

**EFFECTS OF ELECTRONIC PROCUREMENT ON SERVICE QUALITY IN KISUMU
COUNTY GOVERNMENT, KENYA**

PASSY TERESA ACHIENG AKUNO

B152/4075/2020

A Thesis submitted to the Board of Postgraduate Studies of Jaramogi Oginga Odinga University of Science and Technology in partial fulfillment of the requirements for the award of a Degree of Master in Logistics and Supply Chain Management.

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SEPTEMBER 2023

DECLARATION

This thesis has never been submitted to a university or other entity for a diploma or degree award and is fully unique. By using references, all information sources have been acknowledged.

Name: Passy Teresa Achieng Akuno

B152/4075/2020

Signature:



Date.28/09/2023

As university supervisors, we have given this thesis our consent to be examined.

Prof. Maria Onyango (PhD)

Associate Professor
School of Business and Economics

Jaramogi Oginga Odinga University of Science and Technology

Signature:



Date.28/09/2023

Dr. Aleri Odaya (PhD)

Lecturer School of Business and Economics

Jaramogi Oginga Odinga University of Science and Technology

Signature:



Date.28/09/2023

DEDICATION

I dedicate this thesis to my Dad who inspired me to this length, thank you Papa.

ACKNOWLEDGEMENT

I am grateful to the Almighty God for my sound mind, abundant resources, and excellent health during this period of study. My deepest appreciation goes to Prof. Maria, you have kept me on toes and encouraged me all through. Am grateful. Dr. Aleri my supervisor, am grateful for your supervision of the research and moral support. Patrick and Steve, you two were wonderful classmates God bless you. My coworker Nancy Ngetich; your comments have kept me moving. Dr. Vitallis Mogwambo, I salute you. Finally, may the All-Powerful God give just rewards to the librarians and personnel who voluntarily gave me the reference materials.

ABSTRACT

Organizations invest huge sums of money on technological applications with the aim of gaining competitive advantage, both at manufacturing and service delivery phases. Thus, technology has changed the landscape of operations in organizations and governments. In supply chain related services, e-procurement is adopted for acquisition of goods and services in order to facilitate objectivity in identification, product selection and payment inclusive of post-contract payment activities like contract administration and supplier relationships. The national government introduced e-procurement module in the County governments to decrease inefficiencies in public procurement. However, limited research has addressed the effect of electronic procurement on service quality in Kisumu County. To close this gap, this study set out to evaluate the effect of e-procurement on service quality. Objectives of the study included: to determine the effect of e-sourcing-tendering and e-reverse auctioning on service quality, in Kisumu County government Kenya. The target population was 97 suppliers and clients of Kisumu County government. Seventy-eight suppliers and customers were chosen at random to form the sample size, and they each received a standardized questionnaire. The Technology Acceptance Model, SERVQUAL Model and Dynamic Capability theory was used to guide the study. An explanatory research design was selected for the study. When assessing the instrument's internal dependability, a Cronbach's Alpha coefficient of 0.81 was discovered. Quantitative data were analyzed using descriptive and inferential methods. Quantitative data were analyzed using descriptive and inferential methods. The level of significance between e-procurement and service quality was tested using linear regression. The research found that e-procurement improved service quality ($R=0.534$). The research's findings showed that e-procurement significantly affected service quality ($p=0.001$; sig. value= 0.05). E-tendering was ranked first in affecting service quality ($\beta=0.94$) and had a significant effect on service quality ($p=0.000$). E-sourcing rated second in affecting service quality ($p=0.001$) and had a significant effect on the provision of quality services ($p=0.001$). E-reverse auctioning rated third in affecting service quality ($\beta=0.324$) and had a substantial effect on service quality as well ($p=0.000$). The county government and competent authorities will utilize the study's findings to help them decide what steps to take to enhance quality of service delivery through e-procurement. In addition, it is very important for the e-procurement consumers, practitioners, and institutions to evaluate the various e-procurement components employed with the goal of optimizing their procurement systems. In this study, the primary e-procurement elements in the Kisumu County government were examined: e-sourcing, e-tendering, and e-reverse auctioning. To attain the total service quality, the researcher advises that a similar study be conducted in sectors other than county governments utilizing additional e-procurement components, and that the county governments strengthen their use of e-procurement.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ACRONYMS	xii
OPERATIONAL DEFINITION OF TERMS.....	xiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background of the study	1
1.2 Problem Statement	8
1.3 Purpose, specific objectives and research hypotheses	9
1.3.1 Purpose	9
1.3.2 Specific objectives.....	9
1.3.3 Research Hypotheses.....	9
1.4 Significance of the Study	10
1.5 Scope of the Study.....	10
1.6 Limitations of the study.....	11
1.7 Assumptions of the study	11
CHAPTER TWO	12
LITERATURE REVIEW	12

2.0 Introduction	12
2.1 Theoretical Review	12
2.1.1 Technology Acceptance Model (TAM)	12
2.1.2 Dynamic Capability Theory	13
2.1.3 SERVQUAL Model	13
2.2 Conceptual Review	17
2.2.1 Concept of Service Quality.....	17
2.2.2 Concept of E-procurement.....	18
2.2.3 Concept of E-sourcing	20
2.1.4 Concept of E-tendering.....	21
2.1.5 Concept of E-reverse Auctioning	23
2.3 Empirical Review	24
2.3.1 E-sourcing and Service quality.	24
2.3.2 E-tendering and Service quality.	26
2.3.3 E-reverse auctioning and Service quality.	27
2.4. Summary of literature review and gaps identification.	29
2.5 Conceptual Framework.	30
CHAPTER THREE	31
RESEARCH METHODOLOGY	31
3.0 Introduction	31
3.1 Research design.....	31
3.1.1 Research paradigm	31
3.2 Area of Study	32

3.3 Target Population	32
3.4 Sampling technique and sample Size	32
3.4.1 Sampling technique	32
3.4.2 Sampling procedure and sample size	32
3.5 Data Collection Instrument	33
3.5.1 Questionnaire.....	33
3.6 Piloting	33
3.7 Validity.....	34
3.8 Data analysis and presentation.	34
3.8.1 Assumptions of regression Model	35
3.9 Ethical Consideration	35
CHAPTER FOUR.....	36
RESULTS AND DISCUSSIONS	36
4.0 Introduction	36
4.1 Response Rate	36
4.2 Demographic Information.....	36
4.3 E-sourcing on Service quality	38
4.4 E-tendering on Service Quality.....	42
4.5 E-reverse Auctioning on Service quality.	45
4.6 E-procurement and Service quality.....	48
CHAPTER FIVE	52
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	52
5.1 Introduction.	52

5.2 Summary of findings.....	52
5.2.1 General contribution of e-procurement to service quality.....	54
5.3 Conclusions.....	55
5.4 New knowledge.....	55
5.5 Recommendations.....	56
5.6 Suggestions for further research.....	56
REFERENCES.....	58
APPENDICES.....	68
Appendix I: LETTER OF AUTHORITY.....	68
Appendix II: LETTER OF CONSENT.....	69
Appendix III: RESEARCH QUESTIONNAIRES.....	70
Appendix IV: MAP OF KISUMU COUNTY.....	75
Appendix V: ERC LETTER.....	76
Appendix VI: NACOSTI PERMIT.....	77

LIST OF TABLES

Table 4. 2: Descriptive Statistics of e-sourcing and service quality.	39
Table 4. 3: Model Summary between e-sourcing on service quality.....	40
Table 4. 4: ANOVA between e-sourcing on service quality.	41
Table 4.5: Coefficients between e-sourcing and service quality.	41
Table 4.6: Descriptive Statistics of e-tendering and service quality.....	42
Table 4.7: Model Summary between e-tendering and service quality.....	43
Table 4.8: ANOVA of e-tendering and service quality.	44
Table 4. 9 Coefficients of e-tendering and service quality	44
Table 4.10: Descriptive Statistics of e-reverse auctioning and service quality.	45
Table 4.11: Model Summary of e-reverse auctioning and service quality	46
Table 4.12: ANOVA of e-reverse auctioning and service quality.....	47
Table 4.13: Coefficients of e-reverse auctioning and service quality.....	47
Table 4.14: Descriptive Statistics of e-procurement and service quality.....	48
Table 4.15: Model Summary of e-procurement and service quality.	49
Table 4.16: ANOVA of e-procurement and service quality.	50
Table 4.17: Coefficients of e-procurement and service quality.	51

LIST OF FIGURES

Figure 2. 1: Conceptual framework showing the relationship between e-procurement and service quality.	30
Figure 4.1: Effect of e-sourcing on service quality.....	40
Figure 4.2: Effect of e-tendering on service quality	43
Figure 4.3: Effect of e-reverse auctioning on service quality	46
Figure 4.4: Effect of e-procurement on service quality.	49

LIST OF ACRONYMS

CIPS	Chartered Institute of Purchasing and Supply
EDI	Electronic Data Interchange
E-GP	Electronic government procurement
E-MRO	Electronic Maintenance Repair and Operations
ERC	Ethics Review Commission
ERP	Enterprise Resource Planning
ICT	Information Communication Technology
JOOUST	Jaramogi Oginga Odinga University of Science and Technology
KPI	Key Performance Indicator
NACOSTI	National Commission for Science Technology and Innovation
NGO	Non-Governmental Organization
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Quotation
TAM	Technology Acceptance Model

OPERATIONAL DEFINITION OF TERMS

Electronic procurement: The process of procuring products and services electronically, including activities like identifying needs, choosing items, conducting payments, and managing post-contract payment tasks like contract administration and supplier relationships (Raghavan & Prabhu, 2004).

Electronic reverse auction: This is an internet-based, live, and continuously evolving auction in which a procurement entity engages with a pre-screened pool of suppliers. These suppliers engage in competitive bidding to secure contracts for providing goods or services that adhere to precisely defined specifications (Carter et al., 2004; Teich, Wallenius & Wallenius, 1999).

Electronic sourcing: The process of identifying, evaluating, negotiating and configuring purchases and supplier relationships using web-based applications and decision-support tools in order to support supply chains and other corporate activities (Aberdeen Group, 2002).

Electronic tendering: The online handling of processes such as the dissemination and receipt of tender details, expressions of interest, the reception of tender documents, submission of bid amounts, and the identification of successful bidders (Black, 2004).

Responsiveness: The capacity to respond deliberately and in a timely manner to customer demands or shifts in the market, aiming to establish or uphold a competitive edge, as articulated by Holweg in 2005 (p. 605).

Service quality: Refers to the provision of service that surpasses or exceeds customer expectations (A. Parasuraman, Valarie A. Zeithaml, and L. Berry, 1988).

Transparency and accountability: The practice of integrity within endeavors that serve the public interest, enabling individuals to uphold, explain, and assume responsibility for their actions, (Oliver 2004, p.3).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The term "procurement" encompasses a procedure employed by both public and private entities to acquire the necessary goods and services for their operational needs. This procurement process occurs in the initial stages of the supply chain, ultimately providing for downstream consumers. Procurement holds significant importance and often constitutes a substantial portion, sometimes even up to 70%, of an organization's revenue or operational budget dedicated to purchasing goods and services (Snider & Rendon, 2001). Numerous public sector agencies worldwide have recognized e-procurement as a crucial element of their e-government initiatives. Many have already implemented or are currently in the process of implementing buy-side e-procurement systems. The fundamental principle behind government procurement is quite straightforward: obtaining the correct items at the right time and at the appropriate price (Neupane et al., 2012).

There have been multiple definitions of e-procurement over time. According to Raghavan & Prabhu (2004), e-procurement encompasses the electronic acquisition of goods and services, encompassing all steps from identifying requirements to product selection and payment, as well as post-contract payment activities like contract management and supplier relationships. Presutti (2003) describes e-procurement as a technology-driven system utilized throughout the entire supply chain process for purchasing goods and services.

Public e-procurement has been defined as the use of information and communication technology, such as internet-based systems, by governments to engage with bidders in acquiring goods, works, and consulting services for the public sector, as noted by Davila, Gupta & Palmer (2003) and Leopold et al. (2004). It has also been characterized as an inter-organizational information system automating various aspects of the procurement process to enhance efficiency, quality, and transparency in government procurement, as outlined by Vaidya, K & Neupane (2011).

Traditionally, procurement relied on manual processes, and transactions were managed through slower, systemic procedures, as highlighted by Hawking, Stein, Wyld, & Foster (2004). Purchases were made either by physically visiting stores and following ordering protocols or by perusing catalogs and making phone calls. The emergence of e-commerce in business-to-business markets has prompted widespread adoption of new supply chain technologies globally. The procurement function, in particular, has seen significant changes, with anticipated growth in e-procurement applications covering both transactional buying and strategic sourcing activities, as suggested by Croom (2000). This transformation has altered how businesses and governments operate, resulting in a substantial uptake of supply chain-related technologies by organizations worldwide, as noted by Croom (2010).

With the advent of the internet, companies began transitioning their procurement activities online to enhance service quality. According to Hawking et al. (2004), e-procurement not only became a strategic player in the value chain but also acted as a catalyst for expanding supply chain networks. Shaw and Subramanian (2002) argued that e-procurement was indispensable in business-to-business e-commerce as it facilitated organizational coordination and integration.

The public sector has always disregarded procurement, which for years, has been marked by errors and misappropriation of public funds. These inefficiencies made it difficult to attain service quality, which led to governments around the world incorporating technology into the procurement process. According to (Doubler, 1996), organizations apply proactive procurement measures and techniques to maximize profit and contribute to organization's service quality. E-procurement aims to achieve customer satisfaction through offering quality services to consumers. Service quality plays a crucial role in corporate marketing, financial performance, and customer satisfaction.

Assessing service quality is more complex than evaluating goods due to the distinct nature of services. Therefore, it is not feasible to directly apply measurement tools designed for assessing product quality to service quality. Service quality can be defined as the degree to which it conforms to specified requirements and standards. Hence, any deviation from the prescribed criteria is considered a failure to meet the required quality standards, following a manufacturing-

based approach. Service quality can also be characterized as a state of 'zero failures,' a concept attributed to service guru Crosby, which was subsequently incorporated into ISO 9000:2005 (Crosby Ph.B., 1979). This definition proves valuable, particularly in the manufacturing industry but also within the service sector. Lastly, a value-based approach defines service quality as the level of excellence in services relative to the agreed-upon price and acceptable cost level.

Service quality encompasses a range of factors, including cost-effectiveness, efficiency, fairness, responsiveness, accountability, transparency, and, in cases involving multiple countries, compliance with international obligations (Odhiambo & Kamau, 2003). It is evident that service quality has significantly influenced customer expectations over time, considering factors such as timeliness, competitive context, and facilities (Helmsing, 2015). This aspect has become a focal point for practitioners, managers, and researchers alike. Enhancing service quality is a vital strategy for achieving success and sustainability in today's competitive economic landscape, given its substantial impact on business performance, productivity, and customer satisfaction. It also leads to improved cash flow and shareholder value, increases the likelihood of business success, encourages positive word-of-mouth referrals from customers, reduces customer attrition, and boosts customer referrals (Leonard and Sasser, 1982; Cronin and Taylor, 1992; Gammie, 1992; Hallowell, 1996; Chang and Chen, 1998; Gummesson, 1998; Lasser et al., 2000; Silvestro and Cross, 2000; Newman, 2001; Sureshchander et al., 2002; Guru, 2003).

Service quality models have evolved in tandem with shifts in customer expectations and perceptions. To illustrate, organizations seeking a competitive edge must leverage technology to collect market demand data and facilitate its exchange among entities, all aimed at elevating service quality (Berkley and Gupta, 1994). E-procurement has gained widespread popularity among businesses, industries, and governments as a potent technological tool for enhancing service quality in organizations that have embraced it (Eei, K.S., W. Husain, and N. Mustaffa, 2012).

