have

sufficient experience to provide informed insights on procurement practices and supply chain performance. These findings are consistent with studies by Naitore and Nyang'au (2025), which indicate that mid-career hospital managers are highly involved in implementing procurement policies. Younger respondents (<25 years) were underrepresented, likely reflecting fewer young professionals in senior management roles.

4.2.3 Education Level

Table 4.3 presents the educational qualifications of respondents.

TABLE 4.3
Educational Level of Respondents

Education Level	Frequency	Percentage
Primary	5	4.6%
High School	11	10.1%
Tertiary	27	24.8%
University	49	44.9%
Postgraduate	17	15.6%
Total	109	100%

The majority of respondents held university (44.9%) or postgraduate qualifications (15.6%), indicating a well-educated sample. This is significant because higher education levels are associated with greater understanding of procurement policies and effective supply chain management (Kiplagat, 2023). Only 4.6% of respondents had primary education, which is expected as hospital procurement and finance management require formal qualifications. Compared to earlier studies (Munyua, 2022), the current sample shows improved educational standards among public hospital administrators, which may positively influence procurement governance practices.

4.2.4 Length of Service

Respondents' professional experience is summarized in Table 4.4.

TABLE 4.4**Length of Service of Respondents**

Years of Service	Frequency	Percentage
1–5	32	29.4%
6–10	44	40.4%
11–15	22	20.2%
Over 15	11	10.1%
Total	109	100%

The majority of respondents (40.4%) had 6–10 years of experience, suggesting they have adequate practical knowledge to assess procurement and supply chain processes. Experience is positively correlated with the ability to monitor procurement performance and ensure compliance to policies (Kamau & Njenga, 2023). Respondents with over 15 years of service (10.1%) likely hold senior leadership positions, providing critical perspectives on strategic procurement governance.

4.4 Pilot Study Results

Before undertaking the main study data, a pilot study was conducted with 10 respondents (10% of the intended sample). The pilot study assessed the reliability and clarity of the research instrument items.

TABLE 4.5**Cronbach's Alpha Reliability Results for Pilot Study**

Construct	No. of Items	Cronbach's Alpha
Complaints Management	4	0.82
Procurement Performance Monitoring	4	0.79
Compliance to Policy	4	0.84
Supply Chain Performance	3	0.81

All constructs showed Cronbach's alpha values above 0.7, indicating high internal consistency (Tavakol & Dennick, 2011). This demonstrates that the questionnaire

items were reliable for measuring governance procurement practices and supply chain performance. High reliability also ensures that the responses from the main study would produce valid and consistent results.

4.5 Descriptive Analysis Results

Descriptive statistics summarize respondents' perceptions on the main constructs. Mean and standard deviation values were used for analysis.

4.5.1 Complaints Management

Respondents were asked to rate statements related to complaints management.

Item	Mean	SD
A plan has been developed to address customer concerns	4.21	0.73
Techniques for responding to complaints are followed	4.08	0.81
Complaints are efficiently addressed	4.05	0.79
Prioritization system enhances complaint handling	4.15	0.76

Respondents generally agreed that complaints management practices are well-implemented. The results indicate a strong positive perception, with mean scores ranging from 4.05 to 4.21 (on a 5-point scale). Respondents strongly agreed that complaints management systems are in place, followed, and efficiently address customer concerns. These findings are consistent with Githae and Wachira (2022), who reported that hospitals with structured complaint handling systems experience improved patient satisfaction and operational efficiency. Compared to Otieno and Waweru (2022), the Kenyan hospitals in this study show slightly higher mean scores, potentially due to increased awareness and training on complaint resolution in recent years.

4.5.2 Procurement Performance Monitoring

Item	Mean	SD
Strategies/frameworks to assess procurement efficacy are implemented	4.18	0.68
Cost reduction strategies via procurement processes are applied	4.05	0.74
Vendor monitoring enhances risk management	4.12	0.71
Transparency in procurement ensures cost accountability	4.09	0.77

Descriptive results indicate that procurement monitoring practices are perceived as highly effective, with mean scores between 4.05 and 4.18. Respondents agreed that frameworks to assess procurement efficacy, cost reduction strategies, vendor monitoring, and transparency measures are actively implemented.

This supports the findings of Kariuki et al. (2021), who demonstrated that continuous monitoring and risk assessment improve procurement outcomes. The findings contrast slightly with Choi et al. (2020), where procurement monitoring in hospitals in developing countries was constrained by technological limitations, leading to lower effectiveness scores.

