

**E-PROCUREMENT PRACTICES AND ORGANIZATIONAL PERFORMANCE OF
KIAMBU COUNTY GOVERNMENT, KENYA**

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DECLARATION

I certify that this project is entirely original and has not been submitted for a master's degree award at any other university.

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Declaration by the Supervisor

This is to approve that this project was carried out by the candidate under my supervision as university supervisor.

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DEDICATION

This project is dedicated to my loving parents for their spiritual, moral and financial support and my lovely daughter for giving me a reason to work hard to better her future throughout my education course.

ACKNOWLEDGEMENT

In the first place, I'm appreciative and grateful to God all-powerful for the endowment of life and great wellbeing to achieve this proposition without His effortlessness I could not have possibly come this far. Second, I offer thanks to my supervisor, Dr. Lucy Ngugi for her significant exhortation, huge help and direction that empowered me to get to this far. Thirdly I'm exceptionally thankful to my family and my companions for their help and the thoughts they unswervingly gave to see me this far. My appreciation also goes Kenyatta university lecturers who has really guided me from diploma level up where I am today to mention few Dr. Peris Chege, Dr. Samuel Maina, Dr. Josphat Kyalo, Dr. Joshua Tumuti among others and to my kindred learners for having been so instrumental and accommodating being developed of this work via sharing through conversation gatherings.

God bless abundantly.

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LIST OF ABBREVIATIONS OF ACRONYMS

ANT	-	Actor Network Theory
B2B	-	Business-to-Business
EACC	-	Ethics and Anti-Corruption Commission
GDP	-	Gross Domestic Product
ICT	-	Information Communication and Technology
IFMIS	-	Integrated Financial Management Information System
IT	-	Information Technology
KRA	-	Kenya Revenue Authority
NACOSTI	-	National Commission for Science, Technology and Innovation
RBV	-	Resource Based View
RFI	-	Request for Information
SPSS	-	Statistical Package for Social Sciences
UN	-	United Nation

OPERATIONAL DEFINITION OF TERMS

- E-bidding:** This is a process by which county government receive or send tenders electronically.
- E-tracking:** This is a process by which county government monitor the information about the purchase of goods requested along with the quantity of the requested item electronically.
- E-invoicing:** This alludes to as a process through which the county sends and receives pertaining transactions of money or payment through electronic means.
- E-ordering** This is the interaction and action of the county placing orders, approving purchase orders, and obtaining the labor and goods requested online using internet technology.
- E-procurement:** This is the process of requisitioning, ordering and purchasing goods and services online.
- E-procurement practices:** This refers to business-to-regional government purchases and sales of labor and products via the internet, and other information and system administration frameworks, like electronic information exchange. It includes e-tendering, e-ordering, e-auctioning, and e-invoicing.
- E-auction:** This is an exchange that happens on a web-based commercial center between bidders and dealers (providers in the business to business scenarios). It empowers suppliers to contend online for contracts against an

expressed detail, whether business to business, business to purchaser, or buyer to customer.

E-tendering:

This is a process through which tendering process is done online from advertisement, bidding and placing of the contract.

Performance:

Tangible or intangible outputs, outcome and results that are measurable.

**Organizational
performance:**

Refers to the organization's efficacy and effectiveness.

ABSTRACT

Businesses worldwide are increasingly utilizing e-procurement as a result of technology improvements. E-procurement is crucial to meeting organizational objectives. However, county governments face major hurdles in implementing e-procurement processes into their operations. Clearly, the benefits of establishing critical e-procurement processes are not visible in a regressive government environment. Companies that use e-procurement in their procurement operations often see cost savings, data exchange, and simplified procurement processes. This study sought to investigate the impact of e-procurement procedures on the performance of Kiambu County Government. The study's objectives were to determine the impact of e-auction, e-tendering, e-ordering, and e-invoicing on the performance of Kiambu County Government. The study is based on Auction Theory, Resource Based View Theory, and the Technology Acceptance Model. The study followed a descriptive survey research design. The study addressed 216 employees from Kiambu County Government's procurement and finance departments. A stratified random selection procedure was used to choose 65 individuals. The data was collected using questionnaires. A pilot research was undertaken with seven procurement department employees. The respondents were not involved in the actual data collecting. The pilot test findings assisted in determining the validity and reliability of the research instruments. The research acquired authorization letter from Kenyatta University Graduate School and research permit from National Commission for Science, Technology and Innovation. The collected data was analyzed using the Statistical Package for the Social Sciences. The evaluated data was presented using frequency tables, means, and standard deviations. Diagnostic tests were performed to assess the results' reliability, including multicollinearity, linearity, normalcy, and homoscedasticity. The study's findings demonstrated that e-auction enhances efficiency in the procurement process, saving time for both vendors and purchasers. E-bidding leads to a shorter tender invitation procedure and increased openness in the tendering process. E-ordering expedites order acquisition and delivery. E-invoicing lowers payment errors and improves accountability and transparency. The findings revealed that e-auction, e-tendering, e-ordering, and e-invoicing have a considerable impact on the Kiambu County Government's performance. The study concludes that e-auction, e-tendering, e-ordering, and e-invoicing considerably improved the performance of Kiambu County government. Governments save a lot of time and money by holding e-auctions, which also allow suppliers to grow into new markets. E-tendering greatly reduces expenses while improving the efficiency of public sector tendering. E-invoicing improves performance by making an organization's operations run more smoothly. The study recommends that county governments improve accounting, documenting, and reporting by implementing proper invoicing procedures. The automated procurement process should encompass requisitions, tenders, contract warding, and payment. Additionally, the county government should improve the delivery of public services by giving both the national and county governments timely, transparent, and accurate financial and accounting information. The county administration should use electronic ordering, especially for processing purchase orders electronically.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Roma and McCue (2012) define e-procurement as the application of information technology to the development of an environment-responsive procurement procedure. Practically all business areas and hierarchical sorts have embraced e-acquirement. E-procurement is effected by cultural, social, and political factors, particularly in the public sector. E-procurement implementation in public procurement calls for assets and professional expertise. A coordinated training program and change management mechanisms are also necessary for the procedure (Garran, 2015).

Performance is crucial to an organization's success because it makes it possible to make cost-efficient purchases and acquire high-quality goods and services that give the company's goods and services a competitive edge on the market. According to an analysis of how successfully those functions are carried out when it comes to using it for procurement, e-procurement is positively connected with how well county governments in Kenya carry out their supply chain operations (Lagat, 2016).

According to a survey done in the United States by Baldus and Hatton (2020), strategic commitment of a supplier to a buyer, for example, had a greater effect on performance (65%) than hard, more measurable conditions like supplier capacity (60%), despite being viewed as less significant in the overall supplier selection process. The state government's distribution of resources determined how well the federal government performed. Poor performance contributes to increased failure, costs, and the seriousness of the acquisition capability. Poor performance, according to Aguila (2020), causes a decrease in benefit in the

private sector and is a substantial barrier to the recognition of hierarchical growth since it causes delays in delivery, subpar labor and products, and the expansion of defects.

In Malaysia, local governments have performed poorly as a result of their refusal to adopt e-procurement, their reliance on antiquated procurement practices, and their inefficient management of procurement actions between their requisitioning and procurement departments, according to a study by Mohd, Nadarajan, Ibrahim, and Mustapha (2017). Effective performance measurement can help managers make better decisions about procurement, which will improve accountability and performance.

In South Africa, the purchasing function has an impact on local municipalities' performance since suppliers may have an impact on a product's price, quality, delivery reliability, and availability (Mafini, Dhurup & Madzimore, 2020). The government anticipates that effective supplier relations management will improve performance by reducing the cost of goods and raw materials while upholding high standards for quality and post-purchase support. This means that efficient supply chain management depends on excellent supplier relations management. Managing connections with present suppliers to guarantee ongoing availability of necessary, high-quality goods at the business is essential for achieving optimal performance (Koech & Coldwell, 2019). This will guarantee that sourced items are actually purchased at a fair price and at the appropriate time.

According to Muriuki, Guyo, Odhiambo, and Kinoti (2019), implementing inventory optimization, particularly when using e-procurement systems, significantly affects how well county governments perform in Kenya. Both the strategic and operational sides of the procurement function are taken into consideration when evaluating its performance.

Operationally, performance is evaluated in terms of the cost of purchases, the standard of the delivered goods and the adaptability of the procurement process (Kosgei & Kinoti, 2018).

1.1.1 Organizational Performance

Employee satisfaction or reaching financial goals, according to a study by Miyoko Marika and Litondo (2019), can be utilized to examine an organization's performance. Similar to this, Chegugu and Yusuf (2017) stated that performance can be evaluated using the efficacy and efficiency of goal achievement. Financial performance, including return on investment, sales growth, profit, organizational effectiveness, and company success, can be used to assess performance, claim Kumar and Ganguly (2020).

The company's overall state is reflected in its organizational performance, which is the result of how successfully it uses its resources through operational actions. A company's performance is affected by efficiency, sales outcomes, customer satisfaction, and connection building. Taking part in e-procurement improves authoritative execution, including viability, deals execution, client satisfaction, and relationship development, according to Hamza, Gerbi, and Ali (2017).

Nganu and Mwangangi (2019) claim that the inefficient and improper management of public finances during procurement processes is mostly to blame for the poor performance of public institutions. It is in this way a great chance to know about the commitment to give an incentive for cash and to effectively carry out execution on all levels of the public area during the obtainment cycle to forestall occurrences of speculative execution and construct feasible execution. In addition to satisfying the public's desire for information on public sector performance, doing so can help the government evaluate its own accomplishments (Coviello, Guglielmo & Spagnolo, 2018).

Measuring organizational performance, specifically in the context of county governments, involves evaluating various key indicators to assess the effectiveness and efficiency of their operations and service delivery. One common measure of performance is financial performance, which includes indicators such as revenue generation, budget adherence, and cost management. Financial performance metrics provide insights into the fiscal health and sustainability of county governments, enabling stakeholders to gauge their financial stewardship and accountability (Jain & Horne, 2020). A strong financial performance is indicative of prudent financial management practices and can contribute to the overall success of county governments.

Another important measure of organizational performance for county governments is service delivery performance. This encompasses indicators related to the quality, accessibility, and responsiveness of public services provided to the community. Service delivery performance metrics include response times, citizen satisfaction levels, and service availability, among others. By monitoring and improving service delivery performance, county governments can enhance public trust and satisfaction, as well as meet the needs of their constituents effectively (Chen & Wang, 2019).

The governance and administration performance are crucial measures for evaluating the overall effectiveness and transparency of county governments. Governance performance indicators may include compliance with regulations, ethical standards, and internal controls, while administration performance metrics can assess the efficiency of administrative processes and decision-making structures (Vos & Meek, 2018). Strong governance and administration performance are essential for maintaining accountability and ensuring effective governance within county governments.

1.1.2 E-Procurement Practices

According to Chegugu and Yusuf (2017), e-procurement is the use of computerized, internet-based systems for individual or group procurement tasks like searching, purchasing, negotiating, ordering, receiving, and post-purchase verification. E-procurement strategies that focus on one or more stages of the procurement process include e-tendering, e-auctioning, e-invoicing, e-auction, and e-marketing.

E-procurement practices, including e-auction, e-tendering, e-ordering, and e-invoicing, are increasingly being adopted by organizations to streamline their procurement processes and enhance efficiency. Research has shown that these electronic procurement methods have a positive impact on organizational performance by improving cost savings, process efficiency, and supplier management. Studies have found that e-auctions can result in significant cost savings for companies by enabling them to obtain goods and services at lower prices through increased competition among suppliers (Grimm, 2020). This cost-saving potential can directly contribute to improving the financial performance of organizations.