Advanced nations have already embraced and put into practice e-procurement within both their public and private sectors. On a global scale, the adoption of e-procurement gained prominence in the United States in the early 2000s, shortly before the onset of the economic recession.

Subsequently, e-procurement has witnessed widespread acceptance, especially with advancements in technology. In a study conducted by Reddick (2004), it was reported that by the end of the same year, all state agencies had established an online presence at some stage of their procurement activities, with some actively engaging in online bidding. Croom & Johnston (2005) in their examination of e-procurement in the UK public sector, estimated that cost savings ranging from 5% to 20% could be realized in material expenses, while administrative cost savings could reach between 50% and 70%. More recent research conducted by Puschmann & Alt (2005) within the private sector revealed that the introduction of e-procurement led to administrative cost reductions of approximately 50% to 80%. However, they cautioned that this range of potential savings might not be directly transferable to the public sector due to the challenges associated with reducing staffing levels.

Chew, Temkin, and Hudson (2003) observed that the Malaysian public sector is rapidly undergoing transformation, particularly in terms of technology adoption. The Malaysian government introduced e-procurement, referred to as e-Perolehan, to facilitate tendering and online business registration within Malaysia. The government of Malaysia issued a directive encouraging all vendors to embrace the e-procurement system, as noted by Croom & Brandon-Jones (2007). The e-Perolehan system is designed to streamline government operations with the goal of enhancing the quality of services provided. Suppliers can readily participate in government tendering processes by enrolling in the e-procurement system, which not only simplifies traditional procurement procedures but also delivers dependable results, even within the intricate environment of government organizations. (Pasiopoulos, A., et al., 2013).

In the Republic of Bangladesh, the national government implemented e-Government Procurement (e-GP) in public tenders with the aim of eradicating corruption and collusive bidding practices, thereby enhancing transparency and fostering increased competition among bidders. (Mahmood, 2010). Mahmood contended that the implementation of the e-GP system by the government could lead to cost savings for the public and diminish political influence in the public bidding process.

In the process of transitioning from a decentralized to a centralized procurement system, Portugal, a European Union member state, introduced and mandated e-procurement. (Costa et al. in 2013; European Commission,2016). Portugal opted to move away from paper-based procurement in favor of electronic methods. Costa et al. (2013) highlight a number of benefits realized, such as cost reductions and decreased processing durations. However, they also identify several areas requiring improvement and challenges encountered during the implementation, including inadequate training for procurement staff and difficulties with electronic signatures.

In developed countries like Bahrain, Norway, Italy, India, Peru, Pakistan, New Zealand, Fiji, Hong Kong (China), Malaysia, Singapore, Australia, UK, USA, Denmark, and Japan, the adoption of e-procurement technology brings forth various perceived benefits. One of these benefits is the promotion of increased competition among bidders, ultimately leading to the acquisition of the highest quality goods and services. E-procurement also serves as a means for governments to accurately identify the right bidders for specific government projects. It achieves this by providing real-time bidding information, which helps alleviate issues related to asymmetric information by improving information accessibility between the government and bidders (Xinzhang & Yonggang, 2011). Moreover, e-procurement plays a role in enhancing the efficiency of document transmission while reducing the likelihood of corruption. Governments in these countries also acknowledge that e-procurement systems enable bidders to closely monitor and track bidding information, facilitating fair competition opportunities for companies and bolstering efficiency in military procurement. Additionally, e-procurement diminishes the potential for human interference in the bidding process. Furthermore, the study reveals that governments in these countries prioritize public e-procurement to enhance managerial control and foster collaboration among bidders, streamlining the procurement process for greater speed and ease, all while reducing concealed costs. These findings align with the research conducted by Liao and Cheng (2003).

In many regions, especially within the public sector, the concept of electronic procurement is just beginning to gain traction. Across numerous African nations, the adoption of legal reforms and the implementation of e-procurement have become strategies to tackle challenges related to the lack of

accountability and transparency in public sector procurement activities. Through e-procurement, African countries are now positioned to harness opportunities in the global market and compete effectively, as indicated by the World Bank (2013).

A study was conducted in Ghana to examine the challenges associated with the adoption of e-procurement in several public institutions. Ghana's Public Procurement Act, Act 663 (PPA, 2009), outlines that various public procurement entities are at different stages of implementation, with many having no form of e-procurement in place. Several Public Procuring Entities (PPE) either do not have tender notices, evaluations, and award notices available or, if they do, they are not adequately published. Furthermore, not all records of the procurement processes are stored in retrievable systems. The study focused on the Ministry of Finance (MoF) as a case area and identified employee competency, an inadequate legal framework, insufficient technological infrastructure, and security concerns related to procurement transaction data as challenges to the adoption of e-procurement in the organizations under review. The research recommended continuous training on e-procurement technology, especially for incoming staff, given the high turnover of employees. It emphasized the direct connection between an institution's ability to embrace new technology and the skills of its human resources. Effective implementation of e-procurement technology necessitates training staff in procurement processes and the use of e-procurement tools for the success of such an initiative (World Bank, 2013). Additionally, Kheng and Al-Hawandeh (2002) identified that the laws governing B2B commerce and their transition to e-procurement are still underdeveloped. The existing legal frameworks in Ghana, including the PPA 2005 and PPDR 2006, may not comprehensively cover the aspects of e-procurement transactions, potentially hindering the adoption and growth of e-procurement technology. Elsewhere in Ghana, Kumak (2012) reported that public procurement constitutes a significant portion, accounting for between 70% to 80%, of government expenditure. In this context, the presence of bottlenecks, corruption, and a lack of capacity building in procurement weaken the government's purchasing power and result in suboptimal services to citizens. Consequently, the adoption of e-procurement is considered crucial to restore integrity to the procurement process and should be pursued vigorously (Senzu & Ndebugri, 2017).

In Nigeria, the implementation of the e-GP system has resulted in heightened competition among bidders for public projects, enabling the government to make more accurate selections of the actual bidders. The e-GP system plays a pivotal role in streamlining the Nigerian government's procurement processes by removing the bottlenecks inherent in the existing system, as noted by Adebisi et al. (2010).

In Tanzania, a feasibility study conducted to assess the full implementation of e-procurement highlighted several critical factors impacting the implementation process. These factors include the readiness of the existing legislative framework, the state of Information and Communication Technologies, the adequacy of infrastructure, and the capacity of individuals involved (Sijaona, 2010; Mchopa, 2015). Additionally, Czibik et al. (2017) emphasized the importance of the Tanzanian government establishing effective monitoring and control systems within procuring entities, in alignment with the regulations set forth by the public procurement regulatory authority.

Kenya is undergoing reforms to guarantee that functions related to public procurement are carried out electronically. To revive PFM, rebuild public trust in the utilization of public finances, improve accountability and transparency, IFMIS was created. The Kenyan government automated the whole procurement process through IFMIS, including requisition, tendering, contract award, and payment, but its performance is not effectual, due to its innumerable shortcomings (CIO East Africa, 2014). E-procurement has brought a significant waste reduction in public procurement and this has seen the public sector adopting and implementing e-procurement in their various procurement processes (Addison, 2016).

Kisumu County, one of Kenya's third-largest cities, boasts a population of 1,155,574 according to the 2019 National Census. It covers a land area of 2085.9 km² and shares its borders with Siaya County to the West, Vihiga to the North, Nandi to the North East, and Kericho County to the East. The county is subdivided into eight sub-counties, namely Kisumu East, Kisumu West, Muhoroni, Kisumu Central, Nyakach, Nyando, Seme, and Kadibo, each of which is further divided into 35 wards. Kisumu county is headed by the Governor who is supported by a deputy governor. The technical capacity of the office of the governor is further supported by chief

officers for Public Information and Communication and 35 county legislature representatives who work to ensure services are delivered to the residents of Kisumu County. The county government has got nine departments, with the tenth one recently added, all to ease service delivery to Kisumu County residents.

Kisumu county government has got an established e-procurement website, easily accessible by bidders (suppliers, contractors and various service providers) who download the tender documents freely from the county website, @www.kisumu.go.ke. E-procurement has been investigated for its adoption, implementation and other key performance indicators. However, there is still inadequacies on its effects on service quality. This study aimed to bridge the existing gap within the Kisumu County government.

1.2 Problem Statement

One-third of a company's overall profit is to be attributable to the benefits of e-procurement (Zenz & Thompson, 2008). Organizations that have fully adopted and implemented e-procurement should be able to realize its benefits, (Asian Development Bank Report, 2013).

The involvement of human interaction at each phase, the discretionary handling across the entire tendering process, issues of corruption, time delays, as well as the time and cost-intensive procedures associated with traditional procurement have collectively rendered the entire tendering process inefficient (Bikshapathi & Raghu veer, 2003). Presently, suppliers, contractors, and diverse clients operating in critical sectors like health and sanitation, water and climate change, education, and capacity development, among others, face significant challenges when engaging with the Kisumu County government in their quest for service quality. These findings are based on a report from the Kenya Institute for Public Policy Research and Analysis (KIPPRA, 2012). Survey done by Transparency international (TI, 2009), reported that 41% of suppliers, and clients were not satisfied with the act of their county governments in delivering quality service. (GoK, 2015); (Addison, 2016), reports that the inefficiencies in procurement processes have made it difficult to attain service quality.

The national government of Kenya has embraced and put into practice e-procurement technology and capabilities in county governments to enhance the efficiency of public sector organizations. The research primarily centered on e-procurement technology and its impact on a specific Key Performance Indicator (KPI), namely, customer satisfaction, which is primarily determined by the quality of service provided.

Several literature reviews, reveals research done on e-procurement and financial performance as the key measure of performance indicator of organizations. However, scanty studies relating to customer satisfaction as a KPI has been done, specifically centering on the service quality. Therefore, to inform this knowledge gap, this research endeavored to explore this subject, from Kisumu County government clients and supplier's perspective.

1.3 Purpose, specific objectives and research hypotheses

In this section, it outlines study's aims, particular objectives, and the research hypothesis.

1.3.1 Purpose

The aim of this study was to examine how e-procurement affects service quality within the Kisumu County government.

1.3.2 Specific objectives

The study had the following specific aims:

- i. To determine the effect of e-sourcing on service quality in the county government of Kisumu.
- ii. To evaluate the effect of e-tendering on service quality in the county government of Kisumu.
- iii. To establish the effect of e-reverse auctioning on service quality in the county government of Kisumu.

1.3.3 Research Hypotheses

The hypotheses formulated for this study were as follows:

H₀₁: E-sourcing has no significant effect on service quality in the county government of Kisumu.

H₀₂: E-tendering has no significant effect on service quality in the county government of Kisumu.

H₀₃: E-reverse auctioning has no significant effect on service quality in the county government of Kisumu.

H₀₄: E-procurement has no significant effect on service quality in the county government of Kisumu.

1.4 Significance of the Study

The objective of this study was to gain deeper insights into the effect of e-procurement on service quality within the Kisumu County government. The county government and relevant authorities will employ the results of this study to make informed decisions regarding the improvement of a crucial performance metric, namely customer satisfaction. They will achieve this by examining the notable effect of each of the e-procurement components under investigation on the overall quality of service delivery. This study holds significance for practitioners, users of e-procurement, and institutions, as it offers an opportunity to evaluate the diverse components of e-procurement implementation with the aim of enhancing their procurement systems. Additionally, this research will contribute to a deeper comprehension of service quality as a Key Performance Indicator (KPI) for organizational performance.

1.5 Scope of the Study

The study investigating the effect of e-procurement on service quality was carried out within the Kisumu County government, which is the third-largest city in Kenya, trailing only behind Mombasa and Nairobi. The county is home to approximately 1,155,574 residents, as reported in the 2019 National Census. Kisumu County spans a total land area of 2085.9 km². To explore the limited information available on the dependent variable, which is service quality, an explanatory research design was employed. The study utilized a probability sampling technique to reduce researcher bias and obtain results that best represent the broader population. The method of choice for determining the sample size was simple random sampling, resulting in a sample of 78

respondents selected from the total target population of 97 respondents. Data attributes were interpreted using descriptive statistics, while inferential statistics were employed to understand the relationship between the independent variable, e-procurement, and the dependent variable, service quality. The research duration spanned three years, from 2020 to 2022.

1.6 Limitations of the study

Exclusively, the study relied on the responses supplied by the participants as its primary source of information. Furthermore, certain respondents expressed reservations about disclosing certain details due to concerns that their identities could be exposed. Nonetheless, this issue was effectively addressed by obtaining official authorization letters from the Kisumu County government, JOOUST ERC, and NACOSTI. These letters affirmed that the study was conducted solely for academic purposes and assured strict adherence to confidentiality measures.

1.7 Assumptions of the study

The foundational assumption of the study rested on the premise that, throughout the data collection process, respondents provided authentic and truthful responses to the questions presented in the questionnaires.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, a comprehensive examination of pertinent literature concerning e-procurement and service quality was conducted. This review encompassed a theoretical analysis, a conceptual exploration, and an empirical assessment, collectively furnishing a framework for the conceptualization of the variables under investigation.

2.1 Theoretical Review

In this research, the Technology Acceptance Model, Dynamic Capability Theory, and SERVQUAL Model were embraced and applied as theoretical frameworks.

2.1.1 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM), an extension of the Theory of Reasoned Action (TRA) proposed by Davis in 1986, introduced two key measures for technology acceptance: perceived usefulness and perceived ease of use. Unlike TRA, TAM did not incorporate subjective norms into its framework. It was developed specifically in the realm of information technology, in contrast to TRA and the Theory of Planned Behavior (TPB), which originated in psychology. Consequently, TAM is more specialized compared to the broader applicability of TRA and TPB (Davis et al.,1989). The development of TAM can be categorized into three phases: adoption, validation, and extension. During the adoption phase, it underwent rigorous testing and found widespread adoption across various information system applications. In the validation phase, researchers recognized its effectiveness in accurately measuring user acceptance behavior across different technologies. The third phase, extension, witnessed numerous studies introducing new variables and exploring relationships between TAM constructs. In the context of this study, the focus is on the integration of technology (e-procurement) to achieve improved service quality in county government operations, aligning with the findings of Ibrahim, Hilles, Adam, et al. (2016).

2.1.2 Dynamic Capability Theory

The concept of Dynamic Capacity was initially introduced by David Teece, Gary Pisano, and Amy Shuen, as documented by Chien and Tsai (2012). This theory pertains to an organization's deliberate ability to reorganize its resources with the aim of enhancing its performance. As elucidated by Chien and Tsai in the same study, Dynamic Capability can be defined as an organization's aptitude to consciously modify its resource foundation. In order to effectively and swiftly respond to external changes, a company must be equipped to employ diverse strategies that harness and harmonize its multifaceted competencies, such as the utilization of e-procurement technology. This technology empowers the organization to construct, integrate, and leverage its competitive advantage within the business environment.

In today's ever-changing corporate landscape, the dynamics are indeed quite pronounced. Organizational culture, marketing strategies, and customer preferences are all undergoing distinct transformations. Consequently, organizations must possess the capacity to adapt to these changes in the most effective manner possible. According to the theory of dynamic capabilities, only those companies capable of achieving this agility will truly thrive in this fiercely competitive environment, as articulated by Chien and Tsai (201)2. This concept holds relevance within the context of this study, where e-procurement is central to the acquisition of resources aligned with the specific needs and operations of organizations. These resources must be procured competitively to fulfill the organizations' objectives. The ability of the Kisumu County government to strategically embrace e-procurement technology in order to impact a key performance indicator, namely, service quality, is best characterized by the principles outlined in this theory.