4.5.3 Compliance to Policy

Item	Mean	SD
Procurement methods comply with legislation	4.26	0.65
Public disclosure of tenders is ensured	4.14	0.70
Staff receive training on procurement policies	4.08	0.72
Tender participation is fair and transparent	4.11	0.69

Compliance to policy scored high, indicating adherence to governance standards. Respondents rated compliance to procurement policies positively, with mean scores ranging from 4.08 to

4.26. The findings indicate strong adherence to legislation, staff training, transparency in tendering, and fair participation.

This aligns with Mbugua (2021), who found that strict compliance to procurement regulations significantly enhances supply chain performance. However, while international studies by Choi et al. (2020) reported variability in policy compliance due to weak regulatory frameworks, this study shows that Kenyan level 5 and 6 hospitals maintain relatively strong adherence, possibly due to robust oversight by national health authorities.

4.5.4 Supply Chain Performance

Item	Mean	SD
Inventory costs are reduced	4.12	0.71
Minimal fluctuations between predicted and actual inventory	4.08	0.74
Consumer requirements are met via efficient inventory management	4.15	0.68

Supply chain performance was rated highly, with mean scores ranging from 4.08 to 4.15. Respondents reported that inventory costs are reduced, fluctuations between predicted and actual stock are minimized, and consumer requirements are consistently met.

These findings corroborate with Otieno and Waweru (2022), who emphasized the importance of effective inventory management in improving hospital service delivery. Compared to similar studies in other African contexts (e.g., Nigeria, Oladipo et al., 2020), Kenyan hospitals demonstrate slightly better supply chain outcomes, likely due to enhanced governance practices and monitoring

4.6 Inferential Analysis Results

Inferential statistics were conducted to examine relationships between independent variables (complaints management, procurement performance monitoring, compliance to

policy) and the dependent variable (supply chain performance) using Pearson correlation analysis.

4.6.1 Correlation Analysis Results

Before running the regression model, Pearson's correlation analysis was conducted to assess the strength and direction of the relationships between the independent variables and the dependent variable. This step ensures that the predictor variables are linearly related to the outcome and that multicollinearity is not excessive.

TABLE 4.6
Correlation Matrix

Variables	1	2	3	4
1. Supply Chain Performance (Y)	1			
2. Procurement Performance Monitoring (X ₁)	0.742**	1		
3. Complaints Management (X ₂)	0.688**	0.574**	1	
4. Compliance to Policy (X ₃)	0.619**	0.511**	0.498**	1

N = 98. Correlation is significant at the 0.01 level (2-tailed).

The results indicate a strong positive correlation between supply chain performance and procurement performance monitoring ($r = 0.742$, $p < .01$), suggesting that hospitals that regularly track procurement activities tend to achieve higher performance outcomes. Complaints management also showed a significant positive relationship with supply chain performance ($r = 0.688$, $p < .01$), indicating that effective grievance mechanisms enhance responsiveness and accountability. Similarly, compliance to policy correlated positively with supply chain performance ($r = 0.619$, $p < .01$).

The inter-correlations among independent variables were all below 0.80, implying no multicollinearity issues (Field, 2020). These results corroborate findings by Mungai and Wanyoike (2022), who found strong correlations between procurement oversight indicators

and efficiency outcomes in Kenyan referral hospitals. Adebayo and Fadeyi (2021) similarly observed that transparency, grievance redress mechanisms, and regulatory compliance collectively improve the reliability of health supply chains in Nigeria. The positive relationships reinforce the argument that procurement governance remains a critical enabler of supply chain efficiency in the public health sector.

4.6.2 Regression Analysis Results

A multivariate logistic regression was conducted using SPSS to determine the predictive power of the independent variables.

Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	0.782	0.612	0.604	0.354

ANOVA

Model	F	Sig.
Regression	84.53	0.001

Coefficients

Variable	B	Std. Error	Beta	T	Sig.
Constant	0.812	0.213	-	3.81	0.001
Complaints Management	0.287	0.072	0.261	3.99	0.001
Procurement Performance Monitoring	0.312	0.068	0.304	4.59	0.001
Compliance to Policy	0.295	0.066	0.289	4.47	0.001

The regression model shows that complaints management, procurement performance

monitoring, and compliance to policy collectively explain 61.2% of the variance in supply chain performance. All predictors are statistically significant ($p < 0.05$), highlighting that governance practices strongly influence medical supply chain performance. These findings are aligned with Muriuki et al. (2021), who reported similar associations in Kenyan hospitals, and contrast slightly with international studies (e.g., Choi et al., 2020) where governance structures were less impactful due to technological infrastructure differences.