E-tendering is another important e-procurement practice that helps organizations solicit bids from suppliers electronically. By digitizing the tendering process, organizations can reduce time and costs associated with traditional paper-based procurement methods (Chen, 2018). This streamlining of the procurement process lead to faster supplier selection and contract award, ultimately enhancing organizational performance. Furthermore, e-ordering and e-invoicing in e-procurement have been shown to improve process efficiency and reduce errors in order processing and invoicing. Automation of these tasks can result in faster order fulfillment, reduced cycle times, and improved accuracy in invoicing (Kumar, 2019). These

efficiency gains translate into cost savings and operational improvements that can positively impact the overall performance of organizations.

Al-Yahya and Panuwatwanich (2018) conducted a study in Saudi Arabia on e-procurement implementation to increase the effectiveness of public works procurement there. The research claims that e-procurement increases productivity, decreases overhead costs, improves the procurement function's accountability and transparency, decreases ordering and inventory costs, reduces paperwork, and improves cash flow. It has been proven to reduce credit management-related costs. Because it has a positive and strong correlation with how effectively construction organizations' procurement departments operate, e-procurement has a significant impact on procurement performance. The Kenyan Ministry of Education, Science, and Technology's implementation of e-procurement and monetary execution were the subject of a study by Samoei and Ndede (2018). The study found that the supply chain can be significantly improved by using electronic ordering, which uses Internet technology to place orders, receive services, and receive ordered goods.

According to Mutunga and Makhamara (2020), one of the utmost successful approaches utilized by firms to enhance procurement techniques and achieve good company management is electronic accounting. Kenya's Jubilee government started using e-procurement techniques immediately after taking office. Since then, numerous demands and reforms have been made to force the completion of all government procurement activities online. All public works, products, and services must be purchased through internet channels, as per the Kenyan government (Miyoko Marika & Litondo, 2019). There are requirements for all financial and procurement transactions to be made online specifically

for municipal governments (Waithaka & Kimani, 2021). This can increase accountability and openness and serve as a disincentive to fraud and corruption.

According to Maagi (2020), a highly automated, interconnected, and efficiently running procurement system is necessary to inspire businesses and cut costs. Additionally, you can easily keep track of products, services, and their offerings and make sure you have adequate data to enhance your pricing strategy. E-procurement procedures have advantages as well, resulting in greatly improved information sharing and quicker reaction times for product development.

There is a rule that all procurement and financial procedures, specifically for County administrations, must be done online. For instance, the government mandated the utilization of the IFMIS in all 47 counties. Through the provision of real-time financial data and efficient programs, IFMIS was introduced to enhance governance and create budget budgets. Additionally, it improves accountability and transparency and serves to combat fraud and corruption.

1.1.3 Kiambu County Government

The devolution of national government was enhanced by promulgation of 2010 constitution. The powers are articulated in Articles 191 and 192 of the constitution and County Governments Act of 2012. One of Kenya's 47 counties is the Kiambu County government. Kiambu County, which lies in the center of Kenya, has a total area of 2,543.5 km², of which 476.3 km² are covered in forest. According to the map below, Kiambu County is bounded to the north-west by Nyandarua, south by Nairobi and Kajiado Counties, to the east by Machakos, to the west by Nakuru to the north and north-east by Murang'a.

The Kiambu County Government through the department of Finance and the Economic Plan is responsible for procurement processes. This department handle not only the disposal of assets, but also the purchase of materials and services. The county government is aware of the need for programs to enhance capacity so that these departments can handle projects successfully and successfully. As a result, procurement has become a higher priority and the capacity development of those involved in the procurement process has become necessary (Kiambu County Government, 2021).

The performance of Kiambu County Government in relation to procurement has faced significant challenges and shortcomings that have raised concerns about transparency, compliance, and efficiency in the management of public resources. A study by Muthoni (2020) highlighted the pervasive issues of corruption, lack of procurement oversight, and poor supplier management practices within the county government's procurement processes. These findings underscore the dismal state of procurement performance in Kiambu County, which has far-reaching implications for service delivery and governance outcomes.

1.2 Statement of the problem

For procurement professionals, measuring organizational performance has always been a difficult task (Waithaka & Kimani, 2021). Despite the usage of e-procurement, procurement malpractices have also been on the rise in County Governments. According to a report from the controller of the budget in 2021, many counties engaged in widespread procurement fraud through the inflation of purchased products. This is true despite the existence of electronic procurement. This indicates that e-procurement has not fully fulfilled the function that it was intended to play (increased efficiency, cost savings, transparency, and reduced corruption). To comprehend the idea of e-procurement and the benefits connected with it,

numerous studies had been conducted. Study has been done, for instance, on the implementation of e-procurement, its drawbacks, and its advantages. Significant scandals and embarrassments have occurred in Kenya's procurement function, and they have been linked to improper management of procurement information and extreme corruption (Boariu, 2018). A strong, integrated automated procurement system is necessary since it will increase competition and reduce costs (Ogot, 2017).

Moreover, the inefficiencies and delays in procurement processes within Kiambu County Government have contributed to poor procurement performance outcomes. Studies by Otieno and Kariuki (2018) have identified bottlenecks in the procurement cycle, including lengthy approval processes, inadequate planning, and limited stakeholder engagement, as key factors hampering the effectiveness of procurement operations. These operational challenges have led to delayed project implementation, budget overruns, and substandard service delivery.

The remunerations of implementing strategic e-procurement procedures are obviously unknown to the majority of devolved systems of government. For instance, Kiambu County did not use the e-procurement technology Integrated Financial Management Information System (IFMIS) to its full potential. The Kiambu County Assembly Committee on Finance and Economic Planning estimates that officer theft cost the county more than Sh5 billion in lost revenue. A report that stated enforcement officers weren't sending the money they had received revealed this.

A review of Kiambu County's systems, policies, practices, and procedures, however, uncovered a number of flaws, including the absence of explicit operating procedure manuals and policy guidelines. Failure to perform revenue collection reconciliations, weak budgetary

controls, lack of internal controls and checks in the billing process, a lack of a sophisticated county-wide risk management framework, a lack of a thorough Fixed Assets Register, and making payments when vouchers are not fully supported are a few of the loopholes that have been found (EACC, 2018). This shows that e-procurement methods' effectiveness has to be assessed. Thus, the existing study aimed to explore the effect of e-procurement practices on the performance of Kiambu County Government.

1.3 Objectives of the study

1.3.1 General objective

To establish the effect of e-procurement practices on performance of Kiambu County Government, Kenya.

1.3.2 Specific objectives

The study objectives were;

- i. To determine the effect of e-auction on the performance of Kiambu County government, Kenya.
- ii. To examine the effect of e-tendering on the performance of Kiambu County government, Kenya.
- iii. To find out the effect of e-ordering on the performance of Kiambu County government, Kenya.
- iv. To establish the effect of e-invoicing on the performance of Kiambu County government, Kenya.

1.4 Research Questions

The study questions include;

- i. What is the effect of e-auction on the performance of Kiambu County government, Kenya?
- ii. What is the effect of e-tendering on the performance of Kiambu County government, Kenya?
- iii. What is the effect of e-ordering on the performance of Kiambu County government, Kenya?
- iv. What is the effect of e-invoicing on the performance of Kiambu County government, Kenya?

1.5 Significance of the Study

The research findings may be crucial for developing standards for excellent public sector practice, which will be useful for procurement managers in county governments and other public sectors. In Kenya, county governments typically struggle with issues, corruption, and poor value for money in their procurement procedures. This study offers new insights and ways to help these county governments improve their procurement performance. The study's conclusions will make it possible for the management of various public sector institutions to pinpoint the crucial elements to take into account when procuring goods and services in order to maximize the utilize of public funds and assets.

The study may help county governments understand how to strengthen their e-procurement programs and easily handle the typical difficulties they encounter. Professionals in supply chain management and procurement will benefit from this study's explanation of how e-

procurement works as a tool to enhance the efficiency of both public and private supply chains. At the point when the public authority takes on strategies to work with the use of e-procurement to upgrade store network execution, they might track down this data accommodating in diagnosing issues in the public sector.

The outcomes of this survey are thought to be beneficial for researchers and academics as a resource and foundation for additional research. Researchers should also have a better grasp of how e-procurement techniques can affect the effectiveness of procurement processes. Additionally, by using the research findings as a foundation, other research fields will be identified. The study's findings will serve as a guide for academics interested in taking research on the same subject and as a reference for future scholars who are interested in this area.

1.6 Scope of the Study

Kiambu County Government form the study area. The study only looks at how on-procurement techniques affect the effectiveness of procurement. However, just the four indicators; e-auction, e-tendering, e-ordering, and e-invoicing were examined. The research was carried out between the fiscal years 2018/2019 and 2021/2022.

1.7 Limitation of the Study

One of the study's challenge was that some participants were reluctant to answer the questions out of concern that they would be wronged, therefore they didn't want to risk being harmed. To ensure that they gave the information voluntarily, the researcher built a solid rapport with them. Participants might not have been willing to cooperate due to concerns about the privacy of the data sought, but the researcher built confidence and made it clear that the information was only utilized for scholarly purposes. In order to guarantee

the participants confidence in providing the information, the researcher also presented copies of research authorization letters from Kenyatta University and a study permit from NACOSTI.

1.8 Organization of the Study

This project has five chapters. Chapter one explain the background of the study, statement of the problem, objectives, questions, significance, scope of the study, limitations of the study and organization study. Chapter two constitutes the theoretical framework, empirical literature review, summary of literature review, research gaps, and conceptual framework. Chapter three explain; research design, target population, sampling design and sample size, research instrument and data collection procedure, data analysis, and ethical considerations. Chapter four outlines study findings and discussion while chapter five present summary of the study findings, conclusion and study recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The data from other scholars who have conducted their survey in the same area of research are compiled in this chapter. Empirical reviewed literature, theoretical review, study gaps, and conceptual framework are the specific topics discussed here.

2.2 Theoretical Review

The research was grounded by Auction Theory, Resource Based View (RBV) Theory and Technology Acceptance Model.

2.2.1 Auction Theory

William Vickrey first proposed the hypothesis in 1961. Paul Milgrom and Robert Wilson successfully enhanced the theory in the 1980s. By enforcing a precise set of rules about the resource allocations of a group of bidders, auctions enable transactions. According to Alexanderson and Hultén (2006), selecting suppliers for public services is akin to holding common value auctions using a sealed-bid approach. Even though it's frequently the most crucial criterion, the bidders' prices might not be the only thing to consider. Once the bidding process is complete, the procuring public body normally examines the competing bids in terms of both price and quality. According to their argument, competitive tenders incorporate the positives, negatives, and risks of both auctions and beauty pageants.

A pure auction, according to Hultkrantz and Nilsson (2011), is preferable to a beauty pageant because it provides a more market-oriented, objective, and transparent way for granting licenses. Their biggest argument in favor of open tendering is that businesses participating in the auction process provide information about their estimates of the worth of

the commodity by making increasingly larger financial offers. Hultkrantz and Nilsson (2011) highlight a number of drawbacks with beauty pageants, including the lengthy and slow-moving nature of the process, the difficulty in achieving transparency, and the fact that many of the criteria are subjective or hard to quantify. They go on to say that open tendering is a superior option even when social considerations are crucial because it can also include minimum standards and can permit both positive bids in desirable regions and negative bids in undesirable regions. This improves county government performance since the best supplier or bidder was chosen based on the criteria that was used.