2.1.3 SERVQUAL Model

In the contemporary competitive business landscape, the significance of service quality cannot be overstated as it stands as a crucial pillar for achieving success and ensuring survival. It plays a pivotal role in enhancing an organization's profitability, productivity, and customer contentment. Service quality, serving as a gauge of customer satisfaction, holds a pivotal position as a Key

Performance Indicator for assessing organizational performance. While research has delved into various facets of service quality, this study aims to elucidate a model that delineates the impact of e-procurement on service quality.

Scholars contend that the foundation of service quality theory hinges on customer satisfaction and product quality (Brady and Cronin, 2001). Furthermore, it's worth noting that service quality exhibits different dimensions across various service sectors. (Pollack, 2009). Nonetheless, the measurement of service quality empowers managers to identify quality-related issues and enhance the effectiveness and excellence of services, surpassing expectations to achieve customer satisfaction. The perception of service quality has been a subject of extensive discussion over the past three decades. This heightened attention is attributable to its intangible, heterogeneous, and inseparable nature, which renders its examination somewhat more intricate compared to goods. Consequently, it is not feasible to directly apply the measurement tools used for assessing the quality of goods to evaluate service quality.

Over the past few decades, numerous models have been developed to assess service quality, with the initial attempt made by Gronroos in 1984. Gronroos distinguished between technical quality, which represents the actual performance of the service, and functional quality, which pertains to the subjective perception of the service provided. In 1994, Rust and Oliver expanded upon Gronroos' model by introducing a new dimension called the service environment. Another noteworthy model, known as SERVQUAL, was proposed by Parasuraman, Zeithaml, and Berry in 1985. They aimed to address the limitations of the Nordic model by offering a fresh approach to measuring service quality. The SERVQUAL model advocates the evaluation of service quality perception by analyzing the disparity between the expected level of service and the actual delivered level of service. Initially, Parasuraman et al. (1985) put forth ten dimensions for measuring service quality, but later, in 1988, they refined the model to include five dimensions.

This study was conducted using the GAP Analysis Model, which was developed by a team of American researchers led by Parasuraman et al. in 1985. Parasuraman and his colleagues laid the foundational theory for evaluating service quality. Their proposition revolved around the concept that service quality can be assessed by examining the disparities between customer expectations

and actual service performance along various quality dimensions. They posited that customer perceptions of quality are influenced by a series of five distinct gaps.

Gap 1 pertains to the difference between customers' expectations and management's perception of those expectations, essentially the gap stemming from not fully understanding what customers expect. This gap gauges the alignment between customer expectations and what management believes customers desire. It can occur when management lacks sufficient information about their customers' expectations, highlighting the importance of effective communication between management and customers.

Gap 2 addresses the difference between management's perception of customers' expectations and the specified standards for service quality, revealing potential shortcomings in service quality standards. This gap assesses the commitment of management to service quality and evaluates how well service delivery processes align with organizational objectives. It can arise when management understands customer expectations but hasn't established the necessary training or standards to meet those expectations.

Gap 3 signifies the disparity between service quality specifications and the actual service delivered, representing the service performance gap. This gap reflects differences between the intended service specifications and the actual service provided. It also examines the variance between the service quality management anticipates from employees and the service customers actually receive from them. If employees cannot meet expectations, customers may receive lower-quality service.

Gap 4 examines the contrast between service delivery and the communication to customers about service delivery, focusing on the discrepancy between what a company claims to provide and what customers actually experience. It evaluates whether a company's advertising and communication about its services accurately represent the reality rather than exaggerating claims. Advertising and company statements significantly shape customer expectations, emphasizing the need for truthful claims.

Gap 5 delves into the distinction between customer expectations and their perceived service, referred to as the customer gap. This study primarily measured the fifth gap, which centers on the difference between perceived service and customer expectations, influenced by word of mouth, personal needs, and past experiences. This gap essentially reflects the quality level assessed by customers, dependent on the size and direction of the four gaps associated with the delivery of service quality on the marketer's side, as noted by Chang and K.H. in 2010.

Through exploratory research methods, the fifth gap was identified and enriched with five dimensions of service quality, resulting in the creation of a measurement scale called SERVQUAL for evaluating customers' perceptions of service quality, as developed by Parasuraman et al. in 1988. At this juncture, the original ten dimensions of service quality were condensed into five dimensions, namely reliability, responsiveness, tangibles, assurance, and empathy.

The model was customized to align with the specific research requirements of Kisumu County government. In the context of this study, the dimensions of service quality can be described as follows: Tangibility pertains to the physical attributes associated with facilities, such as the level of technological advancement and capability to support e-procurement, the proficiency of procurement employees, and the availability of hardware and software. It encompasses the visible aspects that influence the perception of service quality. Reliability signifies the organization's capacity to consistently provide accurate, dependable, and punctual service delivery. The ability of the Kisumu County government to offer timely and error-free services to its clients significantly contributes to customer satisfaction. Assurance relates to the extent to which the organization fosters trust among its customers. It focuses on how effectively procurement staff within the Kisumu County government can establish credibility and trust with both service providers and clients. This dimension relies on factors such as employee dedication, communication skills, and technical expertise. Empathy involves the attentive and considerate treatment of customers to ensure they receive compassionate and personalized service. It emphasizes the importance of employees connecting with customers during service delivery and making them feel valued. This dimension goes beyond mere transactional interactions and

emphasizes building relationships. Responsiveness entails the provision of timely and satisfactory service to customers. This dimension underscores the importance of promptness and a willingness to assist. It also involves addressing inquiries and concerns promptly to reassure customers that the organization is committed to resolving their issues. Therefore, the county government must ensure that customers receive swift and efficient service without unnecessary delays.

While customer demands and requirements continually evolve, there is an ongoing opportunity to consistently work towards narrowing the gap to ensure customer contentment. Essential to this effort is providing timely training to employees aimed at enhancing customer satisfaction levels. Additionally, it is crucial to thoroughly analyze feedback and customer experiences, enabling swift actions to be taken to address any issues. Customers who perceive that a service has met their initial expectations tend to experience satisfaction. Conversely, those who believe that the service has failed to meet their expectations consistently tend to express dissatisfaction.

2.2 Conceptual Review

In this section, we delve into a conceptual literature review, which provides an overview of the definitions and concepts associated with service quality and e-procurement as proposed by different scholars.

2.2.1 Concept of Service Quality.

According to (Lovelock & Wright, 2002), providing services and goods involves leveraging innovation to do so in a way that is profitable, cost-effective and also value adding. (Arrow Smith and Try bus, 2012), describes that a key factor in determining an organization's competency and success is the quality of its services. The provision of services describes how well consumer needs are addressed, usually under the guiding principle that the customer is always right (Croom& Brandon-Jones, 2011).

Service quality evaluation has evolved beyond simply assessing its outcomes; it now encompasses the evaluation of the service delivery process and specific contextual factors.

(GroËnroos, 1990; Kotler, 1994). In this fiercely competitive environment, continuous adaptations to the service delivery process are imperative for success and long-term sustainability. (Lee et al., 2000). In situations where sustaining competitive advantage becomes challenging and products or services become indistinguishable from competitors, service innovation emerges as the most effective approach for a company to accelerate its growth and profitability, as emphasized by Chen, Tsou, and Huang (2009). Service quality has remained a paramount objective in bridging the gap between customer expectations and the actual customer experience. This study considered several key service quality attributes, including responsiveness, reliability, empathy, tangibility, and assurance.

2.2.2 Concept of E-procurement.

Due to the process of globalization and the expansion of businesses into international markets, the internet has emerged as a potent instrument for organizations to reach and impact all segments of society. E-procurement serves as a means for the general public to readily access accurate and timely information regarding public procurement while incurring minimal costs. Suppliers also gain access to procurement plans and bidding documents from public procurement entities through the internet, thereby fostering increased competition among potential bidders. This heightened competition, in turn, contributes to the advancement of economic development. (Tanner et al.,2008).

Both developing and developed countries' governments share the common objective of implementing public e-procurement technology to strengthen accountability and transparency within their government procurement processes. E-procurement has gained international recognition as a pivotal tool for curbing corruption and preventing the abuse of power, a sentiment echoed by researchers such as Sohail and Cavill in 2008, Shahkooh, Saghafi, and Abdollah in 2008, and Pictet and Bollinger in 2008. Its utility extends to the reduction of cartels, collusions, and bid rigging, especially in countries where public procurement is susceptible to political influence, such as Nepal, Bangladesh, Iraq, Sudan, and Myanmar. In addressing corruption-related challenges, information and communication technology (ICT) plays a vital

role in promoting good governance, a concept supported by scholars like Bertot, Jaeger, and Grimes in 2010 and recognized by the OECD in 2008.

According to De Boer et al. in 2002, there exist six distinct categories of e-procurement. These include e-market, e-ordering/e-maintenance repair operate, e-sourcing, e-tendering, web-based enterprise resource planning, and e-exchange/e-reverse auctioning. Each of these categories is designed with a unique purpose, featuring its distinct functionality and characteristics. There are facility requirements that must be satisfied for the usage of e-procurement. Software, hardware, and internet or network facility must be available for an e-procurement system to function (Oyediran & Akintola, 2011). E-procurement is typically supported by a variety of mediums including: phone, fax, EDI, email and internet.

E-procurement technology enables government contracting authorities to electronically acquire goods and services from their suppliers, essentially transitioning the previously manual procurement process into an internet-based electronic system. (Sila, 2013). In turn, suppliers gain the advantage of showcasing their products on the World Wide Web. They can both receive and manage government purchase orders, as well as receive payments from government agencies, all facilitated by the e-procurement system. The automation of the entire procurement cycle brings substantial benefits to suppliers, including expanded access to a wider pool of potential buyers, reduced operational costs, quicker turnaround times, additional revenue streams, and heightened customer satisfaction. This enhanced efficiency in government operations aligns with the modernization of public services, (Ojha and Palvia, 2012).

The current body of literature has recognized numerous advantages associated with the utilization of e-procurement within the public sector. They include: savings in administrative costs as a result of less paperwork, efficiency in purchasing processes, data centralization for audit and analysis, elimination of direct human interaction with bidders and significant corruption decrease, (Croom and Brandon-Jones, 2007; Gupta, Jha & Gupta, 2009; Ndou; Adebisi, Ayo & Adebisi Marion, 2010; Pathak *et al.*, 2006; Dai & Kauffman, 2001; Ghazaly, 2005; Panayiotou, Gayialis & Tatsiopoulos, 2004; Knudsen, 2003; Gardenal, 2013; Epiqtech,

2012;Bausà, Liljemo, Loozen, Rodriguez & Snaprud, 2013;Chang, H.H. and K.H. 2010). In various countries, governments have achieved improved value for money by implementing public e-procurement technology. For instance, Turkey adopted e-procurement technology in 2002 with the primary goal of enhancing efficiency and streamlining government procurement processes to obtain the highest quality and performance from bidders (Bayraktar et al.,2009). This study explores the impact of e-procurement on the quality of service delivery within the Kisumu County government.

2.2.3 Concept of E-sourcing

E-sourcing involves the practice of identifying potential new suppliers over the internet within a broad or more specific market. Aberdeen Group (2002),defines e-sourcing as the process of using web-based applications and decision-support tools to identify, assess, negotiate, and configure purchases and supplier relationships, supporting supply chains and other corporate activities. According to CIPS, e-sourcing is a web-enabled approach that utilizes collaborative technology to streamline the entire procurement process for both buyers and suppliers. E-sourcing harnesses the internet and web technology to discover and contract with new suppliers (Damavand, 2011). It's important to note that E-sourcing is still a concept in the developmental stages and is rarely implemented at a global scale within government business processes, particularly in many developing countries (Bwalya, 2014; Mugandara-Ochara, 2010). As more sources of supply become available, it fosters increased competition, a principle underscored by Paulo(2009).

E-sourcing has developed as a result of businesses investing in electronic product catalogs, online product ordering and online payments. Presently, e-sourcing is manifesting its potential by promoting close collaboration between customers and suppliers, while also enhancing the management of information and knowledge (Aberdeen Group's report,2002). According to (Booz Allen & Hamilton, 2000), e-sourcing has operational and strategic advantages. They include: Purchase cost reduction (discounts via purchase consolidation, supplier rivalry, negotiation and offer analysis), process improvement, enhancing the enterprises' capacity for

innovation, finding new sources of supply, assessing the effectiveness of current ones and integrating suppliers into creative processes. This study focused on what effect e-sourcing has on service quality, in Kisumu County government.

2.1.4 Concept of E-tendering

Promoting the widespread adoption and utilization of e-tendering as a superior alternative to the traditional paper-based process relies significantly on raising awareness (Oyediran & Akintola, 2011). E-tendering, also known as e-bidding, encompasses the electronic procedures of notifying, assessing, and selecting suppliers. (Lou & Alshawi Mustafa, 2009). It involves the digital issuance and reception of tender-related information, expressions of interest, receipt of tender documents, submission of tender bids, and the eventual selection of winning bidder(s) all conducted online. (Black, P., Du, R., & Nieto, J. G., 2005). Tendering and contract awarding represent a particularly vulnerable phase of the public procurement process, where a significant portion of corruption tends to occur, particularly in developing countries (McPheraon & MacSearraigh, 2007). This issue is particularly pronounced in countries like Nepal, where most government contracting processes still rely on paper-based systems, which inherently carry a higher potential for corrupt practices. (Bhattarai, 2011). To address these challenges, the adoption of public e-procurement can play a crucial role in mitigating the risks of corruption within the public procurement process, a concept underscored by the OECD (2008). By facilitating electronic tendering, access to tender information can be improved and secured. (Davila, Gupta & Palmer, 2003; Henriksen & Mahnke, 2005).

Through lower transaction costs and administrative expenses, e-tendering increases efficiency by 42% (Plant & Valle, 2008). Transparency, responsibility, and usability are further intangible advantages (Henriksen *et al.*, 2005, Davila *et al.*, 2003). Prospective bidders enjoy round-the-clock access to tender-related information, encompassing ongoing, concluded, and awarded tenders. Additionally, they have the option to download electronic copies of the necessary documentation for tender submissions via dedicated tender websites. In cases where printing is not feasible, potential bidders can request the delivery of documents by mail and receive addenda via email. Furthermore, they have access to information regarding the tenders advertised by

county governments and the outcomes of these awards, all facilitated through electronic tendering. This accessibility is available at any time, day or night, from the convenience of their homes or workplaces (NT Government's report, 2000). This remote access feature ensures that individuals can engage in these processes regardless of their location. (Seah, 2004).

Only authorized users are allowed to log on to a special website using a special username and password in order to download and upload documents. With an e-tendering system, a company can advertise an offer on a government website. An interested supplier signs in to the business' website, registers their contact information and downloads the pertinent tender papers. When a supplier wants to react, they draft their proposal offline and then electronically upload it on the company's website's electronic tender box. Both the tender's transmission to the site and its subsequent encryption after placement in the tender box is encrypted. The business unlocks the electronic tender box once the bid period has ended, downloads the bids, and decrypts them. Once the tender has been electronically filed via email, contract discussions are conducted while safeguarding the confidentiality of sensitive information transmitted electronically (NOIE, 2002).