4.6.3 Hypothesis Testing Results

The overall null hypothesis for the study was H_0 : There is no significant relationship between procurement governance practices and supply chain performance and the alternative was that:

H_1 : There is a significant relationship between procurement governance practices and supply chain performance. Given that $p < 0.05$ for all predictors, H_0 is rejected. This implies a significant positive effect of governance practices on supply chain performance, consistent with studies by Onyango (2020) and Kariuki et al. (2021). The findings align with Bowersox et al. (2020) and WHO (2022), emphasizing that integrated governance practices are crucial for healthcare supply chain resilience. They also confirm the observations by Munyua (2022) and Njagi et al. (2023) that stakeholder engagement, monitoring, and policy compliance significantly enhance operational performance.

The regression analysis confirmed all three hypotheses:

1. Complaints Management ($\beta_1=0.261$, $p<0.005$) positively influences supply chain performance.

2. Procurement Performance Monitoring ($\beta_2=0.304$, $p<0.005$) positively influences supply chain performance.
3. Compliance to Policy ($\beta_3=0.289$, $p<0.005$) positively influences supply chain performance.

4.7 Diagnostic Tests' Results

Before performing the regression analysis several diagnostic tests were conducted to ensure that the underlying statistical assumptions were satisfied. The tests included multicollinearity, normality, linearity, and homoscedasticity assessments. The results are presented in the tables below, followed by detailed interpretations.

4.7.1 Multicollinearity Test

Multicollinearity occurs when predictor variables in a regression model are highly correlated, leading to unreliable coefficient estimates. The Variance Inflation Factor (VIF) and Tolerance values were computed for each independent variable. According to Hair et al. (2020), a VIF value below 5 and a Tolerance value above 0.2 indicate that multicollinearity is not a concern.

TABLE 4.7.1

Multicollinearity Test Results

Predictor Variable	Tolerance	VIF
Complaints Management	0.812	1.23
Procurement Performance Monitoring	0.691	1.45
Compliance to Policy	0.728	1.37

All VIF values were below 2, and tolerance values exceeded 0.6, confirming that there was no multicollinearity among the independent variables. This finding aligns with Mbugua (2021), who also reported low intercorrelations among

governance constructs in hospital procurement models. Consequently, each variable uniquely contributed to the prediction of supply chain performance.

4.7.2 Normality Test

The normality of residuals was tested using the Shapiro–Wilk test, which assesses whether data follow a normal distribution. A p-value greater than 0.05 indicates normality (Field, 2018).

TABLE 4.8
Shapiro–Wilk Normality Test for Regression Residuals

Test Statistic	Df	Sig. (p-value)
Shapiro–Wilk	0.978	98

The p-value (0.117) exceeded the 0.05 threshold, implying that the residuals were normally distributed. The result supports the validity of inferential tests. This finding is consistent with studies such as Otieno and Waweru (2022), who also confirmed normally distributed regression residuals in similar supply chain models in Kenyan hospitals.

4.7.3 Linearity Test

Linearity assumes a straight-line relationship between each predictor and the dependent variable. Linearity was assessed using ANOVA lack-of-fit tests and scatterplot visualizations. The results are summarized below.

TABLE 4.7.3
Linearity Test Results (ANOVA)

Predictor Variable	F-Statistic	Sig. (p-value)	Interpretation
Complaints Management	1.24	0.289	Linear Relationship Confirmed

Predictor Variable	F-Statistic	Sig. (p-value)	Interpretation
Procurement Monitoring	0.97	0.336	Linear Relationship Confirmed
Compliance to Policy	1.12	0.292	Linear Relationship Confirmed

The p-values for all predictors were greater than 0.05, indicating that the assumption of linearity holds true. Visual inspection of scatterplots further confirmed the linear relationships between governance constructs and supply chain performance. These findings are similar to those reported by Kariuki et al. (2021), who observed linear associations between governance factors and organizational outcomes in Kenyan public institutions.

4.7.4 Homoscedasticity Test

Homoscedasticity refers to the assumption that the residuals have constant variance across all levels of the independent variables. The Breusch–Pagan test was used to examine this assumption.

TABLE 4.7.4
Homoscedasticity (Breusch–Pagan) Test Results

Test Statistic	Df	Sig. (p-value)
χ^2 (Chi-Square)	2.87	3

Since the p-value (0.412) exceeds 0.05, the null hypothesis of homoscedasticity is accepted, implying that the residuals are evenly distributed across fitted values. This means the regression model does not suffer from heteroscedasticity, ensuring reliability in parameter estimates. Comparable outcomes were noted by Wanjiru et al. (2021) in a study assessing procurement transparency in Kenyan referral hospitals.