2.2.2 Resource Based View (RBV) Theory

Penrose first presented this theory in 1959, but Wernerfelt later developed it (1984). The resources of the firm serve as the foundation for most of the RBV theory. The theory states that such resources should be prized since they ought to be rare, distinctive, and difficult to replace. The theory states that useful resources are those that make it easier to create or employ strategies to improve performance, seize market opportunities, or counter rising threats. This hypothesis depends on the possibility that an entity has inherent resources that can be used to achieve higher performance. The resource-based view (RBV) holds that a company's competitive advantage and success are primarily determined by its resources.

The RBV idea is in favor of the organization's independent actions taken as it gets ready to start its supply chain moving. The theory show that internal operational procedures are crucial parts of an organization's resources. An example would be integrating electronic platforms when carrying out activities like sending out tender invitations. The business will find it convenient to follow industry benchmark criteria while looking for suppliers, and this can be accomplished by implementing a comprehensive tendering procedure that is carried

out online (Peteraf & Barney, 2018). The organization will be able to assess how the platform's success in handling the procurement function has an impact on each individual organization. Once they realize that they may base their competitive advantage on the effectiveness of the process, the RBV idea ensures that the organization handles its procurement function with great sensitivity (Dierickx & Cool, 2019).

This theory explains why county governments have chosen to use and operate e-procurement systems. Technology drives electronic procurement. A resource is technology. In light of the theory, it is therefore anticipated that county governments will deliver services more effectively as e-procurement becomes more widely used. If properly used, e-procurement can be a resource that improves service delivery.

2.2.3 Technology Acceptance Model

Devis created the technology acceptance model in 1986. The theory posits that an individual's intention to use a particular technology is determined by two main factors: perceived ease of use and perceived usefulness (Davis, 1989). Perceived ease of use refers to the extent to which an individual believes that using the technology will be free of effort, while perceived usefulness relates to the individual's belief that using the technology will enhance their performance or productivity. The perceived ease of use and perceived usefulness, significantly effect users' attitudes and behaviors towards technology adoption. When users perceive a technology as easy to use and believe that it will bring benefits to their work or tasks, they are more likely to accept and embrace the technology (Venkatesh & Davis, 2000). This acceptance process is crucial for organizations seeking to implement new technologies and systems effectively.

The theory states that on the off chance that individuals don't acknowledge the change, new innovation can't work on corporate viability and execution. Embracing any advancement, yet especially one in view of data innovation, requires putting resources into computer based apparatuses to ease correspondence and arranging (Munubi, Kinanga and Ondiba, 2017). However, these systems might be harmful. The systems must be specifically designed to accommodate organizational logic and preference. It's also crucial to understand that not everyone will embrace technological developments. It is important to make an attempt to understand the underlying causes of such issues and the reasons why people resist change. It is essential to establish the proper organizational culture, and any change must be executed gradually and in a communicative manner. Everyone involved must understand their obligations and be given the power to fulfill them (Munubi, Kinanga & Ondiba, 2017).

Kenyan counties should employ technology to increase market transparency and economic inclusion through complementarities, as well as to facilitate unfettered access to information. Public administrations can select goods and services from a variety of vendors in a virtual market that is accessible to qualified providers (goods) based on not primarily restricted selection criteria by utilizing procurement technologies like e-procurement. Digital signatures are used in e-procurement to ensure speedier transactions and to make the entire procurement process digital. Additionally, e-procurement will enable county government to cut administrative costs, potentially broaden the pool of suppliers, facilitate access to preferred goods (with pre-established quality standards), improve the understandability of information, make it simple to compare different products, and facilitate the logging of purchases and subsequent expenditure monitoring.

County governments have traditionally struggled with the invoicing process, which causes delays in the delivery of goods and services and client discontent. The use of various e-procurement techniques by county governments to improve their procurement process has so greatly emerged as a solution to this issue. As a result, the county governments' activities will become more productive, effective, and efficient if the idea is implemented.

2.3 Empirical Literature Review

This part discourses writings on aforementioned researches on e-auction, e-tendering, e-ordering and e-invoicing as explained below.

2.3.1 E-auction and Organizational Performance

A research by Oppong (2020) on impact of e-auction on performance of the organization. A correlational research design was utilized in the survey. Information was gathered via questionnaires. From the results, it was determined that using e-auctions for procurement is driven by fostering relationships with suppliers rather than only as a way to reduce costs for goods and services. When there is a negative attitude regarding the usage of e-auctions, it is primarily due to a strategic approach to procurement.

Waganda (2018) did a survey on the effect of e-procurement on United Nations agencies' execution in Nairobi. A research was conducted on a few UN institutions in Nairobi City County. Exploratory research design was embraced in the survey. Data collection was done by means of the surveys. SPSS version 23 was utilized to assess the data that had been gathered. The data analysis revealed that the numerous procurement officers agreed with the assertion that electronic auctions offer sellers and buyers a transparent environment. The results also showed a connection between e-auction performance and that of United Nations agencies. To close a conceptual research gap, the previous study was carried out by United

Nations Agencies, whereas the current study would be carried out by the Kiambu County Government.

Muthoka (2016) investigated the connection between Kenyan government ministry performance and e-procurement. The study, which looked at all of the national government's ministries, was conducted using a survey design. Primary data for the survey were gathered through structured and unstructured questionnaires. The results showed that e-auction allows suppliers to indicate interest, submit bids for contracts in the shortest amount of time feasible, encourage competition for the contract, and provide an effective, apparent procurement process for the organization and suppliers. While the present survey will be done at Kiambu County Government, the previous survey was undertaken at government ministries.

2.3.2 E-tendering and Organizational Performance

A survey on the impact of e-tendering on the execution of the Nairobi County Government was undertaken by Gathima and Njoroge (2018). The investigation was grounded by two theories: transaction cost theory and innovation diffusion theory. The survey utilized explanatory research designs. The target group consisted of 750 participants from the payments, finance, and information technology departments. A total of 75 participants who were chosen at random from each of the three departments made up the study sample. The information was gathered by distributing questionnaires to the chosen sample. The outcomes of the survey uncovered that there was a noteworthy linkage between E-tendering approaches and the execution of the Nairobi City County Government at a 95% confidence level. The current study, however, will take place in Kiambu County, whereas the last study was carried out in Nairobi City County.

A survey on e-tendering and public corporation performance for the Rwanda Revenue Authority by Munezero (2017). Employees of the Rwanda Revenue Authority served as the study's subjects, who were the subject of a descriptive inquiry design. To ascertain the relative significance of e-tendering in relation to performance, a multivariate regression model was utilized in the survey. It was discovered that e-tendering increases organization efficiency since it allows for the timely selection of the best contractor for the job.

E-tendering, according to Fasli (2017), is the practice of performing the whole procurement cycle online, involving the submission of price offers, and can take use of the effectiveness, affordability, and speed of the Internet. E-tendering is the practice of executing the procurement procedures by sending questions electronically over the internet. This study clarifies e-tendering. Request for Information (RFI), Price Response to Supplier (RFP), electronic notices, electronic selection, electronic mailing, and electronic forwarding (Davilla & Gupta, 2016).

Adams (2016) utilized the case of a sizable Ghanaian city to assess the possibility of e-procurement in the public sector. A total of 50 people took part in the poll. The analysis discovered that there were issues with paper/manual sourcing in relation to technology, procedures, people, and compliance. The study also discovered that, among the four themes, e-procurement systems face some difficulties, the majority of which are technological in nature. To start integrating technically procured procurement techniques into the public sector, the report advises revisiting procurement procedures to include an aspect of e-procurement. The survey's suggestions have so far been put into practice because many developing nations now use e-procurement systems for the majority of their significant public expenditures. But since the study only looked at Ghana, it did not find any other

characteristics that might have an impact on non-technological e-procurement. The goal of the current investigation is to fill any contextual gaps.

Rotich, Muma and Waruguru (2015) led a survey on the association between e-tendering and the efficiency of Kenyan county governments' procurement. In the county of Kericho, data were gathered. A correlational research design was embraced in the survey. The survey's target audience consisted of Kericho County employees, and the sample frame included 120 of them from the county's IT, finance and accounting, and procurement departments. The sample size was established through stratified sampling, and the sample components were chosen by means of simple random sampling. Structured questionnaires that the scholar issued and later gathered for analysis were used to gather data. To investigate the connection between e-tendering and procurement execution, correlation analysis was conducted. The independent and dependent variables were represented by frequencies and percentages. The results revealed a link between e-tendering and the Kericho County Government's supply chain function performance.

Chepkirui (2015) investigates how e-procurement affects supply chain efficiency. Descriptive statistics were employed by a state-owned business in Nairobi County, Kenya, to look at case 216. E-tendering, e-ordering, and e-informing, according to procurement employees and their findings, have a large beneficial impact on supply chain performance, however e-sourcing has a major negative impact. The study on state-owned business was conducted in Nairobi City County, but the present survey will be done by the Kiambu County Government.

2.3.3 E-ordering and Organizational Performance

Lewis (2019) looked into how well e-procurement platforms performed by assessing how well the e-ordering module worked. According to the study, e-ordering may be utilized to speed up order processing, save orders, and boost revenue. The study also discovered that selecting an e-tool to complement the business's capabilities was the first step in using e-ordering, which was then followed by change management and, when appropriate, training of staff members and other stakeholders.

Oteki (2019) investigated the effect of e-procurement methods on the supply chain efficiency of Kenyan sugar processing companies. The specific goal of the survey was to see how the use of electronic order processing techniques affected supply chain efficiency. The target population in Kenya involved of 12 sugar processing enterprises, with a total population of 7,584. A mixed research methodology was utilized. To get at a sample size of 367, stratified random sampling was utilized. Personally drop-and-pick surveys, observation and interviews were utilized to gather the information. The outcomes showed a substantial correlation between supply chain effectiveness and electronic order processing practices. While the present study will be carried out at the Kiambu County administration, the previous study was undertaken in sugar processing businesses.

Electronic data exchange (EDI) and, more recently, the Internet have been used to arrange the e-ordering process amongst various parties. Through the use of electronic technology, e-ordering has developed to simplify and validate an organization's ordering processes (Hawking, 2014). For many businesses worldwide, the advantages of e-ordering have dramatically decreased procurement expenses. Therefore, a key strategy in the e-business strategies of the majority of organizations is the utilization of technology. According to

reports, businesses using e-ordering can save their procurement costs by 8% to 15% (Ghazaly, 2018).

The main findings of a study by Nafula and Namusonge (2017) on the impact of e-procurement rehearses on the efficacy frontier of the county government of Kakamega were that the county government of Kakamega had a low availability of websites to facilitate e-procurement, which might affect their efficiency in procurement. Additionally, the County Government of Kakamega only sometimes placed supply requests online. The outcomes uncovered that there exist limited online services hence hindering the county government function.

A survey was done by Nyagah, Kairuri, and Mwangangi (2017) at New Cooperative Creameries Limited in Kenya was aimed to explore the e-procurement impact on efficiency of supply chain in the dairy sector. This survey discovered a favorable association between e-ordering and supply chain performance using a descriptive survey design. The report makes recommendations for enhancing supply chain e-order processing efficiency. This research supports Afande's (2016) findings that there is a link between e-ordering and improved supply chain performance. According to the report, because of its potential savings, the automated approval system improves the procurement process' efficiency. The time it takes to create an order after submitting a request. As long as the hierarchy is strictly followed and validated at the time of approval, spending limit compliance is improved. Control leaks arise because end users must take extra steps to add suppliers who are not already on the supplier master list. The low processing overhead lowers the cost of sending orders to suppliers.