The e-tendering system encompasses both open and select tenders. Within this system, the tender website offers comprehensive access to specifications, addenda, tender conditions, and project terms of reference, all of which can be viewed and directly downloaded from the platform. Access to tender information for closed tenders is restricted by passwords and is limited to qualified consultants or contractors on a project-specific basis. Bid submissions are made directly through the website, allowing contractors to print an online tender form before or after submission. Similarly, consultants have the option to submit their proposals along with any accompanying materials through the same process. It's worth noting that bids are held in the electronic tender box until the invitation to tender has concluded. Before the box is opened, no one has access to its contents. To ensure effective communication, users of the e-tender system automatically receive emails containing information related to initial project registration, notifications of addenda, and confirmations of the submission of online tender forms or proposals.

There is a trail for each login, download and upload action performed within the system. The sizes of the tender documentation files are kept to a minimal and they are available for download in popular file types (such as PDF). The primary focus of this study was to examine the effect of e-tendering on service quality within the Kisumu county government.

2.1.5 Concept of E-reverse Auctioning

An electronic trade method employed by businesses for the procurement of products and services is known as an electronic reverse auction (e-RA). As per the research conducted by Beall, Carter, Germer, Hendrik, Jap, Kaufmann, Maciejewski, Monczka, and Peterson in 2003, e-RA is an online, real-time dynamic auction in which a procuring organization engages with a pool of pre-qualified suppliers. These suppliers compete against one another to secure the opportunity to provide goods or services that adhere to precisely defined specifications. E-RA has taken the place of conventional requests for proposals (RFP) that were submitted by email or paper, followed by in-person negotiations. A reverse electronic auction can alternatively be defined as "an internet-based, live auction involving a purchasing organization and two or more invited suppliers. In this format, suppliers have the ability to submit multiple bids throughout the duration of the auction and possess a certain degree of insight into the actions of their competitors,"(Carter et al., 2004).

Over the past few decades, e-reverse auctioning has experienced significant growth and has become an integral component of many firms' procurement strategies. It has enabled users to achieve substantial cost reductions in the products they procure. (Beall et al.,2003). However, e-auctions have been a topic of debate, despite the clear advantages in terms of cost savings. Some researchers, such as Tassabehji (2006), argue that they can potentially damage relationships between suppliers and buyers, or the achieved savings may be challenging to sustain, as noted by Emiliani & Stec in 2005. In practice, e-auctions can yield varying outcomes, although the majority of scholars maintain the conceptual standpoint that when an item being auctioned online is a commodity, it should result in improved outcomes, such as greater savings. Consequently, e-auctions are viewed as a suitable approach for organizations to procure their goods and services.

There have been four primary auction categories suggested, with the first being the forward auction. In this type of auction, items or services are offered for bidding, with prices gradually rising. At the conclusion of the bidding, the participant who places the highest bid, in terms of price, emerges as the winner of the item. Sealed-bid auction is the second type. It provides a sealed bid to auctioneers, whose job it is to open all the bids and sell the object to the highest bidder. Bidders and auctioneers communicate with one another in a single round to complete it. Reverse auction, often known as Dutch auction, is the third form. With the exception of the bidding price fluctuating over time, it is quite comparable to a forward auction. The price is reduced until the seller agrees to pay the price in this reverse auction. Open declining price auction is another name for this kind of auction. The winner of a Vickrey auction, the fourth form of auction, must pay the next-highest amount of the runners-up bid (Dong-Her Shih, David Yen, Chih-Hung Cheng & MingHung Shih, 2011).

Reverse auction demands meticulous specifications for the goods or services, (Kaufmann, L. and Carter, 2004). Specificity entails the attributes of the good or service, such as quantity, specialized labor needs, frequency of services, quality standards and inspection needs, delivery dates, physical attributes, transportation needs, storage information, cost drivers for production, manufacturing processes, lead times for production, and profit margin. Reverse auctions provide cost savings of between 5%- 40% per unit (Tully, 2000). This study focused on what effect e-reverse auctioning has on service quality, in Kisumu county government.

2.3 Empirical Review

This section reviewed the empirical review demonstrating what other scholars have done in line with e-sourcing, e-tendering and e-reverse auctioning and service quality.

2.3.1 E-sourcing and Service quality.

According to (Booz Allen & Hamilton, 2000), there are two categories of e-sourcing advantages: operational and strategic. The study was grounded in the operational advantages of e-sourcing, and the research at hand investigated the impact of e-sourcing on service quality.

In a study conducted by Ochari and Kwasira (2016), they assessed the influence of electronic sourcing on the efficiency of the procurement function within the Nakuru county government. The research design employed was descriptive in nature. The study's target group consisted of 168 employees working in the procurement department of the Nakuru county government, from which a sample of 118 individuals was randomly selected. Surveys were employed as the primary data collection method. The collected quantitative data was then summarized using descriptive statistical techniques, including mean, mode, standard deviation, frequencies, and percentages. Furthermore, chi-square analysis was utilized to investigate the potential relationship between e-sourcing and procurement effectiveness. The findings of the study revealed that the Nakuru county government had embraced the concept of e-sourcing, and a favorable association was observed when considering performance. However, the study did not delve into the specifics of how e-sourcing impacts service quality in terms of reliability, responsiveness, empathy, assurance, and tangibility.

In their study conducted in 2018, Kamaru and Were aimed to assess the impact of e-procurement implementation on the performance of public sector entities, focusing on state enterprises falling under the jurisdiction of the State Department for Infrastructure as an illustrative example. The research drew upon the Information Systems Success Theory, which posits that the quality of systems and information influences users' utilization and satisfaction. Additionally, the study incorporated the Transaction Cost Theory, which emphasizes the management of coordination costs, as well as the Dynamic Capability Theory. Both descriptive and explanatory research designs were employed in this study. The population of interest comprised 142 employees in the procurement department. Given the non-uniform nature of the population, a stratified random sampling approach was adopted. The findings of the study indicated that e-sourcing had a positive impact on the performance of state-owned enterprises operating under the State Department for Infrastructure. The research demonstrated that e-sourcing had the potential to enhance return on investments, reduce costs, and elevate customer satisfaction levels. However, the study did not specifically address how e-sourcing influenced service quality. To address this

gap, the present study utilized the SERVQUAL model to gauge service quality, which is a vital component of customer satisfaction within organizational performance evaluation.

2.3.2 E-tendering and Service quality.

In their 2018 research, Gathimo and Njoroge explored the impact of e-tendering on the performance of the Nairobi County government. Their study drew upon the principles of Innovation Diffusion Theory and Transaction Cost Theory as guiding frameworks. They employed both explanatory and descriptive research designs for their investigation. The study's target group consisted of 750 employees from the finance, payments, and information technology departments. From each of these three departments, a random sample of 75 respondents was selected, forming the study's sample. Data was collected through the distribution of questionnaires to the selected sample. The results of the correlation study, conducted at a 95% confidence level, revealed a positive and substantial association between e-tendering practices and the performance of the Nairobi City County government. The study's report recommended that the Nairobi County government implement e-tendering to enhance the quality of its operations. In line with this research, the present study examines the impact of e-tendering on service quality within the Kisumu County government, utilizing a sample size of 78 respondents.

E-tendering and e-invoicing have yielded substantial enhancements in procurement performance, as reported in a study conducted by Kamotho in 2014, which investigated e-procurement and procurement performance in various state-run enterprises across Kenya. The study adopted a cross-sectional research design and involved a sample size of 54 employees. The study findings indicated a reduction in order transmission errors, lowered inventory expenses, fewer production interruptions, decreased transaction costs, shortened procurement cycles, enhanced vendor-buyer relationships, improved utilization of procurement resources, assured attainment of superior contracts, a reliable supply chain, and the delivery of top-notch goods and services. Using a sample size of 78 staffs and an explanatory design, the current study examined the effect of e-tendering, a component of e-procurement on service quality at the county government of Kisumu.

In their 2017 research, Chegugu and Yusuf aimed to assess the impact of e-tendering on the organizational performance of hospitals within the Uasin Gishu county government. The study adopted a descriptive survey approach, involving five hospitals. The sample included a total of 367 respondents, and data was primarily collected through the use of questionnaires. The investigation incorporated both quantitative and qualitative data analysis methods. The study on e-tendering revealed a significant and positive correlation that heightened competition in the hospitals' tendering processes. However, it's worth noting that the sample size for this study was exceptionally large. In contrast, the current research in Kisumu County government employs a smaller sample size of 78 respondents for the investigation.

2.3.3 E-reverse auctioning and Service quality.

In a study conducted by Nzuve in 2013, various forms of e-procurement were explored to investigate the factors influencing the adoption of e-procurement among private healthcare service providers in Nairobi. Among these forms, e-reverse auction was included. The study's findings concluded that NHIF accredited hospitals had implemented e-procurement to a moderate degree. The study used Nairobi-area hospitals that have received NHIF accreditation. However, a comparable study was required to examine county governments, particularly on effect of e-reverse auction, a component of e-procurement on service quality.

A study was conducted in 2019 to look at the effects of adding new players to the auction process by Delina, Senderáková, Olejárová, and Macik. The largest provider of reverse auction solutions in central Europe assembled a database of 4,442 real auction data instances from diverse companies, including both public and private entities, and from various types of auctions. The effect of new participants in the computerized reverse auction were supported by the research findings. According to the study's findings, adding additional members had a favorable impact on the amount of money saved in the end. The current study was conducted in Kisumu County government in Kenya, as opposed to the prior study's location, Europe. Additionally, whereas the previous study concentrated on the effect of adding new participants to the auction process, current study concentrated on effect of e-reverse auction on service quality.

In a study conducted by Majanga in 2021, the research aimed to assess the influence of electronic reverse auctions on the procurement performance of multinational pharmaceutical companies in Kenya. The study had three primary objectives: first, to gauge the extent of electronic reverse auction adoption within multinational pharmaceutical corporations in Kenya; second, to establish the correlation between electronic reverse auctions and procurement performance in these multinational pharmaceutical corporations; and third, to pinpoint the challenges encountered by these corporations when implementing electronic reverse auctions. The methodology used was a descriptive research design, and first-hand information was gathered through questionnaires that were distributed via email. A total of 68 respondents, of which 54 completed and returned the questionnaires, were included in the population, which consisted of all 34 global pharmaceutical businesses. Objective two was assessed through regression analysis, while objectives one and three were investigated using descriptive statistics. The findings indicated that multinational pharmaceutical enterprises in Kenya had, to a significant extent, embraced e-reverse auctions. This adoption led to various benefits, including access to international suppliers, competitive pricing, and the establishment of a fair competitive environment. In general, it was discovered that electronic reverse auctions affect Kenya's multinational pharmaceutical businesses' procurement performance. Global pharmaceutical enterprises have encountered challenges when implementing computerized reverse auctions. These challenges encompass high setup and maintenance expenses, insufficient backing from top-level management, limited IT literacy, and disruptions stemming from technical issues. The study proposed that to enhance their procurement performance, global pharmaceutical firms should make substantial investments in expanding their supplier pool, creating a level competitive environment, ensuring competitive pricing, prioritizing timeliness and dependability. The study involved surveying pharmaceutical companies in Kenya, while the current research focuses on service quality as the key performance indicator (KPI) for procurement performance, specifically within the context of Kisumu county government.

2.4. Summary of literature review and gaps identification.

Previous studies and the existing literature on e-procurement often did not extensively address the topic of service quality. For instance, in the research conducted by Ochari and Kwasira in 2016, titled 'The Role of Electronic Sourcing on Performance of Procurement Function in the County Government of Nakuru,' it was concluded that the county had adopted e-sourcing and found a favorable association with overall performance. However, this study did not delve into how e-sourcing specifically influenced service quality.

Similarly, in the study conducted by Kamaru and Were in 2018, which aimed to determine how the implementation of e-procurement impacted the performance of the public sector, the research employed both descriptive and explanatory research designs. Their findings indicated that e-sourcing improved the performance of state-run businesses, and they recommended that State departments should leverage e-sourcing to enhance return on investments, reduce costs, and enhance customer satisfaction. Nevertheless, like the previous study, this research did not place a strong emphasis on exploring how e-sourcing affected service quality.

The study conducted in Nairobi County by Gathimo and Njoroge in 2018, which evaluated the influence of e-tendering on the county's overall performance, revealed a significant and positive correlation between e-tendering practices and performance. However, this study did not consider the impact of e-tendering on service quality delivery. Similarly, Kamotho's study in 2014, which focused on procurement performance, followed the same pattern and did not specifically address the effects of e-tendering on service quality.

Furthermore, the results presented by Majanga in 2021 were solely centered around the influence of e-reverse auctions on the procurement performance of multinational pharmaceutical companies in Kenya. In contrast, the present study specifically acknowledges e-reverse auctioning as a facet of e-procurement and its potential impact on service quality. Consequently, this research addresses the gap in understanding the relationship between e-reverse auctioning and service quality.

2.5 Conceptual Framework.

A conceptual framework is a graphical representation that visually illustrates the variables under investigation and their interrelationships.

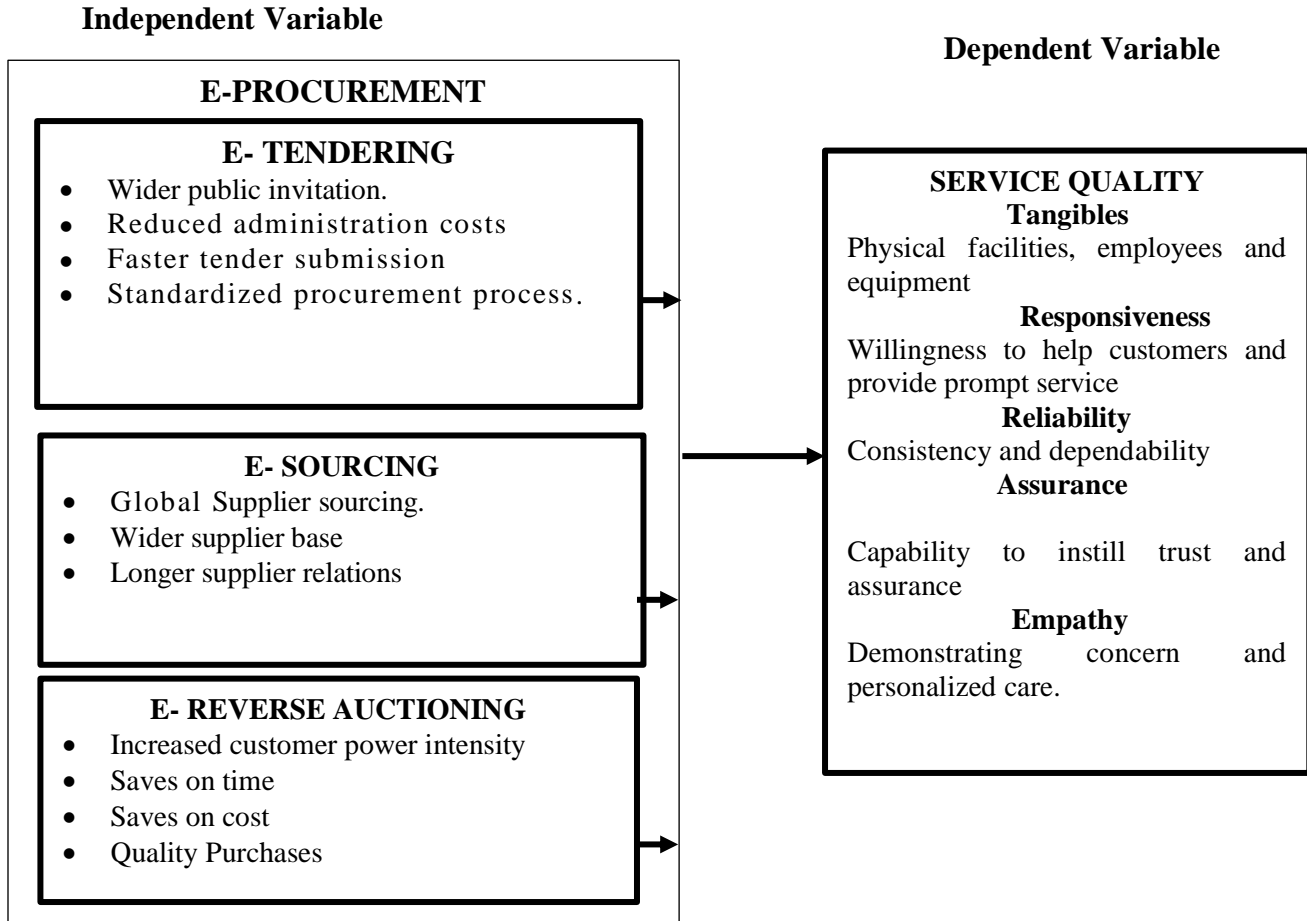


Figure 2. 1: Conceptual framework showing the relationship between e-procurement and service quality.