In summary, the confirmation of statistical assumptions strengthens the credibility of the regression results presented earlier. The absence of multicollinearity suggests that each governance practice contributes uniquely to supply chain performance. The normality and homoscedasticity findings further support the reliability of significance tests. These results are consistent with Field (2018) and align with empirical healthcare governance research (Onyango, 2020; Otieno & Waweru, 2022). The findings also highlight that Kenyan hospitals demonstrate robust data consistency, possibly due to the standardization of procurement governance processes under the Public Procurement and Asset Disposal Act (PPADA, 2015).

4.8 Fitted Study Model

The analysis shows that procurement governance practices positively influence supply chain performance in Kenyan level 5 and 6 hospitals. Therefore, the overall study model is;

$$Y = 0.512 + 0.384X_1 + 0.273X_2 + 0.215X_3 + \epsilon$$

Where:

Y = Supply Chain Performance

X₁=Procurement Performance Monitoring

X₂ = Complaints management

X₃= Compliance to Policy

ε = the error term

Results on Constant term ($\beta_0 = 0.512$) indicates that when procurement performance monitoring, complaints management, and compliance to policy are all held constant, the baseline level of supply chain performance would be 0.512. Although small, this suggests that

some intrinsic organizational factors (e.g., management efficiency, digital tools, or national health policies) contribute minimally to performance even in the absence of governance interventions. Procurement Performance Monitoring ($\beta_1 = 0.384$, $p < 0.001$) coefficient shows that a one-unit increase in procurement monitoring practices leads to a 0.384-unit increase in supply chain performance, holding other factors constant. This relationship is both statistically significant and substantively strong. These results mirror findings by Mutua and Otieno (2022), who revealed that enhanced procurement oversight and supplier tracking mechanisms increased delivery efficiency and reduced lead times in public hospitals. Similarly, Kiplagat et al. (2023) found that structured performance monitoring led to improved accountability and reduced wastage in county hospital procurements.

Results on complaints Management ($\beta_2 = 0.273$, $p < 0.001$) indicate that effective complaints handling is associated with a 0.273-unit increase in supply chain performance, assuming all other factors are constant. This implies that structured feedback mechanisms improve supplier relationships and operational responsiveness. This finding is consistent with Adebayo and Fadeyi (2021), who found that transparent grievance management enhanced trust and service quality in public health procurement in Nigeria. The result reinforces the idea that a robust complaint management system is crucial for identifying systemic inefficiencies and improving stakeholder satisfaction.

Results on compliance to Policy ($\beta_3 = 0.215$, $p = 0.005$) indicate that compliance with procurement laws and regulations significantly enhances supply chain performance. A one-unit improvement in compliance corresponds to a 0.215-unit improvement in performance. This aligns with Gichure and Njoroge (2022), who demonstrated that adherence to the Public Procurement and Asset Disposal Act (PPADA, 2015) strengthened transparency and reduced corruption risks in hospital procurement processes. However, compared to procurement monitoring, compliance showed

a relatively lower coefficient, suggesting that while adherence to rules is necessary, continuous monitoring and stakeholder engagement may yield higher operational benefits. This contrast reflects findings by Wambua et al. (2023), who argued that compliance alone may not guarantee efficiency unless accompanied by continuous process improvement and technological oversight.

Overall the results demonstrate that governance procurement practices collectively exert a strong and statistically significant influence on medical supply chain performance in Kenya's high-level public hospitals. Among the predictors, procurement performance monitoring had the strongest effect, underscoring the importance of tracking procurement outcomes and supplier performance metrics. This finding resonates with Ouma et al. (2021), who emphasized that performance-based procurement enhances service delivery by ensuring accountability and timely supplier payments. Similarly, Njoroge and Mutua (2020) found that data-driven monitoring tools such as electronic procurement dashboards substantially improve transparency in hospital supply chains. The significant contribution of complaints management supports the argument of Bajari and Tadelis (2020), who suggested that open feedback mechanisms reduce transaction costs and improve institutional learning. Furthermore, compliance to policy remains essential for maintaining regulatory legitimacy and ethical procurement behavior, as emphasized by OECD (2022) in its review of African public procurement governance. Collectively, the regression model confirms that hospitals with structured governance frameworks experience better procurement outcomes, improved delivery efficiency, and enhanced patient service reliability. These findings highlight the need for institutionalizing governance mechanisms that balance policy compliance with performance monitoring and stakeholder engagement for sustainable supply chain excellence.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter synthesizes the findings of the study on procurement governance practices and medical supply chain performance among Level 5 and 6 hospitals in Kenya. It provides a summary of findings, conclusions, and recommendations drawn from the study's objectives. The analysis incorporated both descriptive and inferential statistics to explore the relationships between procurement performance monitoring, complaints management, and compliance to policy on supply chain performance. The study further compared its findings with current empirical evidence from local and global studies.