In an insightful e-ordering study on supply chain performance at Kenyan retailers, Kipkemboi and Langat (2016) surveyed 224 purchasing agents from 112 retail markets in Kenya. E-ordering prominently increases the efficiency of the supply chain, as per the outcomes. As the supply chain functions are fully handled by the e-ordering system, this lessens the need for manual involvement. The survey concludes that e-ordering and molding, two components of e-procurement, increase the effectiveness of the supply chain. Therefore, during the procurement process, businesses must use computerized ordering and form-filling. To improve supply chain performance, electronically examine references for products and services that require high-quality commodities.

Using the Kenya Revenue Authority as a case study, Muhia and Afande (2018) examined the performance of Kenyan state businesses' adoption of e-procurement strategies. The descriptive case study approach used in the study demonstrated how instantaneous reactions and real-time information provided by electronic communication had a favorable impact on Kenya Revenue Authority's procurement performance. E-goal procurement's is to free up the purchasing function's attention from operational concerns so that it may concentrate on tasks that provide more value, including serving customers. The results also showed that computerized order processing improved procurement efficiency as seen by a noticeable reduction in lead times.

2.3.4 E-invoicing and Organizational Performance

E-invoicing is the practice of sending and receiving invoices online by a business (Gunaratne & Pappel, 2020). E-invoices, in accordance with Gichuhi (2021), enable companies to gather and transmit transactional data through a network. E-invoices give businesses the capability to handle customer and supplier information along the whole

supply chain while also enhancing data privacy, source and receipt non-repudiation, and authentication.

A survey on the effect of e-procurement on UN agency execution in Nairobi City County was done by Waganda (2018). Secondary and primary data were utilized in this investigation, along with an exploratory study design. Secondary data came from a variety of publications and periodicals, while primary data came from procurement supervisors and other employees who were involved in the procurement process. This survey used regression analysis to explore the linkage between procurement performance and agency e-invoicing. Government agencies have been able to lower expenses, streamline the billing process, shorten payment deadlines, and improve data security by using electronic invoices.

Chegugu and Yusuf (2017) examined how the Uasin Gishu county government's e-procurement policies affected the performance of public hospital organizations. The review utilized a descriptive study design to gather information from 5 hospitals having a sample of 367 participants, which was then evaluated through quantitative and qualitative methods. The data shows that the addition of invoices to the hospital's procurement process has greatly improved research's contribution. Hospitals could simply keep track of invoices from customers to suppliers via electronic invoicing.

Chepkwony and Lagat (2016) led a survey on the impact of technology adoption and use (Electronic Invoicing and Electronic Data Interchange) on buyer-seller association in the business-to-business. The study's approach was based on qualitative research. The examination of three case companies that worked in the manufacturing and marketing of textiles, the construction of machinery and power plants, and the airline industry made up

the research. As per the survey's outcomes, different facets of the business-to-business interaction are impacted by the use of electronic invoicing to varying degrees.

A survey was done on crucial elements for maximizing the execution of e-invoicing in the public sector by Vaidya, Sajeev, and Callender (2014). They discovered that despite government reform efforts to embrace e-procurement, the use of e-invoicing remains a significant problem for many procurement tasks.

Assessing the e-invoicing impact on performance of organization was the main goal of Knudsen's (2016) study on reinventing local governments and e-procurement programs. A survey research methodology was used in the review for a few Kenyan state institutions. 1345 people in total responded to the survey. As per the survey's outcomes, e-invoicing has a lot of advantages, including significant cost savings, simplified business processes, quicker payments, improved data security, various environmental advantages, and more.

2.4 Summary of Reviewed Literature and Study Gaps

The reviewed literature and survey gaps are identified and exhibited in Table 2.1.

Table 2.1 Literature Summary and Knowledge Gaps

Author	Topic	Results	Knowledge Gap	Focus of existing research
Rotich, Muma & Waruguru (2015)	The association between e-tendering and Kericho County Government execution.	The outcomes of uncovered that e e-tendering is absolutely related to supply chain function.	Need to consider more e-procurement strategies having contextual and empirical gaps in relation to local survey.	The gap was filled by exploring a survey in Kiambu County Government therefore collecting empirical proof.
Adams (2016)	Evaluation of the potential of e-procurement in the public sector using the large city in Ghana	The survey found that manual sourcing suffered challenges across technology, processes, people, and compliance.	The expansion of study variables will consider empirical gap while shifting to other sector will consider contextual gap.	Contextually, the research was based in Ghana while the existing survey was based in Kenya specifically Kiambu County Government
Muthoka (2016)	E-procurement and execution of government ministries	The survey findings revealed that e-auction enhances competitive for the tender and providing an efficient, transparent procurement process for both organization and suppliers.	Methodological gap emerged since the study concentrated on objective measures leaving out subjective performance	The gaps were filled by studying more variables and focusing on performance of Kiambu County Government.

Knudsen (2016)	Rethinking local governments and the e-acquirement drives	The outcomes uncovered that e-invoicing has numerous advantages Such as process simplification, significant cost reduction, reduced payment time among others.	Contextual gap is presented since the research was done in USA. Empirical gap emerges since the study concentrated on e-procurement initiatives.	The gaps were filled by studying more variables and focusing on performance of Kiambu County Government.
Chegugu & Yusuf (2017)	Effect of e-procurement rehearses on the execution of public hospital organizations in the Uasin Gishu County, Kenya	The outcomes discovered that e-procurement practices significantly enhanced the hospital's procurement process with the introduction of invoices.	Contextual gap on the necessity to target other county governments	The research was conducted at Uasin Gishu County while the present study will be conducted at Kiambu County government.
Munezero (2017)	Effect of e-tendering on the performance of public corporation in Rwanda Revenue Authority	The outcomes established that e-tendering improves the efficiency of the organization.	Contextual gap emerged on the necessity to consider a local survey.	The survey was done in Rwanda specifically Revenue Authority while the existing survey was done at Kiambu County government
Nafula & Namusonge (2017)	Effect of e-procurement rehearses on efficacy frontier of Kakamega county.	The outcomes revealed that websites accessibility was low which affect the operation of e-procurement within the Kakamega County.	Empirical gap emerged on the necessity to include more model to show the performance.	Empirical gap to be filled by examining more variables.
Gathima & Njoroge (2018)	Impact of e-tendering on Nairobi county government execution.	The results, it was uncovered that e-tendering practices had noteworthy significant linkage with the execution in Nairobi	Contextual gap emerged on the necessity to conduct a study in different area.	Contextual gaps were filled by conducting a research at Kiambu County

		County.		
Waganda (2018)	Effect of e-procurement on execution of UN Agencies in Nairobi.	The results show that e-auctions offer sellers and buyers an open environment.	Empirical gap emerged on the necessity to include more study variables to show the performance.	Gaps were filled by expanding the e-procurement practices under study and also shifting focus to the Kiambu County.
Muhia & Afande (2018)	Execution of e-procurement approach and procurement execution of KRA.	The outcomes uncovered that e-ordering definitely affect procurement execution	Contextual gap emerge on the essential to target other sectors beside Kenya Revenue Authority	Contextual gaps were filled by targeting the Kiambu County Government.
Waganda (2018)	Effect of e-procurement on the execution of UN agencies in Nairobi City County.	This survey found that there was an affirmative linkage between agency e-invoicing and execution of procurement.	Contextual gap emerge on the essential to conduct a study locally	Contextual gaps was filled by targeting the Kiambu County Government.
Lewis (2019)	Effectiveness of e-ordering on the execution of e-procurement platforms	The research found that e-ordering could be utilized as a tool to reduce processing time, save orders and increase sales.	Empirical gap emerged on the necessity to include more study variables to show the performance.	Gaps were filled by expanding e-procurement strategies under study and also shifting focus to the Kiambu County.

Source: Author, (2022)

2.5 Conceptual Framework

A conceptual framework is a big creation made up of clear diagrammatic stumbling blocks that serve as a feasible substitute for the experienced, insightful, and synthetical components of an interaction or framework. It is a collection of general concepts and directing thoughts gathered from appropriate fields of study and utilized to organize a subsequent show. The cooperation of free and subordinate elements completes the structure for a few expected effects. The dependent variable is procurement performance, while the independent variables are E-auction, E-tendering, E-ordering and E-invoicing.

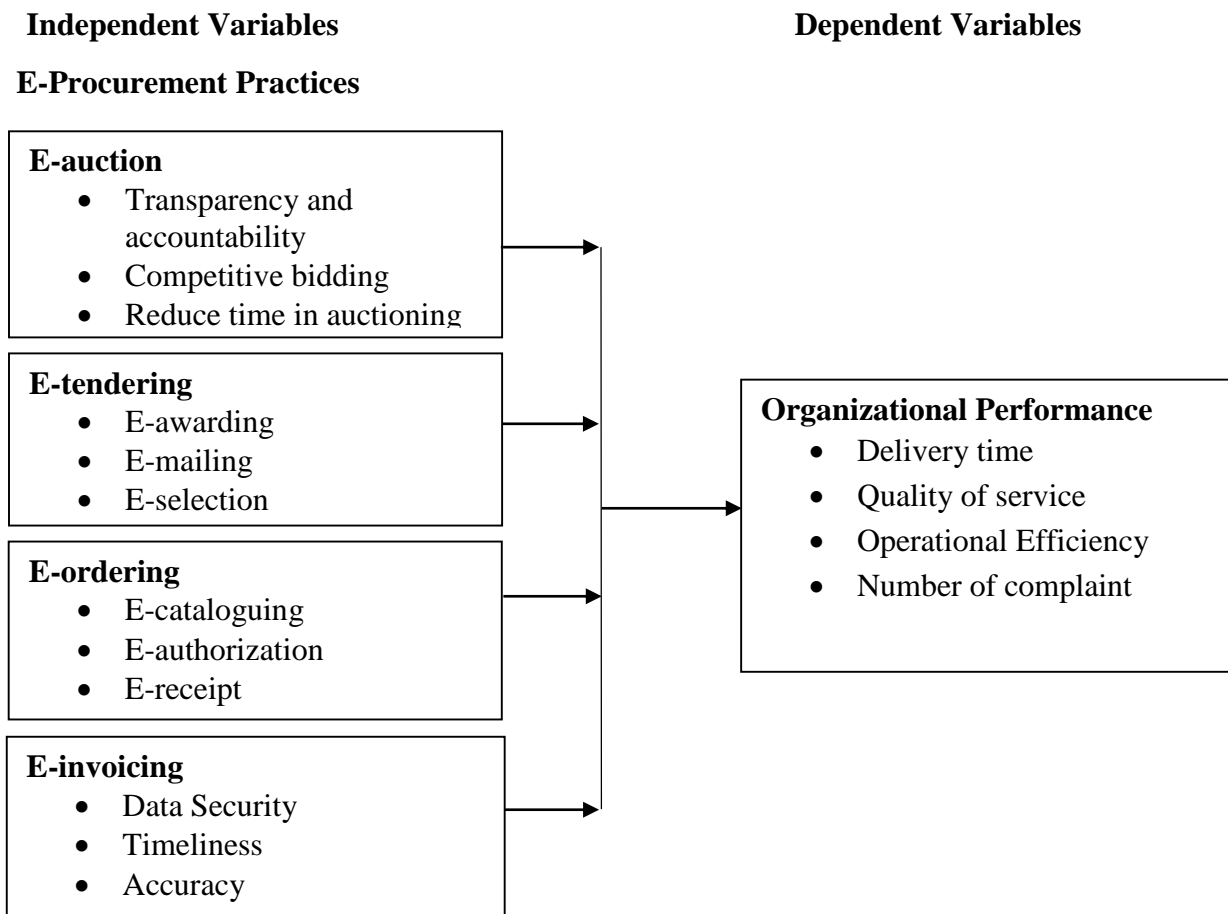


Figure 2.1 Conceptual Framework

Source: Author, (2022)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlines the methodology that the researcher used in undertaking the study. These involved; research design, target population, sampling techniques and sample size, research instruments, validity and reliability, data collection procedure, data analysis and ethical consideration.