Source: Author Conception (2021)

Figure 2.1 illustrates the connection between the independent variable (E-procurement) and the dependent variable (Service quality). E-procurement serves as a catalyst for achieving service quality.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

In this chapter, the methodology, research design, target population, sample size, sampling method, and the validity and reliability of the study's instruments are detailed.

3.1 Research design

The study employed an explanatory research design. As stated by Kothari in 2008, a research design serves as a framework that outlines the methodology for resolving the issues under investigation. It acts as a guide for the collection, measurement, and analysis of data. The explanatory design involves refining a problem for more precise investigation by establishing working hypotheses from an operational perspective. (CR Kothari and Garg, 2014). This research model is a quantitative approach used to test a hypothesis by gathering data that either supports or contradicts it. The primary focus of this design is on discovering ideas and insights. In the case of this study, the explanatory design delves into the "cause and effect" relationship between the independent variable (E-procurement) and the dependent variable (Service quality), exploring a phenomenon with limited existing information.

3.1.1 Research paradigm

Mertens (2012) defined a paradigm as a collection of expectations that offers a conceptual framework or philosophical basis for a particular worldview. This allows researchers to structure organized studies within that worldview. This study employed positivism paradigm which is mostly used for quantitative research.

Positivism, as described by Pawlikowski, Rico, and Van Sell in 2020, is a scientific approach to understanding the world. It focuses on researchers working within the observable reality of society, which allows for the development of generalizations, (Alharahshah and Pius, 2020). This approach prioritizes the use of clean and unbiased data and facts (Scotland, 2012; Saunders et al., 2012). The positivist model aligns with the methodology of this study, as it relies on hypotheses

to either accept or reject the causal relationships between variables and predominantly employs quantitative methods to validate these hypotheses.

3.2 Area of Study

The study was conducted in the County Government of Kisumu, which is one of the 47 counties in the Republic of Kenya. There has been, a few studies on e-procurement in county governments according to the reviewed empirical literature done. These are studies from, (Ochari and Kwasira, 2016; Gathimo & Njoroge 2018), a knowledge gap that encouraged the study in Kisumu County government.

3.3 Target Population

(Orodho, 2005) defines the target population as a substantial group from which a sample size is selected. In this study, the target population consisted of 97 suppliers (GoK, 2015) and clients associated with the Kisumu County Government. The suppliers and clients were chosen as the primary target population because they are the primary users of e-procurement technology. Specifically, all activities related to e-sourcing, e-tendering, and e-reverse auctioning have a direct impact on them.

3.4 Sampling technique and sample Size

Sampling technique involves the method by which a researcher chooses a sample that accurately represents the entire group. Meanwhile, sample size pertains to the quantity of individuals included in a research study to represent a larger population.

3.4.1 Sampling technique

The research employed a probability sampling technique.

3.4.2 Sampling procedure and sample size

In this study, a probability sampling technique was employed to randomly select respondents. Specifically, the simple random sampling method, known for its unbiased approach, was used to determine the sample size from the target population. It's worth noting that sampling plays a

crucial role in ensuring research accuracy and the reliability of final results (Singh, 2018). Ultimately, the study determined that a sample size of 78 was appropriate from the initial target population of 97.

3.5 Data Collection Instrument

Data collection was conducted through the distribution of self-administered structured questionnaires, which were personally delivered. To maintain consistency, all the questions were standardized, ensuring that every respondent received identical questions with the same wording. The utilization of self-administered questionnaires offered various advantages, including cost-effectiveness, ease of administration, self-pacing, anonymity, and suitability for addressing sensitive topics, such as the subject matter of this study. Additionally, research assistants played a valuable role in facilitating the data collection process.

3.5.1 Questionnaire

Structured questionnaires are simple to analyze. Wide coverage is possible with questionnaire at the lowest possible cost in terms of money and effort. Additionally, questionnaires allow for more consistency in the way questions are posed, ensuring that the responses are more compatible. Five-point Likert scale structured questionnaires were employed. The questionnaires were divided into five sections: demographic information, effects of e-sourcing, effects of e-tendering, effects of e-reverse auctioning and the degree of service quality attainment.

3.6 Piloting

Reliability testing was done on the tools prior to use. After that, the necessary revisions and tweaks were made. The questionnaire was pre-tested in Kakamega county government to see if it was appropriate for the intended use. The target population was 107 respondents and the sample size was 48. This made it easier to redesign it and determine how much time and resources would be needed to complete the primary study successfully and efficiently. Pilot research, according to (Mugenda, 2008), should include at least 10% of the study's components and unclear questions to determine whether the planned analytical approach is adequate. The reliability coefficient was calculated to be 0.81. The research instrument was considered suitable

for use in the study due to its reliability coefficient exceeding 0.7. A Cronbach's reliability value of 0.7 or higher is generally regarded as acceptable for social research, as indicated by Mugenda and Mugenda (2008).

3.7 Validity

Validity refers to the ability of an instrument to accurately measure and generate valid results for the specific attribute or construct it purports to assess, in accordance with Cooper and Schindler (2008). To produce valid results, content validity was done on the measurement tool to cover all relevant parts of the subject it aimed to measure. Questionnaires were carefully reviewed by my supervisors. The data collection tool was made to gauge respondents' perception of how e-procurement had affected the service quality. Issues derived from the conceptual framework were contrasted with questionnaire responses.

3.8 Data analysis and presentation.

Data analysis encompasses the processes of reviewing, categorizing, summarizing, and elucidating the significance of the gathered data, as indicated by Houman (2008). In this research, quantitative data analysis techniques were employed by the researcher. Quantitative data analysis involved the utilization of both descriptive and inferential statistical methods. Descriptive statistics were used to interpret data characteristics, while inferential statistics were employed to elucidate relationships among variables. The primary descriptive statistical tool employed was frequency distribution, which provided insights into the frequency of data occurrences. Inferential statistics were harnessed to draw generalizations, predictions, and conclusions regarding sample characteristics relative to the larger population. These statistics were instrumental in establishing the existence of relationships between variables. Pearson correlation coefficient and regression analysis were computed to assess the correlation between the variables. The data was organized, coded, and analyzed using SPSS software. To evaluate the overall model significance, an analysis of variance (ANOVA) was conducted. The findings were subsequently synthesized in line with the study's objectives and were presented in tables and pie charts for clarity and comprehension.

Regression Model $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$

Where;

Y=service delivery

β_0 =represents the Model Constant.

β_1 , β_2 , and β_3 =Regression Coefficients

X1=E-sourcing

X2=E-tendering

X3=E-reverse auctioning

ϵ = the precision error term

3.8.1 Assumptions of regression Model

The multiple linear regression model used in this study followed all the assumptions necessary for transitioning to other analysis. The histogram of standardized residuals revealed that the dataset exhibited errors that were roughly normally distributed. This observation was corroborated by the normal P-P plot of standardized residuals, which exhibited points that, while not perfectly aligned with the line, closely approximated it. Furthermore, the scatterplot of standardized predicted values indicated that the data satisfied the assumptions of both homogeneity of variance (homoscedasticity) and linearity. Additionally, the data met the assumption of non-zero variances.

3.9 Ethical Consideration

A researcher is entitled to describe how he or she will ensure ethical considerations are achieved (Oso and Onen, 2012). The researcher guaranteed the respondents privacy, anonymity and confidentiality in the research conducted. Consent was given from the Kisumu County government through authorization letter (*see appendix*). The participants were provided with an explanation of the study's objectives and were assured that they had the freedom to discontinue their participation at any point if they experienced discomfort or believed their rights were being infringed upon. Before beginning the study, permission was obtained from the NACOSTI, JOOUST ERC and the Board of Postgraduate Studies in JOOUST, (*see appendix*).

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the findings of the data analysis and is structured as follows: response rate, demographic information, descriptive statistics, and inferential statistics.

4.1 Response Rate

The researcher distributed 78 questionnaires to the prequalified service providers and clients within the Kisumu County government. Out of 78 questionnaires, sixty-five (65) were fully completed and returned. This accounted for the return rate of 83.05%. An ideal response rate for survey research is 50.0 percent, states (Mugenda and Mugenda, 2009). As a result, the aforementioned response rate satisfied the criteria, making it eligible for this study.

4.2 Demographic Information

To assess the appropriateness of the respondents for the study on the effect of e-procurement on service quality in Kisumu County government, the researcher gathered data regarding the respondents' socio-economic backgrounds and characteristics. The results are presented in the following sections.

Table 4. 1: Respondents general information

		Frequency	Percent
Age of the respondent	below 30 years	21	32.4
	30-40 years	35	53.8
	40-50 years	9	13.8
	Total	65	100.0
Gender of respondents	Male	40	61.5
	Female	25	38.5
	Total	65	100.0
Level of education of the respondents	Diploma	13	20.0
	Bachelor Degree	40	61.5
	Postgraduate	12	18.5
	Total	65	100.0
Work experience of the respondents	below 5 years	2	3.1
	5-10 years	45	69.2
	10-15 years	14	21.5
	More than 15 years	4	6.2
	Total	65	100.0

Source: Survey Data (2022)

As per the results presented in Table 4.1 of this study, a notable 53.8% of the respondents fell within the age range of 30-40 years. Additionally, 32.4% of the respondents were below the age of 30 years, while 13.8% were situated between the ages of 40 and 50. These findings suggest that a significant portion of the county government's workforce consisted of individuals in their thirties and forties, implying that they were likely to provide reliable insights concerning matters related to the public procurement act. This demographic distribution is particularly relevant to this research, considering the significance of the public procurement act in the context of the study. Furthermore, it is worth noting that age-related demographic variables, as highlighted in (Reza, 2013), play a crucial role in consumer segmentation.

The statistics also showed that 61.5% of respondents were men and 38.5% were women. This indicates that both genders were encompassed in the study, ensuring a well-rounded representation for the research. Consequently, the data gathered for the study was diverse and inclusive. As (Bobbie, 2013) suggests, the demographic composition of the respondents, including gender, is a significant aspect of promoting gender equality, highlighting that

individuals of all genders are actively engaged in overseeing organizational operations, including procurement.

Further, 20% of the respondents had diploma, 61.5% had bachelor's degree while 18.5% had a postgraduate degree. This indicated that the respondents possessed the necessary qualifications and comprehended the study's objectives, thus providing pertinent information regarding service quality in Kisumu County government. These results align with the findings of (Bobbie, 2013), which suggested that educated respondents were more capable of understanding the questions and providing accurate responses in accordance with public procurement regulations and the procurement act.

In addition, respondents were asked to specify the number of years they had worked in Kisumu County government. The findings revealed that 3.1% of the respondents had less than 5 years of work experience, 69.2% had 5-10 years of work experience, 21.5% had 10-15 years of experience, and only 6.2% of the respondents had more than 15 years of work experience. This clearly suggests that the data regarding procurement compliance was gathered from respondents with substantial experience in healthcare facilities, making them well-informed about the influence of e-procurement on service quality in Kisumu County government. These results are consistent with the concept presented by Dehghan (2013), which underscores the importance of competencies such as knowledge, skills, personal traits, and abilities in determining a person's suitability for a job.

4.3 E-sourcing on Service quality

The first goal of this research was to assess the effect of e-sourcing on service quality within Kisumu County government. To collect responses, a five-point Likert scale ranging from 1 - strongly disagree (SD) to 5 - strongly agree (SA) was utilized.

Table 4. 2: Descriptive Statistics of e-sourcing and service quality.

E-sourcing	1=SD	2=D	3=U	4=AG	5=SA	TOTAL
Enhanced global sourcing	0	0	9	38	18	65
Longer supplier relations	0	0	0	41	24	65
Wider supplier base	0	0	17	37	11	65
Greater efficiency in ordering	0	5	16	36	8	65
Improved inventory management	0	5	4	42	14	65
Better decision making	0	0	0	36	29	65
Improved contract compliance	0	0	0	53	12	65
Improved market intelligence	3	0	5	28	29	65
Transparency in e-negotiations	0	0	0	47	18	65
Reduced maverick purchasing	0	0	0	51	14	65
Openness in e-negotiations	0	0	5	38	22	65
Reduced Operational & Inventory Costs.	0	0	0	32	33	65
Reduced administration costs	0	5	16	36	8	65
TOTAL	3	15	72	515		240

Source: Survey Data (2022)

Table 4.2 presented results indicating that respondents were in agreement regarding several aspects of e-sourcing. These aspects included improved global sourcing (F=38), longer supplier relationships (F=41), a broader range of suppliers (F=37), enhanced ordering efficiency (F=36), improved inventory management (F=42), better decision-making (F=36), enhanced contract compliance (F=53), improved market intelligence (F=28), transparency in e-negotiations (F=47), reduced instances of maverick purchasing (F=51), openness in e-negotiations (F=38), and reduced operational and inventory costs, which included reduced administration costs (F=32). The highest frequency (F=515) indicated that respondents generally agreed that e-sourcing had an impact on service quality within the Kisumu County government. These frequency distribution results were depicted as percentages in the pie chart below.

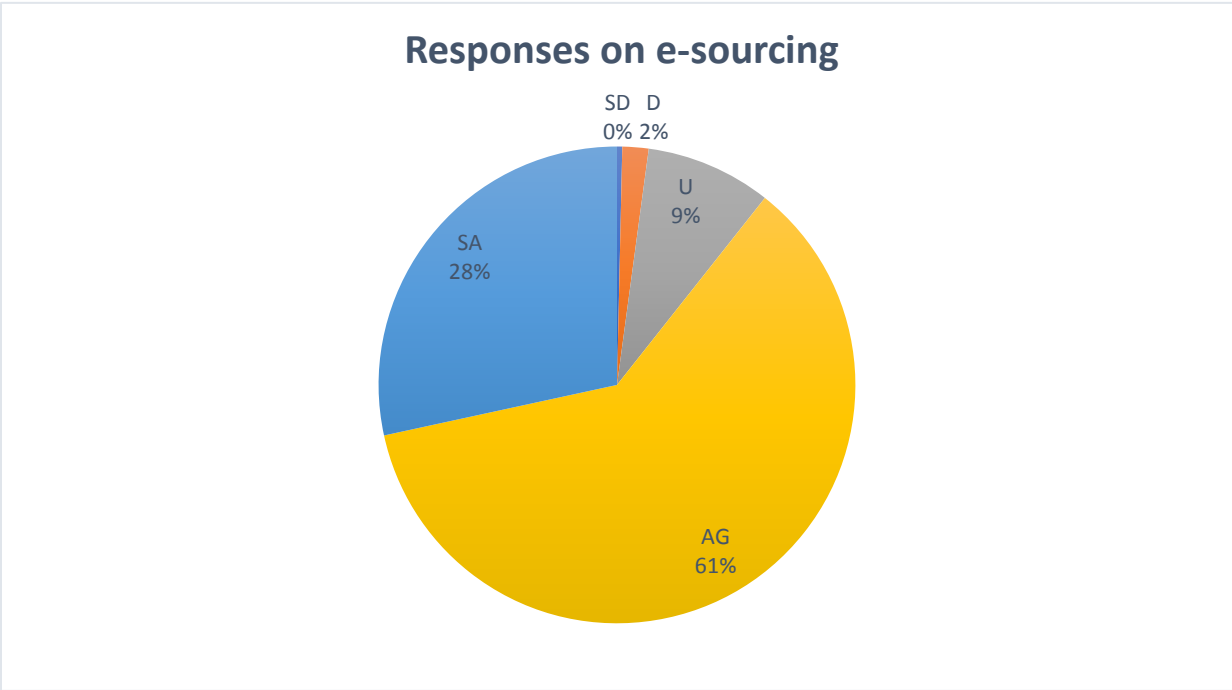


Figure 4.1: Effect of e-sourcing on service quality

Source: Survey Data (2022)

Regression analysis was employed to further assess the degree of relevance between e-sourcing and the delivery of quality services. The regression result was summarized in Tables 4.3.