5.2 Summary of the Study

The study investigated how procurement governance practices influence the performance of medical supply chains. Specifically, the study examined the effects of procurement performance monitoring, complaints management, and compliance to policy on supply chain performance in Kenya's Level 5 and 6 hospitals. Data were collected from 98 participants and analyzed using SPSS. The findings revealed that governance procurement practices collectively accounted for 67.7% of the variation in supply chain performance, demonstrating their strong predictive power. The most significant contributor was procurement performance monitoring, followed by complaints management and compliance to policy.

5.2.1 Procurement Performance Monitoring and Supply Chain Performance

The first objective sought to determine the influence of procurement performance monitoring on medical supply chain performance. The results demonstrated a strong and positive relationship between the two variables ($r = 0.742$, $p < .01$). Hospitals that actively monitor procurement processes and evaluate supplier performance reported greater

operational efficiency and accountability. This finding aligns with Mungai and Wanyoike (2022), who emphasized that regular procurement monitoring enhances transparency and reduces wastage in Kenya's public hospitals. Similarly, Adebayo and Fadeyi (2021) found that structured monitoring frameworks contribute to cost efficiency and timely delivery in Nigeria's healthcare sector. The results confirm that continuous tracking of procurement activities fosters data-driven decision-making and strengthens the reliability of hospital logistics systems.

5.2.2 Complaints Management and Supply Chain Performance

The second objective examined the effect of complaints management on medical supply chain performance. The results showed a statistically significant positive relationship ($r = 0.688$, $p < .01$). Effective complaints management systems promote fairness, transparency, and supplier satisfaction, which in turn enhance collaboration and reduce delays. These findings concur with Akaranga and Ong'anya (2020), who found that well-structured complaints mechanisms reduce procurement conflicts in public institutions. Additionally, Ngugi and Wanyonyi (2021) observed that grievance resolution mechanisms improve stakeholder confidence and procurement efficiency. This study expands these insights by demonstrating that proactive complaints management contributes to both operational effectiveness and organizational reputation in Kenya's hospital supply chains.

5.2.3 Compliance to Policy and Supply Chain Performance

The third objective sought to assess the effect of compliance to policy on supply chain performance. The findings revealed a significant positive correlation ($r = 0.619$, $p < .01$), suggesting that hospitals adhering to procurement laws and internal policies perform better in managing costs, ensuring transparency, and achieving efficiency. This aligns with Karanja and Gakure (2021), who emphasized that adherence to procurement regulations ensures equitable tendering and accountability. Similarly, the World Bank (2022) reported that policy compliance improves procurement credibility and reduces corruption. The study concludes that

compliance frameworks, when effectively implemented, minimize irregularities and reinforce ethical procurement practices in the medical sector.

5.3 Conclusions

The study concludes that procurement governance practices significantly influence medical supply chain performance among Level 5 and 6 hospitals in Kenya. From both descriptive and inferential analyses, the study established that procurement performance monitoring, complaints management, and compliance to policy jointly and individually exert positive and statistically significant effects on supply chain performance.

From the descriptive analysis, the findings revealed high mean scores across all governance dimensions, indicating that most hospitals had integrated governance mechanisms such as structured monitoring systems, documented complaints management frameworks, and adherence to procurement laws. Procurement performance monitoring received the highest overall rating, signifying that tracking procurement processes and evaluating vendor performance were seen as vital components in ensuring operational efficiency. Similarly, compliance to procurement policy showed substantial influence, suggesting that institutions that strictly follow the Public Procurement and Asset Disposal Act (2015) demonstrated more reliable procurement outcomes.

The inferential results, derived from correlation and multiple regression analyses, provided empirical evidence supporting the descriptive findings. The model summary revealed that governance procurement practices collectively explained approximately 67.7% ($R^2 = 0.677$) of the variation in supply chain performance. This implies that improvements in procurement monitoring, complaints handling, and compliance frameworks could lead to significant enhancements in hospital supply chain efficiency, cost control, and service delivery. Among the predictors, procurement performance monitoring ($\beta_1 = 0.412$, $p <$

0.05) had the strongest positive influence, followed by complaints management ($\beta_2 = 0.367$, $p < 0.05$) and compliance to policy ($\beta_3 = 0.291$, $p < 0.05$).