3.2 Research Design

The survey used the descriptive research design. Rahi (2017) asserts that descriptive research addresses the who, what, where, when, and how of the problem. A descriptive research strategy, as opposed to other study designs that only look for persons with a particular trademark typically a small percentage of the overall population has the advantage of gathering data from a specific group at a specific period. The effectiveness of Kiambu County Government's procurement practices was investigated using a descriptive research approach. By carefully examining the many constructions of procurement processes and the connections between the variables, the design enables the gathering of qualitative and quantitative data.

3.3 Target Population

This is a plainly characterized gathering of the things being examined, like people, service, items, and occasions (Duty & Lemeshow, 2013). Snyder (2019) alludes a population as the collective group of constituents from which a scholar seeks to draw remarks. The study targeted 216 employees working in the contract management, procurement, inventory and assets departments (Kiambu County Government, 2019). They were the most

knowledgeable about the subject of the study since they are straight tangled with the e-procurement operations at their corresponding departments.

Table 3.1 Target Population

Respondents category	Population	Percentage
Contract management	60	27.8%
Procurement planning	80	37.0%
Inventory and assets department	76	35.2%
Total	216	100

Source: Kiambu County Government, 2021

3.4 Sample Size and Sampling Technique

Sampling techniques provide a variety of options for reducing the amount of information that must be acquired by evaluating only information from a subset of cases or components rather than every single conceivable example or component. Sample size involves the specialist's selection of a more modest portrayal of the study population to achieve study goals (Omair, 2014). To determine sample size, the research utilized stratified random sampling. For this research, stratified random sampling is crucial since it ensures that each department has an equal chance of getting chosen. According to Abutabenjeh and Jaradat (2018), 30% of the population targeted is sufficient to draw conclusions if the population is less than 1000. The survey utilized a sample size of 30% of the target population. In this case, 65 employees were sampled. Table 3.2 displays the sample size.

Table 3.2 Sample Size

Participant's category	Targeted Population	Sample Ratio	Sample Size
Contract management	60	0.3	18
Procurement planning	80	0.3	24
Inventory and assets department	76	0.3	23
Total	216	0.3	65

Source: Kiambu County Government, 2021

3.5 Data Collection Instrument

Both secondary and primary data were gathered. Semi-structured questionnaires were utilized by the researcher to gather primary data. The questionnaires are thought to be less intrusive, cost-effective, simple to evaluate, and familiar to the majority of individuals. The closed-ended and opened-ended inquiries were involved in the study. There are five distinct sections in the questionnaire. Section one contains demographic information, second section focuses on e-auction practices, the third section addresses the e-tendering practices, the fourth section focuses on the e-ordering practices and fifth section addresses e-invoicing practices. The researcher utilized the "drop and pick later" approach in data collection to give participants sufficient time to response the research's questions. The annual financial reports and audit reports provided the secondary data.

3.6 Pilot Test

This was done to pre-test the validity of the study instrument. The researcher chosen 7 workers from procurement department who take part in the pilot study and were not included in actual data gathering. Connelly (2008) recommends using 10% of the survey's sample size. The validity and reliability of the tools were assessed. This help in making corrections in the questionnaire before actual research. Piloting also help in pretesting of the

research instruments to ensure clarity of instructions as well as appropriateness of the duration of filling the questionnaire.

3.7 Validity and Reliability of Research Instrument

3.7.1 Validity

The extent to which a survey tool evaluates what it is projected to evaluate is referred to as the validity (Andrade, 2018). For content validity, the researcher gave the questionnaire to the supervisor and relevant knowledgeable personnel in matters of concepts under study making informed judgment as to whether the contents covered on questionnaire were credible and appropriate enough to enable the researcher achieve the set goals of the survey. The researcher modified the instrument as advised in order to improve it.

3.7.2 Reliability

Reliability is referred to how much research instruments produce predictable outcomes after various preliminaries (Taherdoost, 2016). A pilot study was done to evaluate the survey's reliability. Cronbach's Alpha, which gauges internal steadiness by exploring whether specific items on a scale measure similarly, were used for reliability analysis. The upper limit of Alpha esteem was fixed at 0.7 by Cronbach (1951). Calculations should result in a coefficient of 0.7 or above, at which point the survey tools are regarded as dependable (Kothari, 2006).

3.8 Data Analysis and Presentation

Complete questionnaires were checked for completeness and uniformity. To interpret the data, descriptive analysis, notably the standard deviation and means were utilized. Also, the study utilized tables to display the findings. The data were analyzed using SPSS version 26,

a statistical tool for social research. Pearson Correlation coefficient and Multiple linear regression model were used to determine the relationship between the independent and dependent variables

The multiple regression equation;

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

Where;

Y= Performance

B₀ - intercept coefficient

X₁ – E-auction

X₂– E-tendering

X₃– E-ordering

X₄– E-invoicing

β₁, β₂, β₃ and β₄ = regression coefficients

ε_i – Error

3.9 Diagnostic Tests

Multiple linear regression model was utilized in the research, therefore; diagnostic tests covered multicollinearity, linearity, normality, and homoscedasticity to ensure the reliability of the outcomes.

3.9.1 Multicollinearity

A variance inflation factor was used to check for multicollinearity. The standard is set up in such a way that a value of less than 10 indicates that the proximity levels can be rated. When the VIF for the predictor and dependent variables is less than 3, there is no statistical closeness; however, if the VIF is greater than 3, there is statistical closeness. According to

Myers (1990), a variance of more than 10 indicates a negative multicollinearity issue. In such a scenario, it may be necessary to get rid of some variables.

3.9.2 Normality Test

It was utilized to test whether the data has a normal distribution. It assumes that the data covers a bell curve shape before running the statistical analysis. If data does not meet the normality test, it gave poor results test (Field 2013). Shapiro-Wik test was utilized to test whether a random sample comes from a normal distribution and detect the deviation from normality due to skewedness or kurtosis. Shapiro-wik statistics range from zero to one and incase the calculated probability (p-value) is under 0.05, the data meaningfully diverges from normal (Field, 2013). The study embraced a p-value of 0.05 as the threshold for examining normality.

3.9.3 Linearity Test

The ANOVA test was used to compare group means by exploring whether there is a noteworthy difference between the means of each group. The test process generates an F statistic, which is used to determine the p-value. Calculate the nonlinear and linear elements of a pair of variables, so if the significant F value of the nonlinear component is less than 0.05, the nonlinearity is significant (Field, 2013). The study used a p-value of 0.05 to test linearity.

3.9.4 Homoscedasticity Test

The vital assumption of the regular straight relapse model is that the unpredictability that has been found in the model ought to be of a uniform sort (homoscedasticity). One would need to expect that the model has been exposed to a heteroscedasticity issue on the off chance that the supposition that isn't met by the model. It could be said that there is no heteroscedasticity

issue based on the Breusch-Pagan test for homoscedasticity, output sig. coefficients larger than 0.05.

3.10 Ethical considerations

Ethics were stressed in research investigations because they entail interactions with individuals or sensitive information; as a result, it is crucial to keep appropriate behavior in mind during these encounters. Therefore, the researcher produced an introductory letter from Kenyatta University in order to request authorization to gather data from chosen respondents and access pertinent documents. Additionally, the study permit from NACOSTI was acquired. Before including participants in the survey, informed consent was requested from them. The respondents were guaranteed that the study is solely for scholarly reasons, that their participation is voluntary, and that there was no direct or indirect threat as a result of the study. Privacy was protected during the data gathering process by securely storing the data amassed from the members of those who are not participating in the study. Respondents were requested not to include their names on the evaluation instruments that were handed to them in order to maintain the respondents' anonymity.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This part outlines the discoveries of the concentrate on the effect of e-procurement practices on performance of Kiambu County Government. This segment shows the features of participants as well as the discoveries according to the review's objectives. To examine the review's discoveries, elucidating and inferential insights were likewise utilized.

4.2 Response Rate

The researcher dispatched 65 questionnaires to the chosen participants. However, 60 completed questionnaires were received back. This led to a response rate of 92,3%, which is thought to be adequate for the survey. The population as a whole was accurately represented by this response rate. A response rate of 50% is deemed adequate for analysis by Kothari (2007); a response rate of over 50% is considered good; and a response rate of over 70% is considered very good. The response rate was in this manner sufficient for the review to make applicable ends basing on the response. The discoveries were exhibited in Table 4.1.

Table 4.1 Response Rate

Category	Frequency	Percentage
Response	60	92.3
Non-response	5	7.7
Total	65	100

Source: Field Data (2023)

4.3 Demographic information

For the assurance of nature of member, the analyst asked the members to give general data. The results regarding gender, age range, education level, and county government experience are presented in this section. The outcomes are presented as follows:

4.3.1 Participants' Gender

The survey aimed to ascertain the participant's gender that participated in the survey. The outcomes were exhibited in Table 4.2.

Table 4.2 Participants' Gender

Gender	f	%
Male	36	60.0%
Female	24	40.0%
Total	60	100

Source: Field Data (2023)

The findings in Table 4.2 uncovered that 36 (60%) of the participants were male while 24 (40%) were female. This indicates that one third gender rule is achieved in the county government of Kiambu. This is consistent with the gender third rule in the New Constitution of 2010, which states that no state organ should have more than two-thirds members of the same gender.

4.3.2 Participants' Age

The participants were questioned to identify their age. The participants' age is a crucial aspect in the study because it affects experience and response patterns. The results were exhibited in Table 4.3.

Table 4.3 Participants' Age Category

Age	f	%
20 – 30 years	5	8.3%
31 – 40 years	13	21.7%
41 – 50 years	26	43.3%
Above 50 years	16	26.7%
Total	60	100

Source: Field Data (2023)

The results displayed in Table 4.3 uncovered that 8.3% of participants were between the 20 and 30 years; 21.7% were between the 31 and 40 years; 43.3% were between 41 and 50 years and 26.7% were over 50 years. This infer that Kiambu County procurement department are held by middle years of employment. This suggested that the information sought was valid and credible because it was gathered from a variety of age groups.

4.3.3 Level of Education

The participants were questioned to designate their level of education. The outcomes were exhibited in Table 4.4.

Table 4.4 Participants' Level of Education

Educational level	f	%
Diploma level	4	6.7%
Bachelor's degree	32	53.3%
Master's degree	18	30.0%
PhD	6	10.0%
Total	60	100

Source: Field Data (2023)

As per the results shown in Table 4.4, 6.7% of the participants had earned a diploma, 53.3% had earned a bachelor's degree, 30% had earned a master's degree, and 10% had earned a PhD. The findings indicated that all of the participants had the capacities to offer serious responses to the study, which rendered the findings trustworthy. The results of a study by Amutabi (2016), which found that informed respondents would give accurate and sufficient information since they were well-educated, confirm these conclusions.

4.3.4 Working Experience

With regard to this, participants highlighted their working experience and results exhibited in Table 4.5.