Table 4. 3: Model Summary between e-sourcing on service quality.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.397a	.158	.144	.39116

a. Predictors: (Constant), e-sourcing

Source: Survey Data (2022)

R denotes the correlation between an independent variable and a dependent variable. According to Table 4.3 showing regression results, e-sourcing had a positive predictive moderate effect on service quality (R=.397; p value<0.05). The R square was.158, indicating that other variables made up 84.2% of the service quality and that e-sourcing contributed 15.8 % of it.

ANOVA Results

Table 4. 4: ANOVA between e-sourcing on service quality.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1.805	1	1.805	11.794	.001b
1 Residual	9.639	63	.153		
Total	11.444	64			

a. *Dependent Variable: service quality.*

b. *Predictors: (Constant), e-sourcing*

Source: Survey Data (2022)

The F-critical (1, 63) is lower than the F-calculated (11.794), indicating a linear relationship between the independent and dependent variables. Furthermore, the p-value, which was 0.001, is less than the significance level of 0.05. Consequently, we reject the null hypothesis, suggesting that the model is suitable for the data and effective in predicting the effect of e-sourcing on the dependent variable (service quality in Kisumu County). The findings strengthen the substantive contribution of e-sourcing to service quality, concurring with (Booz, Azllen & Hamilton, 2000) who established that e-sourcing led to operational and strategic benefits.

Table 4.5: Coefficients between e-sourcing and service quality.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.091	1.162		.079	.000
e-sourcing	.952	.277	.397	3.434	.001

a. *Dependent Variable: service quality*

Source: Survey Data (2022)

Regression model was represented as in Equation 1.

$$Quality\ service\ delivery = 0.091 + 0.952 * e-sourcing \dots\dots\dots Eq. 1$$

Standardized coefficient implies the contribution of e-sourcing to service quality, per unit increase without putting into consideration the standard errors. The results presented in Table 4.5 indicate that a change of one unit in service quality is associated with a contribution of 0.397 units in e-sourcing, with a constant value of 0.091 (significant value < 0.05).

4.4 E-tendering on Service Quality

The second aim of this study was to assess the effect of e-tendering on service quality within Kisumu County government. The responses were evaluated using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 4.6: Descriptive Statistics of e-tendering and service quality.

E-tendering	1=SD	2=D	3=U	4=AG	5=SA	TOTAL
Improved efficiency and effectiveness	0	5	4	42	14	65
Negotiated Unit Cost reduction	0	5	0	41	19	65
Public invitation to tendering	0	0	0	51	14	65
Faster tender submission	0	2	6	34	23	65
Improved visibility of internal customer demand	0	1	13	37	14	65
Price reduction	0	3	13	40	9	65
Shortened procurement cycle times	0	0	0	51	14	65
Transparent contract awarding	0	0	5	38	22	65
Standardized procurement processes across the organization	0	0	5	38	22	65
Enhanced service delivery	0	7	8	38	12	65
TOTAL	00	23	54	410		154

Source: Survey Data (2022)

Table 4.6 illustrates that respondents who were in agreement that e-tendering resulted in increased efficiency and effectiveness (F=42), negotiated unit cost reduction (F=41), enhanced public invitation to tendering (F=51), expedited tendering submission (F=34), improved visibility of internal customer demand (F=37), reduced prices (F=40), shortened procurement cycle time (F=51), transparent contract awarding (F=38), standardized procurement processes (F=38), and improved service delivery (F=38). The highest frequency of responses indicated that respondents believed e-tendering had an impact on service quality (F=410). The distribution of frequencies is depicted in the pie chart below as percentages.

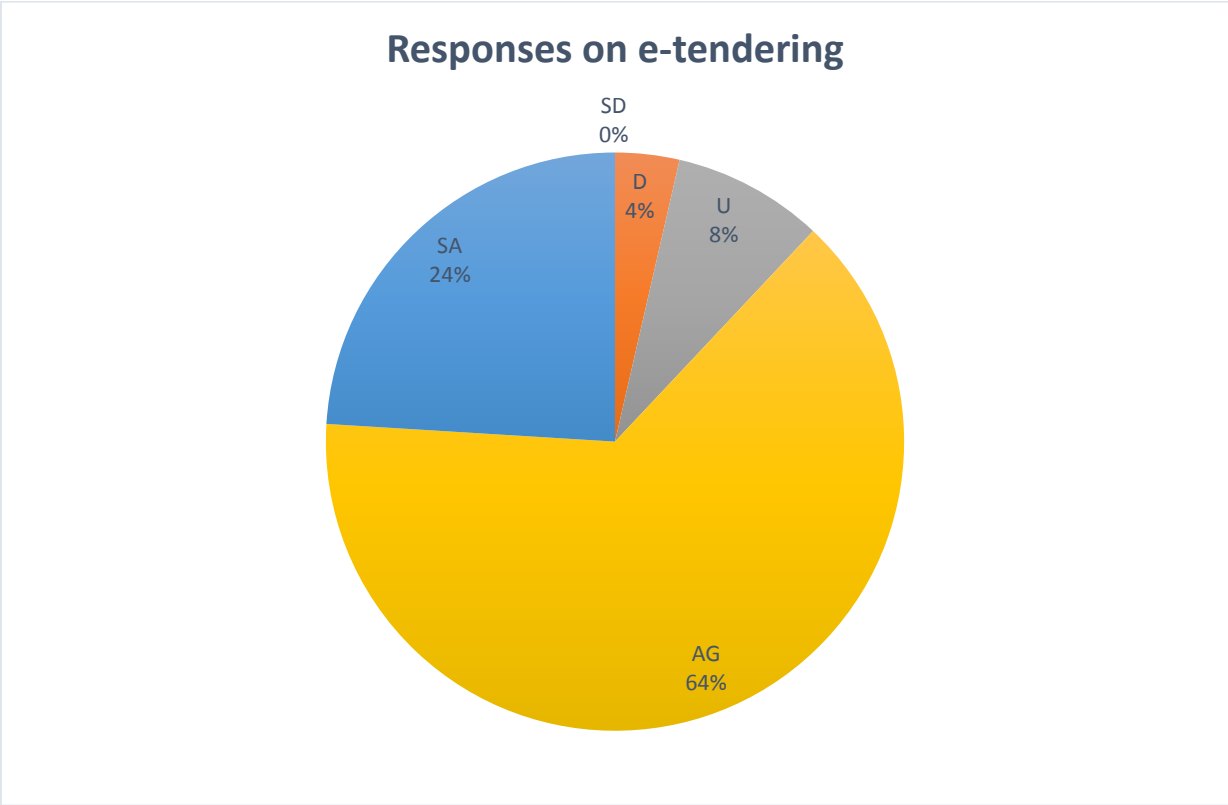


Figure 4.2: Effect of e-tendering on service quality

Source: Survey Data (2022)

Furthermore, a regression analysis was conducted to assess the significance of the correlation between e-tendering and service quality. Table 4.7 provides a summary of the regression results.

Table 4.7: Model Summary between e-tendering and service quality.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.445a	.198	.185	.170

a. Predictors: (Constant), e-tendering

Source: Survey Data (2022)

Based on the results in Table 4.7, it can be observed that e-tendering had a moderate predictive influence on service quality (R=.445; P-value <0.05). Moreover, the calculated R-square value (.198) indicates that e-tendering accounted for 19.8% of the service quality, while the remaining 80.2% was influenced by other factors.

Table 4.8: ANOVA of e-tendering and service quality.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.265	1	2.265	15.548	.000b
1 Residual	9.179	63	.146		
Total	11.444	64			

a. Dependent Variable: service quality

b. Predictors: (Constant), e-tendering

Source: Survey Data (2022)

ANOVA Results

The comparison between the F-critical (1, 63) and the F-calculated (15.548) suggests a linear relationship between the independent variables and the dependent variable. Moreover, the p-value of 0.000, which is lower than the significance level (0.05), leads to the rejection of the null hypothesis. Therefore, the model is deemed suitable for the data, making it appropriate for predicting the impact of e-tendering on the dependent variable (service quality in Kisumu County). These findings align with those of Chegugu and Yusuf (2017), who identified a significant positive correlation between e-tendering and organizational performance.

Table 4.9 Coefficients of e-tendering and service quality

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.736	.596		2.913	.004
ET	.577	.146	.445	3.952	.000

a. Dependent Variable: service quality

Source: Survey Data (2022)

Regression model was represented as in Equation 2.

$$\text{Service quality} = 1.736 + 0.577 * e\text{-tendering} \dots\dots\dots \text{Eq. 2}$$

The findings in Table 4.9 shows that for every change of unit in service quality, e-tendering contributed .445 units at a constant value of 1.736 (sig. value < 0.05).

4.5 E-reverse Auctioning on Service quality.

The last goal of the study was to ascertain the effect of e-reverse auctioning on service quality within Kisumu County government. A five-point Likert scale ranging from 1-strongly disagree (SD) to 5-strongly agree (SA) served as the foundation for collecting responses.

Table 4.10: Descriptive Statistics of e-reverse auctioning and service quality.

E-reverse auctioning	1=SD	2=D	3=U	4=AG	5=SA	TOTAL
Increased customer power intensity as a result of increased competition among bidders.	0	11	0	30	24	65
Increased quality of purchases	0	0	17	37	11	65
Reduction in procurement cycle time	0	5	16	36	8	65
Increased visibility in the entire auctioning process.	0	5	4	42	14	65
Cost savings on acquisition of purchases	0	5	41	0	19	65
TOTAL	0	26	78	145		76

Source: Survey Data (2022)

Based on Table 4.10, it was apparent that respondents were in agreement that e-reverse auctioning had led to several outcomes, including increased customer bargaining power due to heightened competition among bidders (F=30), improved purchase quality (F=37), reduced procurement cycle time (F=36), enhanced transparency throughout the auctioning process (F=42), and cost savings in procurement (F=0). The highest frequency (F=145) indicated that respondents concurred that e-reverse auctioning had an impact on service quality. The distribution of frequencies is visually presented in the pie chart below, represented as percentages.

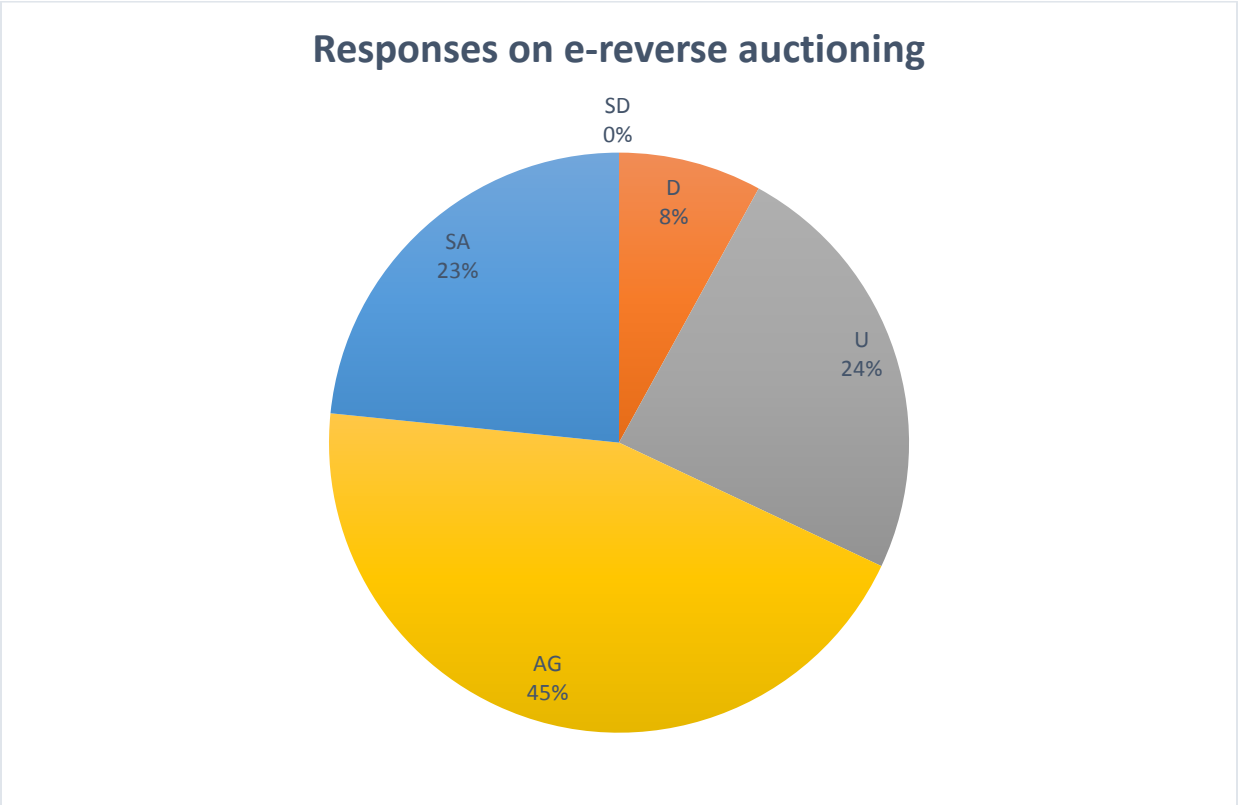


Figure 4.3: Effect of e-reverse auctioning on service quality.

Source: Survey Data (2022)

To ascertain the significance of the relationships between e-reverse auctioning and service quality, regression analysis was performed, and the results are presented below.

Table 4.11: Model Summary of e-reverse auctioning and service quality

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.515a	.265	.253	.36536

a. Predictors: (Constant), e-reverse auctioning

Source: Survey Data (2022)

Table 4.11 indicates a moderate positive impact of e-reverse auctioning on service quality. The computed R-square value (.265) suggests that 26.5% of service quality can be attributed to e-reverse auctioning, while the remaining 73.5% is influenced by other factors.

Table 4.12: ANOVA of e-reverse auctioning and service quality

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3.034	1	3.034	22.729	.000b
1 Residual	8.410	63	.133		
Total	11.444	64			

a. *Dependent Variable: service quality*

b. *Predictors: (Constant), e-reverse auctioneering*

Source: Survey Data (2022)

ANOVA Results

The F-critical value (1, 63) is lower than the calculated F-value, indicating a linear relationship between the independent variables and the dependent variable. Moreover, the p-value of 0.000 is less than the significance level of 0.05, leading to the rejection of the null hypothesis. Consequently, the model is deemed suitable for the data and is thus appropriate for predicting the impact of e-reverse auctioning on the dependent variable, which is service quality in Kisumu County. These findings align with those of Setia (2009), who asserted that e-reverse auctions can reduce procurement costs and enhance procurement efficiency.