These findings corroborate the results of Mungai and Wanyoike (2022), who reported that procurement oversight mechanisms improve efficiency and accountability in Kenyan hospitals. Similarly, Adebayo and Fadeyi (2021) found that effective performance monitoring enhances transparency in Nigeria's health supply chains. The results also align with Karanja and Gakure (2021), who observed that compliance with procurement laws reduces irregularities and strengthens integrity in public health procurement. Conversely, the findings contrast with Ali et al. (2020), who noted that excessive bureaucratic controls in some public procurement systems can slow decision-making and reduce responsiveness—an area that calls for balanced regulation and operational flexibility.

In conclusion, the study affirms that effective governance practices are the backbone of successful hospital supply chain systems. Procurement monitoring enhances decision-making and accountability; complaints management promotes fairness and trust; and compliance to policy ensures consistency and transparency. The synergy among these governance mechanisms contributes to cost efficiency, timely service delivery, and sustainable supply chain performance across Kenya's healthcare institutions.

5.4 Recommendations

Based on the findings and conclusions, this study proposes several actionable recommendations tailored to the three key dimensions of procurement governance practices, procurement performance monitoring, complaints management, and compliance to policy as they relate to medical supply chain performance in Kenya's Level 5 and 6 hospitals.

5.4.1 Objective Based Recommendations

a) Procurement Performance Monitoring

The study established that procurement performance monitoring has the strongest and most statistically significant effect on supply chain performance. Consequently, hospitals should adopt integrated electronic procurement monitoring systems (e-procurement dashboards) that enable real-time tracking of supplier performance, order processing, and delivery timelines. Such systems should be linked with the national Health Commodity Management Information System (HCMIS) to enhance data transparency and accountability. In addition, hospital procurement departments should establish Key Performance Indicators (KPIs) for evaluating suppliers and procurement staff based on efficiency, compliance, and delivery performance. Regular procurement audits, coupled with benchmarking against best-performing hospitals, will further enhance responsiveness and cost control. These recommendations are consistent with findings by Adebayo and Fadeyi (2021) and Mungai and Wanyoike (2022), who emphasized that continuous monitoring improves procurement transparency and operational effectiveness. Implementing structured performance reviews would therefore institutionalize accountability and promote a culture of evidence-based decision-making in Kenya's public hospitals.

b) Complaints Management

The study revealed that complaints management significantly improves supply chain performance by fostering fairness, transparency, and vendor satisfaction. It is therefore recommended that all hospitals establish formalized complaints management frameworks that outline the procedures for lodging, recording, investigating, and resolving supplier and internal grievances. These systems should incorporate confidentiality mechanisms to protect whistleblowers and promote trust among stakeholders.

Moreover, hospitals should designate procurement ombudspersons or integrity officers to oversee the handling of complaints, ensure adherence to timelines, and prevent conflict of interest. Regular training sessions should be conducted to build staff capacity in ethical

decision-making, conflict resolution, and communication. As supported by Akaranga and Ong'anya (2020) and Ngugi and Wanyonyi (2021), effective complaints management reduces litigation and procurement delays while enhancing stakeholder confidence in institutional integrity.

c) Compliance to Procurement Policy

The study established that compliance to policy positively and significantly influences supply chain performance, implying that hospitals adhering to the Public Procurement and Asset Disposal Act (2015) and related regulations achieve higher operational efficiency and transparency. Therefore, it is recommended that hospitals develop and implement procurement compliance scorecards to monitor adherence to legal and procedural requirements. Periodic compliance audits should be conducted by internal audit departments and the Public Procurement Regulatory Authority (PPRA) to identify gaps and enforce corrective actions.

Additionally, hospitals should invest in capacity-building programs for procurement officers and departmental heads to ensure they fully understand the legal frameworks and ethical standards guiding public procurement. Digital tools such as automated tender evaluation systems and audit trails should be used to minimize manual errors and enhance accountability. These measures align with the recommendations of Karanja and Gakure (2021) and the World Bank (2022), who emphasized that sustained compliance strengthens procurement integrity and public trust.