Table 4.5 Participants' Work Experience

Working experience	f	%
Below 5 years	16	26.7%
5 – 10 years	35	58.3%
Above 10 years	9	15.0%
Total	60	100

Source: Field Data (2023)

As per the results in Table 4.5, 58.3% of participants had worked for the Kiambu county government for period between 5 and 10 years, 26.7% for less than 5 years while 15.0% for more than ten years. The results unambiguously show that the majority of employees have tenures of more than five years. These findings exhibit that the participants who took part in the survey had the relevant experience to offer the data the study needed to conduct its investigation.

4.4 Descriptive Statistics

For descriptive statistics expression, the study utilized percentage mean and standard deviation.

4.4.1 E-auction

First objective was to determine the effect of e-auction on performance of Kiambu County Government. The participants were asked to specify their level of agreement with each parameter related to e-auction effect on performance on a scale of 1 to 5 from 1-strongly disagreed to 5-strongly agreed. The responses from the participants were exhibited in Table 4.6

Table 4.6 Descriptive statistics for E-auction Practices

Statements	n	Mean	Standard Deviation
E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers.	60	3.57	0.76
E-auction enables financial savings in the association.	60	3.68	0.82
E-auction improves transparency of the whole procurement process.	60	3.62	0.78
E-auction enables access to a superior supplier base.	60	3.51	0.89
E-auction lower transaction costs such as lowering ordering costs.	60	3.83	0.85
E-auction aids in decreasing the corruptive or unfair behavior.	60	3.74	0.65
Average scores		3.66	0.79

Source: Survey Data (2023)

As per the outcomes shown in Table 4.6, most participants agreed that e-auction affect the performance of the county government of Kiambu as indicated by an average mean score of 3.66 and standard deviation of 0.79. Also, the participants agreed that E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers

(mean = 3.57; standard deviation = 0.76). The participants agreed that E-auction enables financial savings in the association (mean = 3.68; standard deviation = 0.82). The participants also agreed that E-auction improves transparency of the whole procurement process (mean = 3.62; standard deviation = 0.78). E-auction allows purchasing organizations to do business with suppliers who offer the best terms and the lowest price. This is upheld by the findings of a survey by Muthoka (2016) who established that e-auction allows suppliers to indicate interest, submit bids for contracts in the shortest amount of time feasible, encourage competition for the contract, and provide an effective, apparent procurement process for the organization and suppliers. E-auction is most likely the e-procurement instrument that is causing the most significant changes in buyer/supplier interactions (Sivertsen, 2016).

Furthermore, the results uncovered show that most participants agreed that E-auction enables access to a superior supplier base (mean = 3.51; standard deviation = 0.89). The participants agreed that E-auction lower transaction costs such as lowering ordering costs (mean = 3.83; standard deviation = 0.85). Also, the participants agreed that E-auction aids in decreasing the corruptive or unfair behavior (mean = 3.74; standard deviation = 0.65). The utilization of e-auction has made buying and selling of goods and services easier. The findings concur with the outcomes of a survey by Waganda (2018) who uncovered that the numerous procurement officers agreed with the assertion that electronic auctions offer sellers and buyers a transparent environment. E-auctions are used as a negotiating tool, allowing multiple bidders to bid and sell to individual purchasers, while reverse auctions are utilized by organizations to reduce buying costs. This stimulates competition and lowers prices (Tassabehji, 2010).

4.4.2 E-tendering

The second objective aimed to examine the effect of e-tendering on performance of Kiambu County Government. The participants were inquired to specify their level of agreement with each parameter related to e-tendering on a scale of 1 to 5 where 1- strongly disagree to 5- strongly agree. The responses were tabulated in Table 4.7.

Table 4.7 Descriptive Statistics for E-tendering Practices

Statements	n	Mean	Standard Deviation
Tendering is done electronically where shortlisted tenders are availed online	60	3.61	0.67
The county government of Kiambu has succeeded to fasten procurement process with the aid of e-tendering	60	3.42	0.69
E-tendering has enhanced supply of quality goods and services	60	3.57	0.78
The e-tendering time has been reduced as result of e-procurement	60	3.46	0.89
There exists online competitive bidding and sourcing process	60	3.68	0.85
Average score		3.55	0.78

Source: Survey Data (2023)

The results provided in Table 4.7 showed that most participants felt that e-tendering had an impact on Kiambu county's operational performance, as evidenced by an overall mean score of 3.55 and a standard deviation of 0.78. Additionally, the participants agreed that tendering is done electronically where shortlisted tenders are availed online (mean = 3.61; standard deviation = 0.67). The participants agreed that county government of Kiambu has succeeded to fasten procurement process with the aid of e-tendering (mean = 3.42; standard deviation = 0.69). Also, the participants agreed that E-tendering has enhanced supply of quality goods and services (mean = 3.57; standard deviation = 0.78). Electronic tender processing made it possible for numerous providers to submit their bids due to the fact that many potential

suppliers saw the tender advertisements. The e-tendering process directs tendering through a fairly organized process, where one must finish one step before moving on to the next. The outcomes are supported by results of a survey by Wanyonyi and Moturi (2015) that demonstrated that the ordering and follow-up processes might be sped up by employing information technology. The procurement capability's viability is impacted by how well web-based correspondence, online delicate promoting, and mechanized offering processes work since they give a faster, more successful interaction stream and productive data sharing.

Also, the results uncovered that most participants agreed that e-tendering time has been reduced as result of e-procurement (mean = 3.46; standard deviation = 0.89). Furthermore, the participants agreed that there exists online competitive bidding and sourcing process mean = 3.68; standard deviation = 0.85). E-tendering was linked to a shorter tender invitation procedure and resulted in more transparency in the tendering process. The results are corroborated by research by Munezero (2017), who found that e-tendering increases organization efficiency since it allows for the timely selection of the best contractor for the job. These results also corroborate those of Osir (2016), who claimed that state organizations had actualized e-tendering among other electronic administrations to make strides the effectiveness of their procurement exercises.

4.4.3 E-ordering

The objective three intended to find out the effect of e-ordering on performance in Kiambu County, Kenya. The participants were inquired to specify their level of agreement with each parameter related to e-ordering on a scale of 1 to 5 where 1 - strongly disagree to 5- strongly agree. The outcomes were exhibited in Table 4.8.

Table 4.8 Descriptive Statistics for E-ordering Practices

Statements	n	Mean	Standard Deviation
Utilization of e-ordering improves client order management	60	3.58	0.73
The uses of e-ordering minimizes corruption cases in the County Government of Kiambu	60	3.62	0.81
Ordering online is faster and easier to track than manual	60	3.55	0.63
E-ordering enhances timely order acquisitions and delivery	60	3.51	0.65
The uses of e-ordering enhances prompt approval of orders	60	3.64	0.69
Average score		3.58	0.70

Source: Survey Data (2023)

The discoveries showed in Table 4.8 established most participants agreed that e-ordering affect the performance of Kiambu County Government as shown by an average mean of 3.58 and standard deviation of 0.70. Further, the participants agreed that utilization of e-ordering improves client order management (mean = 3.58; standard deviation = 0.73). The participants agreed that uses of e-ordering minimizes corruption cases in the County Government of Kiambu (mean = 3.62; standard deviation = 0.81). Also, participants agreed that ordering online is faster and easier to track than manual (mean = 3.55; standard deviation = 0.63). Through e-ordering there is savings of cost and improvements in the way firms conduct business. The results agree with the findings of a survey by Lewis (2019) who established that utilization of e-ordering result to speed up order processing, save orders, and

boost revenue. According to Fozia, Namusonge, and Shaelle (2016) employees look for new products on the market using technological means. Prequalification of suppliers is completed online, and references for new suppliers are also verified.

Furthermore, the findings revealed that most participants agreed that E-ordering enhances timely order acquisitions and delivery (mean = 3.51; standard deviation = 0.65). The participants agreed that uses of e-ordering enhances prompt approval of orders (mean = 3.64; standard deviation = 0.69). The discoveries concurred with the results of a concentrate by Nyongesa and Moronge (2019) who uncovered that there was huge connection between electronic order processing practice and supply chain execution. The primary advantage of embracing electronic ordering is that the provider might have the option to transfer the data from the buy request promptly into their request the executives framework in the event that they can get it electronically. This gives the benefits of forestalling information re-keying by deals tasks staff and lessening the chance of request blunders. Subsequently, the requesting system is accelerated, mistakes are diminished, and a reasonable administration and review trail are given by keeping the data electronic from start to finish.

4.4.4 E-invoicing

The fourth objective was to establish the effect of e-invoicing on performance of Kiambu County Government. The participants were inquired to specify their agreement level with each parameter related to e-invoicing on a scale of 1 to 5 where 1-strongly disagree to 5-strongly agree). The findings were exhibited in Table 4.9.

Table 4.9 Descriptive Statistics for E-invoicing Practices

Statements	n	Mean	Standard Deviation
The e-invoicing has assisted in inhibiting the invoice errors thus accuracy	60	3.61	0.63
Through e-invoicing security of data is enhanced.	60	3.57	0.70
The e-invoicing has fasten timeliness settlements invoices by the suppliers.	60	3.37	0.75
The use of electronically compensation to the provider against services or goods rises audit trail	60	3.45	0.71
The processing of invoices electronically for payment preparation minimizes manual paper trail	60	3.61	0.64
Average score		3.52	0.69

Source: Survey Data (2023)

According to Table 4.9's results, the most respondents believed that e-invoicing had a considerable impact on Kiambu County Government performance, as evidenced by the average mean score of 3.52 and the standard deviation of 0.69. Furthermore, the participants agreed that e-invoicing has assisted in inhibiting the invoice errors thus accuracy (mean = 3.61; standard deviation = 0.63). The participants agreed that through e-invoicing security of data is enhanced (mean = 3.57; standard deviation = 0.70). Also, the participants agreed that e-invoicing has fasten timeliness settlements invoices by the suppliers (mean = 3.37; standard deviation = 0.75). The results inferred that e-invoicing played an important role on service delivery in Kiambu County Government. The results agree with the results of a survey by Chepkwony and Lagat (2016) who established that E-invoices give businesses the capability to handle customer and supplier information along the whole supply chain while also enhancing data privacy, source and receipt non-repudiation, and authentication.

Also, the outcomes presented in Table 4.9 revealed that most participants agreed that use of electronically pay to the provider against services or goods rises audit trail (mean = 3.61;

standard = 0.64). The participants concurred that preparing payments online by processing invoices reduces the laborious paper trail (mean = 3.61; standard deviation = 0.64). A buyer can receive, review, and pay an electronic invoice that a supplier has sent using an electronic invoicing system. a lot of e-invoicing options. These findings are corroborated by research by Waganda (2018) who established Government agencies have been able to lower expenses, streamline the billing process, shorten payment deadlines, and improve data security by using electronic invoices.

4.4.5 Performance

In this case, the study sought to determine the performance of Kiambu County Government. The respondents were asked to indicate the extent of their agreement with each statement related to performance on a scale of 1 to 5 where 1-strongly disagree to 5-strongly agree. The means and standard deviations were developed. The results were presented in Table 4.10.