Table 4.13: Coefficients of e-reverse auctioning and service quality

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.325	.371		6.271	.000
e-reverse auctioneering	.443	.093	.515	4.763	.000

a. **Dependent Variable: service quality**

Source: Survey Data (2022)

Regression model was represented as in Equation 2.

$$\text{Service quality} = 2.325 + 0.443 * \text{e-reverse auctioning} \dots\dots\dots (\text{Eq. 3})$$

The results presented in Table 4.13 indicate that a change of one unit in service quality is associated with a contribution of 0.515 units of e-reverse auctioning, with a constant value of 2.325 (P-value < 0.05).

4.6 E-procurement and Service quality

The primary aim of this study was to assess the effect of e-procurement on service quality within the Kisumu County government. To gather responses, a five-point Likert scale was employed, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 4.14: Descriptive Statistics of e-procurement and service quality.

E-procurement on service quality	1=SD	2=D	3=U	4=AG	5=SA	
Increased efficiency in service delivery	0	6	0	20	39	65
Reduced advertisement costs.	0	13	3	31	18	65
Reduced procurement and administration related costs	0	5	12	28	20	65
Reduced procurement cycle time and lead time	0	2	12	29	22	65
Increased quality of purchases	2	2	5	37	19	65
Increased value for money	0	1	8	45	11	65
Enhanced monitoring and tracking/visibility.	0	9	6	38	12	65
Improved customer satisfaction	0	0	9	42	14	65
Reduced human interface	0	5	2	41	17	65
Reduced procurement related fraud	0	0	8	20	37	65
TOTAL	2	43	65	331	209	

Source: Survey Data (2022)

The study's results, as shown in Table 4.14, indicate that the respondents were in agreement that e-procurement led to several positive outcomes: increased efficiency in service quality (F=20); reduced advertisement costs (F=31); decreased procurement and administration-related expenses (F=28); shortened procurement cycle time and lead time (F=29); enhanced the quality of purchases (F=37); delivered better value for money (F=45); improved monitoring, tracking, and visibility (F=38); increased customer satisfaction (F=42); reduced human interface (F=41); and decreased procurement-related fraud (F=20). The highest frequency of responses (F=331) confirmed that respondents believed e-procurement had a significant effect on service quality. The distribution of frequencies is visually summarized in the pie chart below as percentages.

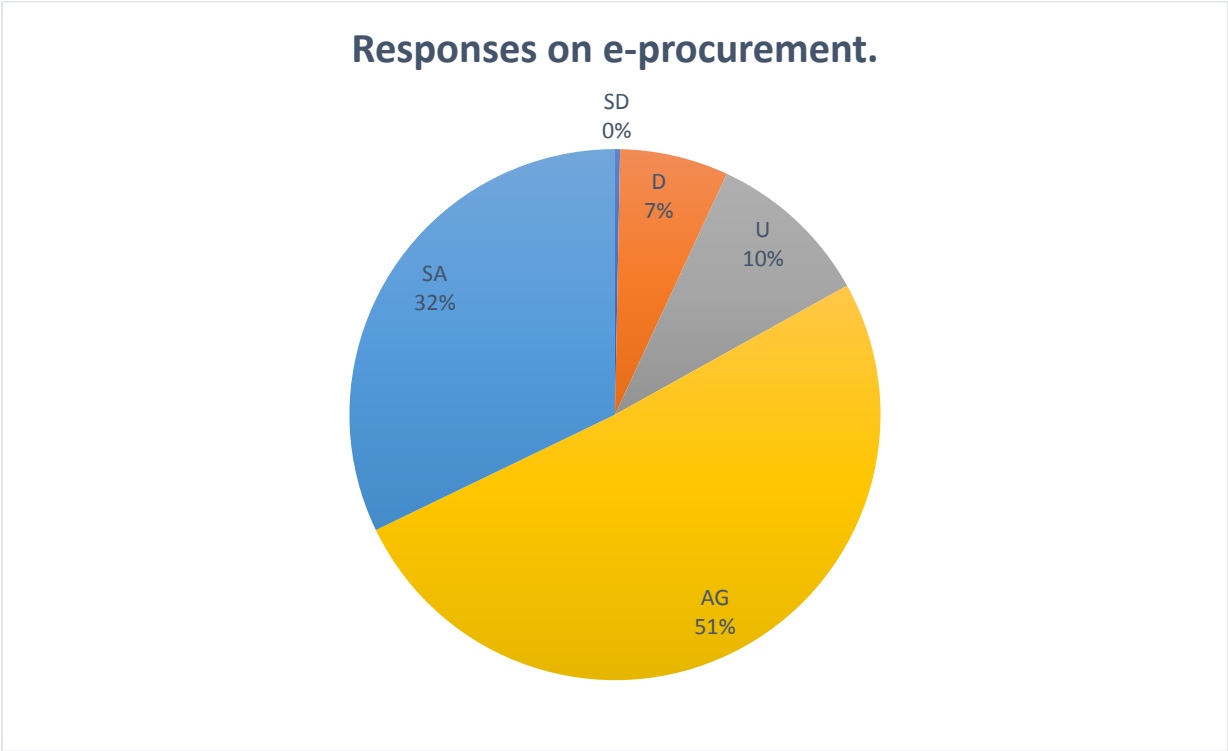


Figure 4.4: Effect of e-procurement on service quality.

Source: Survey Data (2022)

Multiple regression analysis Results

Table 4.15: Model Summary of e-procurement and service quality.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534a	.285	.250	.36621

a. Predictors: (Constant), e-reverse auctioning, e-sourcing, e-tendering

Source: Survey Data (2022)

As indicated in Table 4.15, there is a noticeable positive relationship between the independent variables and the dependent variable, as demonstrated by an R value of 0.534. The study's results suggested that the combined effect of the independent variables accounted for 28.5% of the variance in service quality, as represented by the R2. This implies that other unexamined factors

contributed 71.5% to service quality in Kisumu County. Therefore, these unexplored variables hold significant importance and should be taken into consideration when striving to improve service quality in Kisumu County.

Table 4.16: ANOVA of e-procurement and service quality.

Model	Sum of Squares	Df	Mean Square	F	Sig.
<i>l</i> Regression	3.263	3	1.088	8.112	.000b
Residual	8.181	61	.134		
Total	11.444	64			

a. Dependent Variable: service quality

b. Predictors: (Constant), e-reverse auctioning, e-sourcing, e-tendering

Source: Survey Data (2022)

ANOVA Results

The F-critical value (3, 61) was found to be lower than the F-calculated value. This indicates a linear relationship between the independent variables and the dependent variable. Furthermore, the p-value was determined to be 0.000, which is less than the significance level of 0.05. Therefore, we reject the null hypothesis. Consequently, the model can be considered a suitable fit for the data, making it appropriate for predicting the influence of the three independent variables on the dependent variable, which is service quality in Kisumu County. The respondents agreed that all the independent variables contributed to service quality. This study matches with that of other scholars (Nzuve, 2013; Majanga 2021) who found an irrefutable association between e-procurement and performance

Multiple regression co-efficient.

Additionally, the study conducted the process of acquiring the regression coefficients, and the outcomes are presented in Table 4.17 below. These coefficients, also known as beta weights, enabled the researcher to assess the relative significance of each independent variable. The study provides both unstandardized coefficients and standardized coefficients for the multiple

regression equations, although the discussions primarily focus on the unstandardized coefficients.

Table 4.17: Coefficients of e-procurement and service quality.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.925	.327		2.83	.000
e-sourcing	.355	.131	.348	2.71	.001
e-tendering	.94	.271	.732	3.47	.000
e-reverse auctioneering	.324	.051	.207	6.35	.000

a. Dependent Variable: service quality

Source: Survey Data (2022)

The Multiple regression model equation would be $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4)$ becomes: $Y = 0.925 + 0.355X_1 + 0.94X_2 + 0.324X_3$. This indicated that service quality = $0.925 + 0.355$ (E-sourcing) + 0.94 (E-tendering) + 0.324 (E-reverse auctioning).

For every change of unit in service quality at a constant of 0.925, e-sourcing contributed (0.348) units, e-tendering (0.732 units), and e-reverse auction (0.207 units). Based on the model, it was evident that e-sourcing, e-tendering, and e-reverse auctioning had a statistically significant impact on service quality at a 95% confidence interval (with a p-value < 0.05).

The study's regression analysis revealed that e-sourcing, e-tendering, and e-reverse auctioning had a statistically significant influence on service quality. Notably, improving the level of e-reverse auctioning, which had the least contribution to service quality ($\beta=0.207$), could lead to substantial improvements in service quality.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction.

This chapter presents a summary of the study's findings in accordance with the research hypotheses. It specifically offers insights into the research hypotheses, draws conclusions, provides recommendations, and suggests avenues for further research.

5.2 Summary of findings.

Firstly, the study was to test the null hypothesis that e-tendering had no effect on service quality. The study's findings indicated that, on average, e-tendering's impact on service quality led to a satisfaction level of 64% ($F=410$). The correlation analysis revealed a moderate degree of correlation between the independent variable and the dependent variable, with a coefficient of .445. This signifies a moderate relationship. The R-square value showed that e-tendering contributed approximately 19.8% to service quality, while the remaining 80.2% was influenced by other variables. The regression model was statistically significant ($F\text{-ratio}=15.548$, $p=0.000<0.05$), leading to the rejection of the null hypothesis. When examining the contribution of each independent variable, e-tendering had the highest Beta coefficient ($\beta=.445$). Consequently, it played a significant and predominant role in explaining the dependent variable when considering the variance explained by all other variables in the model. Thus, e-tendering has a demonstrable effect on service quality within the Kisumu County government.

The research ultimately established a positive relationship between e-tendering and service quality. These results align with the findings of (Gathimo and Njoroge, 2018), who investigated the correlation between performance and e-tendering practices. Furthermore, the study's outcomes are consistent with (Kamotho, 2014), whose research indicated significant improvements in procurement performance due to e-tendering and e-invoicing. The e-tendering process was shown to reduce order transmission errors, minimize production stoppages, lower transaction costs, and shorten procurement cycle times. Additionally, these findings are in line with the conclusions of (Chegugu and Yusuf, 2017), who identified a substantial and positive

association between e-tendering and organizational performance. This study's results also concur with the research of (Hanna, 2010; IMF, 2010; Mahmood, 2010; Thai, 2001).

Secondly, the study aimed to assess the null hypothesis that e-sourcing had no effect on service quality. The study's findings revealed that, on average, the satisfaction level regarding the effect of e-sourcing on service quality was 61% (F=515). Correlation analysis indicated a moderate degree of correlation between the independent variable and the dependent variable, with a coefficient of .397. Approximately 15.8% of the variance in service quality was attributed to e-sourcing, while the remaining 84.2% was influenced by other factors. The regression model was statistically significant (F-ratio=11.794; $p=0.001<0.05$), leading to the rejection of the null hypothesis. Upon examining the contribution of each independent variable, e-sourcing exhibited the second-largest Beta coefficient of ($\beta=.397$). This highlights its significant and relatively stronger unique contribution in explaining the dependent variable, even when considering the variance explained by all other variables in the model. Consequently, it can be concluded that e-sourcing does indeed have an impact on service quality within Kisumu County government.

The findings strengthen the substantive contribution of e-sourcing to service quality, concurring with (Booz, Azllen & Hamilton, 2000) who established that e-sourcing led to operational and strategic benefits. In line with this study, (Ochari and Kwasira, 2016) discovered that the county government of Nakuru had adopted the idea of e-sourcing and generated favorable association when performance was taken into account. Additionally, (Kamaru and Were, 2018) reached the conclusion that e-sourcing had a positive influence on the performance of state corporations operating within the State Department for Infrastructure in Kenya. The scholars found an indisputable correlation between e-sourcing and performance. This study findings resonates with that of (Booz, Azllen & Hamilton, 2000).

Thirdly, the study aimed to test the null hypothesis that e-reverse auctioning had no effect on service quality. The findings of the study indicated that, on average, the satisfaction level regarding the effect of e-reverse auctioning on service quality was 45% (F=145), and the correlation analysis demonstrated a moderate degree of correlation between the independent variable and the dependent variable, with a value of .515. This is interpreted as a moderate correlation. The R-square value revealed that approximately 26.5% of the variation in service

quality could be attributed to e-reverse auctioning, while 73.5% was influenced by other factors. The regression model was found to be statistically significant (F-ratio=22.729, $p=0.000<0.05$), leading to the rejection of the null hypothesis. When exploring the level of contribution of each independent variable, e-reverse auctioning had a Beta coefficient of ($\beta=.515$). Consequently, it was significant, but it made the least contribution in explaining the dependent variable when compared to the variance explained by all other variables in the model. Thus, e-reverse auctioning does have an impact on service quality in Kisumu County government.

The study's results were consistent with the findings of Setia (2009), who argued that e-reverse auctions have the potential to reduce procurement costs significantly. Setia also highlighted that e-reverse auctions could lead to a substantial reduction in procurement cycle times, up to 90%. Similarly, the study's findings were in alignment with the research of Hockey (2009), which indicated that e-reverse auctions contributed to procurement efficiency in the UK. Hockey's study also demonstrated improvements in procurement processes, cost savings realization, and reduced delivery times resulting from e-reverse auction adoption. Furthermore, Majanga (2021) suggested that global pharmaceutical companies could enhance their procurement performance by making substantial investments in e-reverse auctions. These scholars collectively found strong and undeniable associations between e-reverse auctioning and procurement performance.

Therefore, there is a need for the county government to ensure that they enhance e-reverse auctioning since it could increase customer power intensity as a result of increased competition among bidders and also increase quality of purchases. Further, county governments will realize reduction in procurement cycle time and cost saving on acquisition of purchases if they adopt the e-reverse auctioning. On the other hand, if the county government will fail to embrace e-reverse auctioning, it shall experience poor quality of purchases and prolonged procurement cycle time, which will in turn bring forth poor service quality. This study findings agrees with that of (Setia, 2009).

5.2.1 General contribution of e-procurement to service quality

Finally, the study aimed to assess the null hypothesis that e-procurement had no effect on service quality. Upon analyzing the data, the highest frequency of responses (F=331 or 51%) indicated

that respondents agreed that e-procurement had a significant effect on service quality. Regression analysis further confirmed a substantial effect of e-procurement on service quality, with an R value of 0.534. The R-square value of 0.285 suggested that 28.5% of service quality was influenced by e-procurement, while the remaining 71.5% was attributed to other factors. The statistical analysis, including the F-test, demonstrated a linear relationship between the independent variables and the dependent variable, and the p-value was 0.000, which was below the significance level of 0.05. Consequently, the null hypothesis was rejected. This indicates that respondents agreed that all the independent variables examined in the study contributed to service quality improvement. Other researchers, such as Nzuve (2013) and Majanga (2021), have also identified undeniable associations between e-procurement and overall organizational performance. Additionally, the study highlights the importance of implementing an automated procurement system to enhance service quality by increasing competitiveness and reducing administrative costs, as suggested by Ouko et al. (2009). These findings align with the research of Carter et al. (2004) and Teich, Wallenius, and Wallenius (1999).

5.3 Conclusions

After evaluating the hypotheses and analyzing the study's findings, the following conclusions were drawn: The regression analysis conducted using ANOVA demonstrated that e-procurement had a statistically significant effect on service quality within the Kisumu County government. Furthermore, the study concluded that all the independent variables examined in the study had a statistically significant effect on service quality. Among these variables, e-tendering was found to have the most substantial effect, followed by e-sourcing, and finally, e-reverse auctioning.