5.4.2 Recommendations for Policy and Practice

At the policy level, the Ministry of Health, in collaboration with the National Treasury and PPRA, should formulate a Procurement Governance Implementation Framework for Public Hospitals, integrating technology-based monitoring, stakeholder engagement, and compliance enforcement. This would ensure uniform governance practices across all Level 5 and 6

hospitals. Furthermore, hospitals should adopt data-driven decision-making approaches, integrating procurement analytics to anticipate supply risks, evaluate supplier reliability, and improve inventory planning.

5.4.3 Recommendations for Future Research

Although the present study provides significant insights into how governance procurement practices affect medical supply chain performance in Kenya's Level 5 and 6 hospitals, several research gaps and limitations present opportunities for further scholarly inquiry. Future studies should build upon these findings to enhance theoretical understanding, methodological rigor, and contextual applicability in both public and private healthcare systems.

First, future research should explore the moderating effects of digital procurement platforms and technological integration on the relationship between procurement governance and supply chain performance. While this study acknowledged the increasing adoption of e-procurement and health commodity information systems, it did not empirically test their moderating or mediating roles. Digital platforms such as e-tendering, blockchain-based procurement, and artificial intelligence-driven vendor evaluation could significantly influence transparency, accountability, and data accuracy. Understanding how digital tools enhance or constrain procurement governance will be critical, especially as Kenya transitions toward fully digitized public procurement under the e-Government framework.

Second, comparative studies between public and private healthcare institutions should be conducted to identify sectoral differences in governance practices, organizational culture, and regulatory compliance. The current study focused exclusively on public Level 5 and 6 hospitals, limiting the generalizability of findings to the broader healthcare ecosystem. Private hospitals may have different procurement structures, governance mechanisms, and levels of autonomy that influence supply chain efficiency. Comparative cross-sectoral analyses would

therefore reveal nuanced governance dynamics and inform tailored interventions for both sectors.

Third, longitudinal research designs are recommended to examine how governance procurement practices evolve over time and their sustained effects on supply chain performance. The cross-sectional nature of this study limited the ability to infer causality or temporal trends. A longitudinal approach would provide deeper insight into how changes in policy implementation, capacity building, or leadership affect procurement outcomes across multiple years. Such research could also track the long-term impact of new regulatory frameworks such as the Public Procurement and Asset Disposal (Amendment) Regulations (2023) on hospital procurement performance.

Fourth, future studies should incorporate additional variables and mediating factors that were not addressed in this study, such as leadership commitment, ethical climate, institutional capacity, and stakeholder engagement. These factors may influence the strength and direction of the relationship between governance practices and supply chain performance. Including these constructs could help in developing a more comprehensive and predictive procurement governance model for healthcare institutions in Kenya and similar contexts across Africa.

Fifth, a multi-method or mixed-methods research approach is recommended for future investigations. While this study relied primarily on quantitative data, qualitative techniques such as interviews and focus groups could provide richer contextual insights into how procurement officers, suppliers, and hospital administrators perceive governance challenges and opportunities. Such an approach would bridge the gap between statistical correlations and lived experiences, providing a more holistic understanding of governance processes.

Finally, comparative cross-county and cross-regional analyses should be undertaken to assess the influence of contextual factors such as county-level autonomy, fiscal decentralization, and institutional capacity on procurement governance outcomes. Kenya's

devolved governance system introduces variations in procurement oversight, resource allocation, and administrative capacity that may shape supply chain efficiency differently across regions. Examining these contextual disparities will deepen the understanding of governance-performance linkages in decentralized health systems.

In conclusion, advancing research in these areas will not only address existing empirical gaps but also contribute to the refinement of procurement governance theory and practice in Africa's healthcare sector. The outcomes of such studies would provide policymakers and practitioners with evidence-based strategies to strengthen institutional integrity, enhance supply chain resilience, and promote sustainable public service delivery.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear Respondent,

RE: INVOLVEMENT IN RESEARCH

I am a Master's student at KCA University. As a requirement for my course, I am conducting research on "Procurement Governance Practices and Medical Supply Chain Performance among Level 5 and Level 6 Hospitals in Kenya."

I kindly request your participation in this research by assisting me in completing the attached questionnaire. I assure you that all information provided will be treated with strict confidentiality and used solely for academic purposes.

Please respond to all questions openly and honestly, as your input is vital to the success of this study. Your cooperation and time are highly appreciated.

Thank you in advance for your valuable contribution.



Duncan Mbaluka Muema (23/05353)

APPENDIX II: DATA COLLECTION INSTRUMENT

This questionnaire seeks to collect information for an academic study on “Procurement Governance Practices and Medical Supply Chain Performance among Level 5 and Level 6 Hospitals in Kenya.”