Table 4.10 Descriptive Statistics for Performance

Statements	n	Min	Max	Mean	Std Dev
There is reduction in transaction costs due to e-procurement practices	60	1.00	5.00	3.66	0.63
There is reduced paper work during procurement process	60	1.00	5.00	3.54	0.68
E-procurement practices result to accountability of the procurement process	60	1.00	5.00	3.59	0.72
Adoption of e-procurement has led to an improvement in client-supplier relationship	60	1.00	5.00	3.41	0.73
E-procurement process has helped quality supply of goods	60	1.00	5.00	3.65	0.67

Source: Survey Data (2023)

Table 4.10 shows the review discoveries on execution of Kiambu Area government, most respondents concurred that there is decrease in exchange costs because of e- procurement rehearses (mean = 3.66; standard deviation=0.63), there is diminished desk work during obtainment process (mean = 3.64; standard deviation = 0.68), E- procurement rehearses result to responsibility of the acquirement interaction (mean = 3.59; standard deviation = 0.72), reception of e- procurement has prompted an improvement in client-provider relationship (mean = 3.41; also, standard deviation = 0.73) and E- procurement process has helped quality stockpile of products (mean = 3.65; standard deviation = 0.67). By leveraging the e-procurement framework, government organizations can act as buyers and browse supplier catalogs to purchase goods and services, making it possible to establish a one-stop shop for public sector procurement. The results are consistent with a study by Munyao and Moronge (2018), which discovered that electronic ordering, electronic tendering, and electronic invoicing all enhance the performance of purchasing organizations.

4.5 Model Diagnostic Tests

This part outlines the outcomes of various diagnostic diagnostics tests that were done in the study.

4.5.1 Multicollinearity

An analysis of multicollinearity was conducted. There was no multi-collinearity, as evidenced by values for Tolerance greater than 0.2 and the VIF mean being less than 10, respectively. The outcomes are shown in Table 4.11.

Table 4.11 Multicollinearity Test Results

Variable	Collinearity Statistics	
	Tolerance	VIF
E-auction	0.922	1.025
E-tendering	0.970	1.013
E-ordering	0.844	1.185
E-invoicing	0.925	1.082

Source: Field Data (2023)

According to Table 4.11's findings, tolerance values are greater than 0.2. It was determined that there was no multicollinearity among the variables because there is no a variable in this study with a VIF of 10.

4.5.2 Normality Test

Since the sample size was greater than 40, normality was determined using the Kolmogorov-Smirnov test. The findings for normality were exhibited in Table 4.12.

Table 4.12 Normality Test Results

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Organizational Performance	0.234	60	.002

a. Lilliefors Significance Correction

Source: Field Data (2023)

4.5.3 Linearity Test Results

A linear relationship was tested using regression line and scatter plot diagram. The figure demonstrated the link between e-procurement practices and corporate success. The dispersed plot should reflect an online trend. Figure 4.1 depicts the linear relationships.

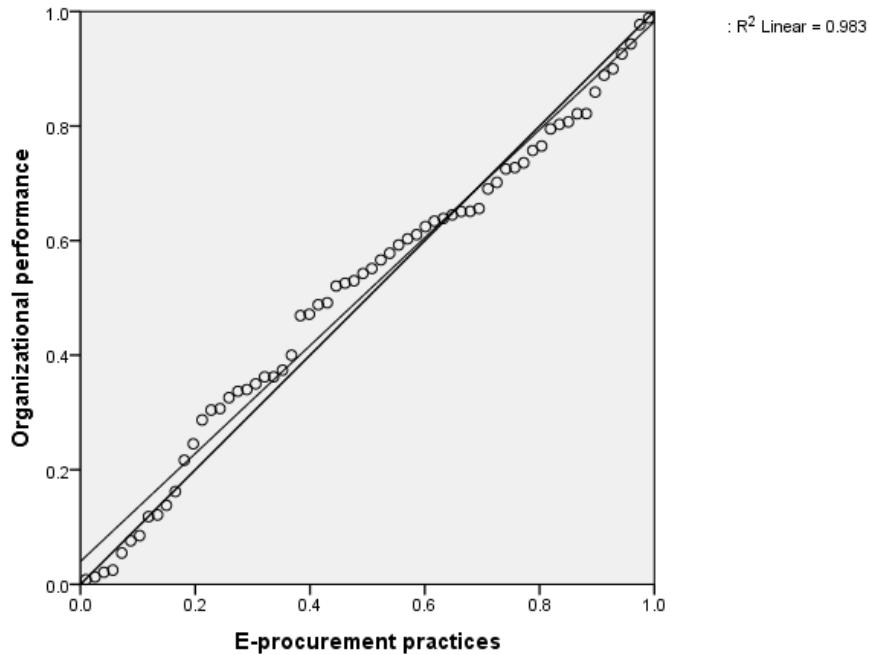


Figure 4.1 Linearity Testing

Source: Field Data (2023)

The organizational performance and e-procurement practices linearity tests are shown in Figure 4.1. The results indicate a linear association between organizational success and e-procurement procedures.

4.5.4 Heteroscedasticity

The Breusch-Pagan test was utilized to examine the heteroscedasticity. The p-value threshold of less than 0.05 was utilized.

Table 4.13 Heteroscedasticity Results

Breusch-Pagan test for heteroscedasticity

Ho: Constant variance

Variable: fitted values of organizational performance

chi2(1)	=	0.36
Prob > chi2	=	0.5104

Source: Field Data (2023)

The findings in Table 4.13 demonstrate that the p-value of 0.5104, which is more than 0.05, indicates that there was no heteroscedasticity in the data.

4.6 Multiple Linear Regression Analysis

To explore the linkage between Kiambu County Government performance and e-procurement practices, the researcher utilized multiple linear regression analysis. The outcomes are displayed in the succeeding parts;

Table 4.14 Modal Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
.894	.799	.746	.213	.799	2.47	4	56	.002

a. Predictors: (Constant), E-auction, E-tendering, E-ordering and E-invoicing
b. Dependent Variable: Performance of Kiambu County Government

Source: Field Data (2023)

The model summary is indicated by the results in Table 4.14 where R was 0.894, adjusted R square was 0.746, and R squared was 0.799 based on the results. With the R square of 0.799, the study's independent variables may account for 79.9% of performance in Kiambu County, Kenya. However, the model does not take into account other factors that account for 25.4%

of the variation in performance. On the other hand, $P = 0.002$ denotes a significant positive correlation between the study's variables.

Table 4.15 ANOVA

Model	SS	df	MS	F	Significance
Regression	8.46	4	54.3	2.47	0.002
Residual	78.43	66	0.5		
Total	86.89	185			

Source: Survey Data (2023)

According to ANOVA Table 4.15, 5% significance level, or 0.05, was utilized. The study's P-Value was 0.002, below the 0.05 level of significance and F statistic ($F = 2.47$) making it statistically significant.

Table 4.16 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.734	.168		3.920	.000
E-auction	.216	.061	.216	2.572	.002
E-tendering	.311	.072	.309	4.220	.002
E-ordering	.343	.070	.407	5.136	.004
E-invoicing	.321	.064	.368	4.453	.003

Source: Field Data

The researcher carried out a multiple regression analysis in order to determine the relationship between e-procurement practices and performance of Kiambu County, Kenya.

As per the SPSS generated table, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$) becomes:

$$Y = 0.734 + 0.216X_1 + 0.311X_2 + 0.343X_3 + 0.321X_4$$

Where Y = Performance of Kiambu County Government

X₁ = E-auction

X₂ = E-tendering

X₃ = E-ordering

X₄ = E-invoicing

4.6.1 E-auction and Organization Performance

The goal of the study was to ascertain how the Kiambu County Government's performance was impacted by the E-auction. According to Table 4.16, E-auction had a significant positive coefficient (=0.216, P-value = 0.002), which indicates that it improves Kiambu county's performance. This means that if there is improvement of e-auction practices, performance will also improve. These results support those of Waganda (2018), who found that the effectiveness of the organization's procurement function is effected by the e-auctioning procedure. E-auctions offer a transparent setting for buyers and sellers. Also, Muthoka (2016) revealed that e-auction allows suppliers to indicate interest, submit bids for contracts in the shortest amount of time feasible, encourage competition for the contract, and provide an effective, apparent procurement process for the organization and suppliers

4.6.2 E-tendering and Organization Performance

The survey aimed was to explore how E-tendering affected Kiambu County Government performance. According to Table 4.16, e-tendering had a significant positive coefficient (=0.311, P-value = 0.002), which indicates that it improves Kiambu county's performance. This implies that the county government's performance will increase if e-tendering procedures are improved. The findings support those of Gathima and Njoroge (2018), who

found that the use of electronic tendering had a positive and significant association with execution in the Nairobi City County Government at 0.307 and $P = 0.041 < 0.05$. E-bidding has also boosted competition in the tendering offer for the hospitals in Uasin Gishu County, according to Chegugu and Yusuf's 2017 research. E-tendering produced an inferential analysis result of $\beta = 0.369$; $P = 0.005$. The adoption of electronic tendering improved the process's transparency.

4.6.3 E-ordering and Organization Performance

The survey aimed was to explore how E-ordering affected Kiambu County Government performance. According to Table 4.16, E-ordering had a significant positive coefficient ($\beta = 0.343$, $P\text{-value} = 0.004$), which indicates that it improves Kiambu county's performance. The results are consistent with those of Ndei and Mutuku (2021), who found that e-ordering improves supply chain performance. As per the inferential analysis, the e-ordering had a $\beta = 0.453$; $P < 0.005$. Njoki and Nelson (2022) assert that the ability to make purchase orders and receive goods and services acquired by the utilization of the internet technology considerably improves supply chain performance.

4.6.4 E-invoicing and Organization Performance

The goal of the survey was to ascertain how E-invoicing affected Kiambu County Government performance. According to Table 4.16, E-invoicing has a significant positive coefficient ($\beta = 0.321$, $P\text{-value} = 0.003$), which indicates that it improves Kiambu county's performance. The survey findings agree with those of Mutunga and Makhamara (2020) who uncovered that e-invoicing significantly affects the execution of SMEs in Nairobi, Kenya. According to the inferential findings, $\beta = 0.531$, $P = 0.000$. The results are consistent with Tiwari, Marak, Paul, and Deshpande (2023), which found that e-invoicing increased organizational

performance and suggested organizing and putting in place processes to address all the drawbacks that impede e-procurement.

4.7 Qualitative Data Analysis

From the qualitative data, respondents noted that E-auctions introduce a higher level of transparency into the procurement process. All stakeholders, including potential bidders and the public, can access information about the auction, bids, and outcomes. This transparency helps prevent corruption, favoritism, and collusion, leading to fairer procurement processes. E-auctions open up bidding opportunities to a wider pool of potential suppliers. This increased competition can lead to better pricing, improved quality, and enhanced value for money. With more suppliers participating, county governments can obtain goods and services at more competitive rates, ultimately benefiting taxpayers.

Also, the findings show that E-tendering streamlines the procurement process by eliminating manual paperwork, reducing administrative tasks, and automating various stages such as bid submission, evaluation, and contract award. This efficiency leads to faster procurement cycles, saving time and effort for both the county and suppliers. E-tendering promotes transparency in procurement by providing a centralized platform for all stakeholders involved. It allows for open access to tender documents, bid submissions, and evaluation criteria. This transparency helps to minimize corruption, favoritism, and unethical practices, ensuring a fair and competitive procurement environment.

Concerning e-ordering, the participants noted that it helps in reducing costs associated with procurement. It eliminates the need for physical documents, printing, and mailing, reducing paper and postage expenses. Additionally, it enables better price comparison and negotiation with suppliers, facilitating cost savings for the county government. E-ordering systems

ensure accuracy by automating the order placement process, minimizing human errors, and allowing for better tracking and auditing of procurement transactions. E-ordering systems enable better supplier management through features such as supplier databases, product catalogs, and performance tracking. It becomes easier to identify reliable suppliers, maintain up-to-date information, and evaluate supplier performance, leading to more informed procurement decisions.