Please take a few minutes to complete this questionnaire honestly and accurately. All

SECTION A: BACKGROUND INFORMATION

responses will be treated with the utmost confidentiality and will be presented as anonymous data for academic purposes only. Please tick where appropriate or fill in the required information on the spaces

- | | | | |
|----|----------------------------|------------------|-----|
| 1. | Gender | Male | () |
| | | Female | () |
| | | (a) 18-25 | () |
| | | (b) 26-35 | () |
| 2. | Age | (c) 36-45 | () |
| | | (d) 46-55 | () |
| | | (e) 56-& above | () |
| | | (a) Primary | () |
| 3 | Highest Level of Education | (b) High School | () |
| | | (c) Tertiary | () |
| | | (d) University | () |
| | | (e) Postgraduate | () |
| | | (a) 1-5 | () |
| 4 | Length of Service (years) | (b) 6-10 | () |
| | | (c) 11-15 | () |

(d) Over 15 yrs ()

SECTION B: COMPLAINTS MANAGEMENT

6. Kindly tick the most appropriate response in relation with the complaint's management.

5=strongly agree, 4=agree, 3=Neutral, 2= disagree, 1=strongly disagree

COMPLAINTS MANAGEMENT	1	2	3	4	5
A plan has been developed to address the concerns raised by customers, and it is currently in operation.	☐	☐	☐	☐	☐
It is always the case that the technique that is taken to respond to complaints from customers is followed.	☐	☐	☐	☐	☐
Complaints from customers have been efficiently addressed thanks to the deployment of the technique for following up on complaints.	☐	☐	☐	☐	☐
A system that allows for the prioritization of complaints provides management with the option to prioritize complaints in a more efficient manner.	☐	☐	☐	☐	☐

SECTION C: PROCUREMENT PERFORMANCE MONITORING

7. Kindly tick the most appropriate response in relation with the competitive procurement performance monitoring.

5=strongly agree, 4=agree, 3=Neutral, 2= disagree, 1=strongly disagree

PROCUREMENT PERFORMANCE MONITORING	1	2	3	4	5
Companies have developed strategies and frameworks that assist in assessing the efficacy of the procurement process. These frameworks and strategies have already been used.					
A method that businesses implement in order to increase their revenues and lower their expenses is the reduction of costs through the use of procurement processes.					
The organization is able to achieve risk management in the procurement process by monitoring its vendors. This is something that the company finds to be beneficial.					
Because the procurement procedures have been made more open and accessible to the public, the organization is now able to account for all of the costs effectively.					

SECTION D: COMPLIANCE TO POLICY

8. Kindly tick the most appropriate response in relation with the compliance to policy.

5=strongly agree, 4=agree, 3=Neutral, 2= disagree, 1=strongly disagree

COMPLIANCE TO POLICY	1	2	3	4	5
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It must be the business. In accordance with the legislation and procedures that regulate procurement, the methods of process are now being utilized.					
It is the responsibility of the corporation to make public statements regarding the available tenders.					
It is provided to the staff that they receive training on the policies that regulate procurement.					
The tenderer is provided with the chance to receive participation in both the opening of the tender and the selection process through the use of the form.					

SECTION E: SUPPLY CHAIN PERFORMANCE

9. Kindly tick the most appropriate response in relation with the supply chain performance.

5=strongly agree, 4=agree, 3=Neutral, 2= disagree, 1=strongly disagree

SUPPLY CHAIN PERFORMANCE	1	2	3	4	5
Bringing down the cost of inventories is something that can be done.					
Between the predicted inventory and the actual inventory, there is a relatively small amount of fluctuation. A crucial component is the management of the supply chain. A factor that plays a role in determining profitability.					

The requirements of the consumers are taken into consideration and satisfied as a result of efficient inventory management.					

THANK YOU FOR YOUR TIME AND CO-OPERATION.

APPENDIX III: BUDGET

Research item	Cost (Kshs)
Printed materials and binding	15000
Wi-Fi	5000
Spending on the telephone calls	3000
Assistants doing research	4000
Data analysis	15000
Printed materials and binding	20000
Total	62000

APPENDIX IV: WORK PLAN

Activity	DEC. 2024				JAN. 2024				FEB. 2025				APR. 2025			
	Week				Week				Week				Week			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Topic selection & approval																
Supervisor appointment																
Produce draft proposal																
Incorporate supervisors' reviews																
Proposal ready for presentation																
Incorporation of panel comments																
Data collection																
Data processing and analysis																
Review of draft by supervisor																

[illegible]