Regarding the E-invoicing, it streamlines the invoicing process by eliminating manual tasks, such as printing, mailing, and data entry. The respondents noted that E-invoicing reduces the risk of errors that can occur during manual data entry. With electronic invoices, data can be directly transferred from the supplier's system to the government's procurement system, minimizing the chances of transcription mistakes and ensuring greater accuracy. The participants noted that Electronic invoices create a digital trail of all transactions, making it easier to track and monitor procurement activities. This enhanced transparency helps prevent fraud and corruption by providing an auditable record of all invoices, approvals, and payments.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter reviews the key research findings before drawing conclusions and making recommendations for future research investigations.

5.2 Summary of Study Findings

5.2.1 E-auction

First objective aimed to explore the effect of e-auction on performance of Kiambu County Government. The results showed that E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers. E-auction enables financial savings in the association and improves transparency of the whole procurement process. E-auction makes it possible to access a larger pool of superior suppliers at reduced transaction costs, which reduces the cost of ordering. A transparent, efficient procurement process is provided for the organization and suppliers through e-auction, which enables suppliers to express interest, submit bids for contracts in the shortest period of time possible, and foster competition for the contract. The findings revealed that e-auction had a positive significant effect on performance of Kiambu County government as indicated by $\beta=0.216$, P-value = 0.002.

5.2.2 E-tendering

The objective two of the survey was to investigate how the performance of the Kiambu County Government was impacted by e-tendering. The outcomes uncovered that tenders are submitted electronically, and the shortlisted offers are made available online. With the help of electronic tendering, the county administration of Kiambu has been able to expedite the

procurement process. E-tendering improved access to high-quality products and services. E-procurement has decreased the time required for e-tendering. There is an online sourcing and competitive bidding process. The results revealed that e-tendering had a positive significant effect on performance of Kiambu County government as indicated by $\beta=0.311$, P-value = 0.002.

5.2.3 E-ordering

The objective three aimed to explore the effect of e-ordering on performance in Kiambu County, Kenya. The results uncovered that use of e-ordering enhances client order management. The usage of e-ordering reduces corruption cases in the Kiambu County Government. Online ordering is faster and easier to track than manual ordering. E-ordering improves order acquisition and delivery time, and its utilization improves order approval time. The findings established that e-ordering had a positive significant effect on performance of Kiambu County government as indicated by $\beta=0.343$, P-value = 0.004.

5.2.4 E-invoicing

The objective four of the survey intended to establish the effect of e-invoicing on performance of Kiambu County Government. From the discoveries, it was established that E-invoicing has aided in reducing invoice errors and therefore increasing accuracy. Data security is improved with e-invoicing. E-invoicing has shortened the time it takes suppliers to settle bills. The usage of electronic remuneration to the provider for services or goods increases the audit trail. The automated processing of invoices for payment preparation reduces costs. The results revealed that e-invoicing had a positive significant effect on performance of Kiambu County government as indicated by $\beta=0.321$, P-value = 0.003.

5.3 Conclusion

The conclusion was based on study findings.

5.3.1 E-auction

The e-auction positive significantly enhanced the performance of Kiambu County Government. E-auctions give the county government a way to contribute to a position of competitive advantage of suppliers. Through e-auctions, governments save a lot of time and money while also giving suppliers a chance to expand into new markets. The e-auctions enhanced more control over the service delivery and the entire sale process. The information is updated online. E-auction allows suppliers to express interest, submit bids for contracts in the shortest period of time possible, foster competition for the contract, and give the organization and suppliers with an effective, transparent procurement process.

5.3.2 E-tendering

The research concludes that e-tendering improved the efficiency of the Kiambu County Government. The Kiambu County Government's e-offering systems, which incorporate sellers posting their offers electronically, giving delicate determinations and records web based, getting delicate responses electronically, and advising the overall public regarding tenders. In order to strengthen and enhance the procurement function, the Kiambu County has made it mandatory for all public procurement processes to be obtained through online platforms. The cost of public sector tendering is greatly reduced while operating more effectively thanks to e-tendering.

5.3.3 E-ordering

Also, the study remarks that Kiambu County's performance is strongly impacted by e-ordering. E-ordering expedites order processing, reduces paperwork and related costs, decreases human error, aids in keeping track of order due dates, and fosters partnerships with suppliers. E-ordering also increases efficiency and effectiveness, transparency, cost and time savings, order and customer management, and productivity.

5.3.4 E-invoicing

Finally, the research concludes that e-invoicing affects significantly the performance of Kiambu County Government. E-invoicing enhances performance by facilitating an organization's smooth operation. Through effective archiving, documents may be more easily retrieved, payment cycles are shortened, saving time, account reconciliation is improved, compliance is increased thanks to security, error-free transactions, and waste is reduced.

5.4 Recommendations

The following recommendations of the study was based on study findings;

The County governments should use electronic auctions because they allow suppliers to bid competitively, which lowers their bidding prices to an ideal level where the genuine market price is obtained. The ability of each bidding supplier to observe the bids of other suppliers allows them to adjust their bids in order to get the most competitive price, further enhancing competitive prices. Sharing information with all providers taking part in the electronic reverse auctions also makes the pricing offered by the suppliers more competitive.

Electronic auctions are used primarily to get the best offers in the most aggressive manner possible, which is another reason why their adoption is recommended.

The county government should improve accounting, recording, and reporting through appropriate invoicing mechanisms. Requisition, tendering, contract warding, and payment should all be included in the automated procurement process. Additionally, the county government should improve the delivery of public services by giving both the national and county governments timely, transparent, and accurate financial and accounting information.

The county government should embrace E-ordering, particularly for electronic processing of purchase orders. This reduces the amount of manual paperwork by using the electronic approval of purchases, which will save stationery costs. This will make information transmission quicker and improve buyer-supplier relationships. The supplier receives the purchase order electronically, allowing for quicker delivery of the items.

To decrease invoice errors and increase the accuracy of invoice information, suppliers' electronic invoicing needs to be improved. According to the study, electronic invoice approval will increase transparency by allowing management to monitor the status of the tendering process.

5.5 Suggestions for further Study

This research concentrated on effect of e-procurement practices on performance of Kiambu County, Kenya. However, a research can be done on other counties to enhance generalization of study findings. The results established that e-procurement practices do not account for 100% performance of Kiambu County Government. Further research must be done on other new aspects influencing how well the Kiambu County Government performs.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Name: Reuben Obiero

Cell. No: 0791345322

Email: obieroreuben@gmail.com

Dear Sir/Madam,

RE: REQUEST FOR FILLING OF QUESTIONNAIRE

I am an MBA postgraduate student at Kenyatta University, School of business, working on a research project entitled “E-procurement practices and organizational performance of Kiambu County Government, Kenya”. It’s on this basis I humbly entreat for your help in data collecting by filling the attached research questionnaire. Information provided will be solely for academic objectives and handled in utmost credence.

Your support is highly appreciated.

Thank you.

Yours Faithfully,

APPENDIX II: RESEARCH INSTRUMENT

This study's only objective is intellectual in nature. I ask that you respond to the questions as credibly and categorically as you can. Your comments will be treated as confidential information. Nowhere on this questionnaire should your name or contact information appear. Just choose a value or enter the necessary details.

Section A: Bio data

1. Gender:

Female () Male ()

2. Age in Years:

Under 30 years ()

30– 40 years ()

41 – 50 years ()

Above 50 years ()

3. What is your educational level?

PhD ()

Master's degree ()

Bachelor's Degree ()

Diploma ()

4. Indicate your working experience:

Below 5 years ()

5 – 10 Years ()

11 – 15 Years ()

Above 15 Years ()

Section B: E-auction

5. Does electronic auction enhance performance in Kiambu county government?

Yes [] No []

Please use 5-likert scale from 5- strongly agreed to 1-strongly disagreed to present you view on stated indicators

Statement	1	2	3	4	5
E-auction improves efficiency in procurement process which involves the savings of time for sellers and buyers.					
E-auction enables financial savings in the association.					
E-auction improves transparency of the whole procurement process.					
E-auction enables access to a superior supplier base.					
E-auction lower transaction costs such as lowering ordering costs.					
E-auction aids in decreasing the corruptive or unfair behavior.					

6. In your own opinion, briefly state how e-auction affect the procurement performance?

.....

Section C: E-tendering

7. Does electronic tendering enhance procurement performance in Kiambu county government?

Yes [] No []

Please use 5-likert scale from 5- strongly agreed to 1-strongly disagreed to present you view on stated indicators

Statement	1	2	3	4	5
Tendering is done electronically where shortlisted tenders are availed online					
The county government of Kiambu has succeeded to fasten procurement process with the aid of e-tendering					
E-tendering has enhanced supply of quality goods and services					
The e-tendering time has been reduced as result of e-procurement					
There exists online competitive bidding and sourcing process					

8. In your own opinion, briefly state how e-tendering affect the procurement performance?

.....

Section D: E-ordering

9. Does electronic ordering enhance procurement performance in Kiambu county government?

Yes [] No []

Please use 5-likert scale from 5- strongly agreed to 1-strongly disagreed to present you view on stated indicators

Statement	1	2	3	4	5
Utilization of e-ordering improves client order management					
The uses of e-ordering minimizes corruption cases in the County Government of Kiambu					

Ordering online is faster and easier to track than manual					
E-ordering enhances timely order acquisitions and delivery					
The uses of e-ordering enhances prompt approval of orders					

10. In your own opinion, briefly state how e-ordering affect the procurement performance?

.....

Section E: E-invoicing

11. Does electronic invoicing enhance procurement performance in Kiambu county government?

Yes [] No []

Please use 5-likert scale from 5- strongly agreed to 1-strongly disagreed to present you view on stated indicators

Statements	1	2	3	4	5
The e-invoicing has assisted in inhibiting the invoice errors thus accuracy					
Through e-invoicing security of data is enhanced.					
The e-invoicing has fasten timeliness settlements invoices by the suppliers.					
The use of electronically compensation to the provider against services or goods rises audit trail					
The processing of invoices electronically for payment preparation minimizes manual paper trail					

12. In your own opinion, briefly state how e-invoicing affect the procurement performance?

.....

Section G: Organizational Performance

Please use 5-likert scale from 5- strongly agreed to 1-strongly disagreed to present you view on stated indicators

Statement	1	2	3	4	5
There is reduction in transaction costs due to e-procurement practices					
There is reduced paper work during procurement process					
E-procurement practices result to accountability of the procurement process					
Adoption of e-procurement has led to an improvement in client-supplier relationship					
E-procurement process has helped quality supply of goods					

Thank You.

APPENDIX III: RESEARCH AUTHORIZATION LETTER FROM KU



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/OL/CTY/20964/2020

DATE: 30th May, 2023

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

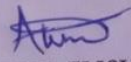
RE: RESEARCH AUTHORIZATION FOR REUBEN OBIERO - REG. NO.
D53/OL/CTY/20964/2020.

I write to introduce Reuben Obiero who is a Postgraduate Student of this University. The student is registered for M.B.A degree programme in the Department of Management Science.

Reuben intends to conduct research for a M.B.A Project Proposal entitled, **“E-Procurement Practices and Organizational Performance: A Case Study of Kiambu County Government, Kenya”**.

Any assistance given will be highly appreciated.

Yours faithfully,

fo 
PROF. ELISHIBA KIMANI
EXECUTIVE DEAN, GRADUATE SCHOOL

AM/inn



KENYATTA UNIVERSITY
GRADUATE SCHOOL

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Any assistance given will be highly appreciated.

Yours faithfully,

Fo Athina
PROF. ELISHIBA KIMANI
EXECUTIVE DEAN, GRADUATE SCHOOL

AM/Inn

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way:
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
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