5.4 New knowledge

This study makes a valuable contribution to the existing knowledge base by presenting a strategic framework centered around the relational dimensions of e-procurement (e-tendering, e-sourcing, and e-reverse auctioning). This framework can be utilized by county governments as a means to enhance service quality. Furthermore, this research adds to the empirical literature by establishing a significant relationship between e-procurement and service quality within Kisumu County government. It underscores the importance of county governments prioritizing the

adoption and implementation of e-procurement technologies. In addition, this study highlights the significance of the independent variables, namely e-tendering, e-sourcing, and e-reverse auctioning, in shaping service quality. This marks a departure from traditional procurement practices that were not technology-driven. The findings from this research offer valuable insights that can guide county governments in overcoming challenges and achieving their service quality objectives through the effective implementation of e-procurement systems.

5.5 Recommendations

The study's findings and conclusions have led to the formulation of the following recommendations: Firstly, county governments should embrace e-tendering which contributes most to achieving serving quality. Majority of respondents agreed that e-tendering will ensure shortened procurement cycles. Secondly, the researcher recommended that the county government needs to increase usage of electronic sourcing since it significantly contributes to service quality. E-sourcing followed after e-tendering in terms of contribution to achieving service quality. Thirdly, county governments should encourage usage of e-reverse auctioning. The study results showed that e-reverse auctioning contributed least to every unit change in service quality thus should be improved to push service quality to higher heights. Finally, e-procurement led to enhanced transparency throughout the procurement process, underscoring the importance of allocating sufficient resources for ongoing enhancements in e-procurement to further enhance the quality of service delivery.

5.6 Suggestions for further research.

This study focused exclusively on three variables, limiting the ability to examine all e-procurement dimensions and their impact on service quality in Kisumu County government. Additional factors, including moderating variables, should be taken into account to gain deeper insights into the relationship between e-procurement and service quality. Employing a mixed-method design might offer a more comprehensive understanding of service quality, as the study predominantly relied on questionnaires for respondent assessments. Lastly, the study's findings are rooted in data collected from Kisumu County government's clients. Future research should

encompass other sectors like manufacturing and services, where e-procurement concerns may align with those of county governments.

REFERENCES

- Aberdeen Group (2002). *Making E-sourcing Strategic. From Tactical Technology to Core Business Strategy.*
- Asian Development Bank (ADB) 2013. Consolidated View & Analysis of Responses from 27 Asia Pacific Countries to Public Procurement Survey (with e-GP Overview). November 2011. Project number 43149-01. Manila
- Adebiyi, AA, Ayo, CK & Adebiyi Marion, O (2010), 'Development of Electronic Government Procurement (e-GP) System for Nigeria Public Sector', *International Journal of Electrical & Computer Sciences IJECS-IJENS*, 10 (6):74-84.
- Alshehri, M. and S. Drew. "E-Government fundamentals. in IADIS" International Conference ICT, Society and Human Beings. 2010. Citeseer.
- Aman, A & Kasimin, H (2011), 'E-procurement implementation: a case of Malaysia government', *Transforming Government: People, Process and Policy*, 5 (4): 330-44.
- Bayraktar, E, Demirbag, M, Koh, S, Tatoglu, E & Zaim, H (2009), 'A causal analysis of the impact of information systems and supply chain management practices on operational performance: evidence from manufacturing SMEs in Turkey', *International Journal of Production Economics*, 122 (1): 133- 49.
- Bausà P.O., Liljemo, K., Loozen, N., Rodriguez F., J., Snaprud, M. (2013), A final report on e-Procurement; Golden Book of Good Practice; PricewaterhouseCoopers; Europe
- Black, P., Du , R., & Nieto, J. G. (2005). Security and legal issues in e-tendering. Retrieved October 28, 2006
from <http://www.construction-innovation.com>
- Beall, S., C. Carter, P.L. Carter, T. Germer, T. Hendrick, S. Jap, L. Kaufmann, D. Maciejewski, R. Monczka, K. Petersen. "The Role of Reverse Auctions in Strategic Sourcing." *CAPS Research*, 2003, pp. 1-86
- Brandon-Jones, A. and Carey, S., (2011). The impact of user perceived e-procurement quality on system and contract compliance. *International Journal of Operations & Production.*
- Brady, K. & Cronin, J. (2001). Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach. *Journal of Marketing*, 65, 34-39.

- Bhattarai, P, (2011), 'Curbing Procurement Corruption', Voices Against Corruption. [On-line]. Available at <http://voices-against-corruption.ning.com/profiles/blogs/curbing-procurement-corruption>. [Retrieved May 10, 2011]
- Booz Allen & Hamilton. E-sourcing: 21 Century Purchasing, 2000.
- Berkley, B. a. G. A., 1994. Improving service quality with information technology. *International Journal of Information Management*, Volume 14, pp. 109-21.
- Bertot, JC, Jaeger, PT & Grimes, JM (2010), 'Using ICTs to create a culture of transparency:E-government and social media as openness and anti-corruption tools for societies', *Government Information Quarterly*, 27 (3): 264-71.
- Bikshapathi, K., & Raghuv eer, P. (2003) Factors affecting performance of e-procurement system in the energy sector in Kenya; a case study of Kengen, *International Journal of Management and Commerce Innovations*, Vol. 3, Issue 2, pp: 155-164
- Carter, CR, Kaufmann, L, Beall, S, Carter, PL, Hendrick, TE & Petersen, KJ (2004), 'Reverse auctions-- grounded theory from the buyer and supplier perspective', *Transportation Research-Part E the Logistics and Transportation Review*, 40(3):229-54.
- Chang, T.Z. and Chen, S.J. (1998), "Market orientation, service quality and business profitability: a conceptual model and empirical evidence", *Journal of Services Marketing*, Vol. 12 No. 4, pp. 246-64
- Chang K (2011) Enhancing transparency through E-procurement. Public procurement services (PPS) Republic of South Korea)
- Chen K, Chang C, Lai C. Service quality gaps of business customers in the shipping industry. *Transportation Research Part E* 2009; 45:222–237.
- CIO East Africa. (2014, August 14). *Kenya Government Procurement Finally moves online*. Retrieved from CIO East Africa: <http://www.cio.co.ke/news/mainstories/kenya-government-procurement-finally-moves-online>
- Chegugu, N. R. & Yusuf, K. G. (2017). Effect of electronic procurement practices on organizational performance in public hospitals in the county government of Uasin Gishu, Kenya.
- Cooper, D. and Schindler, A. (2008), *Business Research Methods*, Irwin, Boston, MA.

- Crosby Ph.B. *Quality Is Free: The Art of Making Quality Certain*. New York: New American Library; 1979.
- Croom, S. (2000a), "The impact of web-based procurement on the management of operating resources supply", *The Journal of Supply Chain Management*, Winter, pp. 4-13
- Croom, SR & Brandon-Jones, A (2005), 'KEY ISSUES IN E-PROCUREMENT: PROCUREMENT IMPLEMENTATION AND OPERATION IN THE PUBLIC SECTOR', *Journal of Public Procurement*, 5 (3): 367-87.
- Croom, S & Brandon-Jones, A (2007), 'Impact of e-procurement: Experiences from implementation in the UK public sector', *Journal of Purchasing and Supply Management*, 13 (4): 294-303.
- Cronin, J. J. J. a. S. A... T., 1992. *Measuring Service. Quality: A Re-examination and Extension*. *Journal of Marketing*, pp. 55-68.
- Costa, A. A., Arantes, A., and Valadares Tavares, L. 2013. "Evidence of the Impacts of Public E-Procurement: The Portuguese Experience," *Journal of Purchasing and Supply Management* (19:4), pp. 238–246.
- Dai, Q. & Kauffman, R.J. (2001), "*Business Models for Internet-Based EProcurement Systems and B2B Electronic Markets: An Exploratory Assessment*." A paper presented at the Thirty-Fourth Annual Hawaii International Conference on Systems Sciences, Maui
- Davis, F. D. (1986). *A Technology Acceptance Model for Empirical Testing New End-User Information System: Theory and Results*. Massachusetts Institute of Technology
- Davila, A, Gupta, M & Palmer, R (2003), 'Moving Procurement Systems to the Internet: the Adoption and Use of E-Procurement Technology Models', *European Management Journal*, 21(1): 11-23.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. doi:10.1287/mnsc.35.8.982
- De Boer, L, Harink, J & Heijboer, G (2002), 'A conceptual model for assessing the impact of electronic procurement', *European Journal of Purchasing & Supply Management*, 8(1):25-33.

- Dobler, D. W., & Burt, N. (1996). *Purchasing and supply management* (6th ed.). McGraw Hill Publishing Company Limited, New Delhi.
- Eei, K.S., W. Husain, and N. Mustaffa, "Survey on benefits and barriers of e-procurement: Malaysian SMEs perspective". *International Journal on Advanced Science, Engineering and Information Technology*, Vol. 2, No. 6, pp. 424- 429, 2012.
- Gammie, A. (1992), "Stop at nothing in the search for quality", *Human Resources*, Vol. 5, Spring, pp. 35-8.
- Gathima, J. I., & Njoroge, J. G. (2018) *Effects of E-Tendering On Organization Performance in Public Sector: A Case of Nairobi City County Government*.
- Gardenal, F., "A model to measure eProcurement impacts on organizational performance". *Journal of Public Procurement*, Vol 13, No. 2, p. 215, 2013.
- Ghazaly, S.E. (2005). *Benefits and barriers on B2B E-marketplaces [online]*. E-Market Services Government of Kenya (2015), *Medium Term Expenditure Framework (MTEF) 2012/13-2014/15*. Nairobi: Ministry of Finance
- GroËnroos, C. (1984), "A service quality model and its marketing implications", *European Journal of Marketing*, Vol. 18 No. 4, pp. 36-44.
- GroËnroos, C., 1990. *Service Management and Marketing*. Lexington, MA: Lexington Books.
- Gupta, S, Jha, B & Gupta, H (2009), 'E-Procurement: A Developing Country Perspective: A Study on New Trends Concerned with Developing Countries', *AIUB Journal of Business and Economics*, 122 (1): 161-75.
- Gummesson, E. (1998), "Productivity, quality and relationship marketing in service operations", *International Journal of Contemporary Hospitality Management*, Vol. 10 No. 1, pp. 4-15.
- Guru, C. (2003), "Tailoring e- service quality through CRM", *Managing Service Quality*, Vol. 13 No. 6, pp. 20-531.
- Haynes, R. M., & Duvall, P. K. (1992) "Service quality management: a process-control approach." *International Journal of Service Industry Management*, Vol. 3 No. 1, pp. 14-24.

- Hallowell, R. (1996), “The relationships of customer satisfaction, customer loyalty and profitability: an empirical study”, *International Journal of Service Industry Management*, Vol. 7 No. 4, pp. 27-42.
- Hanna, NK (2010), *Transforming government and building the information society: challenges and opportunities for the developing world*, Springer Verlag.
- Hawking, P., Stein, A., Wyld, D. and Foster, S. (2004). E-procurement: is the ugly duckling actually a swan down under? *Asia Pacific Journal of Marketing and Logistics*, Vol. 16.
- Henriksen, H.Z., & Mahnke, V. (2005). E-procurement adoption in the Danish public sector: The influence of economic and political rationality. *Scandinavian Journal of Information systems* 17(2) Retrieved May 12, 2006 from <http://www.cs.aau.dk/SJIS/>.
- Holweg, M. 2005. The three dimensions of responsiveness. *International Journal of Operations & Production Management* 25(7): 603–622.
- Ibrahim, R., Hilles, S. M., Adam, S. M., Jamous, M. M., & Yafooz, W. M. (2016). Theoretical Framework Formation for E-government Services Evaluation: Case Study of Federal Republic of Nigeria. *Indian Journal of Science and Technology*, 9(37). doi:10.17485/ijst/2016/v9i37/94575.
- Kamaru, A. N., & Were, S. (2018). *Effect of E-Procurement Adoption On the Performance of State Corporations*
- Kamotho, D. K. (2014). E-procurement and procurement performance among state corporations in Kenya (Doctoral dissertation, University of Nairobi)
- KIPPRA (2012), *Kenya Economic Report 2012: Imperatives for Reducing the Cost of Living*. Nairobi: Kenya Institute for Public Policy Research and Analysis.
- Knudsen, D. (2003). Aligning corporate strategy, procurement strategy and e-procurement tools. *International Journal of Physical Distribution & Logistics Management*.
- Kothari, C. R. (2008). *Research methodology; Methods and Techniques*: New Delhi. New Age International (p) ltd.
- Kothari, C. R.&Garg (2014). *Research methodology: Methods and Techniques*. (3rd) Delhi: New Age International (p) ltd.
- Kotler, P., 1994. *Marketing Management*,. Englewood Cliffs, New Jersey: Prentice-Hall.

- Kheng, C.B. and Al-Hawandeh, S. (2002), "The adoption of electronic procurement in Singapore", *Electronic Commerce Research*, Vol. 2 Nos. 1/2, pp. 61-73.
- Kumak, E. (2012). *Understanding Public Procurement - A Library Review*. Retrieved from: www.devtplanconsult.org on 30th March, 2015.
- Lasser, W.M., Manolis, C. and Winsor, R.D. (2000), "Service quality perspectives and satisfaction in private banking", *Journal of Services Marketing*, Vol. 14 No. 3, pp. 244-71
- Leonard, F.S. and Sasser, W.E. (1982), "The incline of quality", *Harvard Business Review*, Vol. 60 No. 5, pp. 163-71.
- Lovelock, C.H. & Wright, L. (2002). *Principles of Service Management and Marketing*. Prentice-Hall, Englewood Cliffs, New Jersey. Lovelock.
- Lou, E. W., & Ashalwi, M. (2009). Critical success factors for e-tendering implementation in construction. collaborative environments: people and process issues. *Journal of Information Technology in Construction*, XIV, 98-109.
- Liao, SH, Cheng, CH, Liao, WB & Chen, I (2003), 'A web-based architecture for implementing electronic procurement in military organizations', *Tec novation*, 23 (6): 521-32.
- Majanga, B. (2021). *Electronic Reverse Auctions and Procurement Performance in Multinational Pharmaceutical Corporations in Kenya* (Doctoral dissertation, University of Nairobi).
- Mahmood, SAI (2010), 'Public procurement and corruption in Bangladesh confronting the challenges and opportunities', *Journal of public administration and policy research*, 2 (6): 103-11.
- Mchopa, A. (2015), the adoption of Procurement in Tanzania Public Procurement Progress Challenges and the way forward, Available from http://www.academia.edu/4991452/THE_ADOPTION_OF_EPROCUREMENT_IN_TANZANIA_PUBLIC_PROCUREMENT_PROGRESS_CHALLENGES_AND_THE_WAY_FORDWARD, Accessed (20th September, 2015).

- Mc Pheraon, C & Mac Searraigh, S. (2007), 'Corruption in the petroleum sector', in SP J. Edgardo (ed.), *The Many Faces of Corruption*, World Bank Publications, Washington, D.C.
- Mertens, D. M. (2012). What comes first? The paradigm or the approach? *Journal of Mixed Method Research*, 6(4), 255-257.
- Mugenda, O.M. (2008). *Research Methods Qualitative and Quantitative Approaches*. Nairobi, Kenya: ACTS press.
- Mugenda, O. M., & Mugenda, A. G. (2009). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.
- Neupane, A., Soar, J., Vaidya, K., and Yong, J. 2012. "Role of Public E-Procurement Technology to Reduce Corruption in Government Procurement," in *Proceedings of the 5th International Public Procurement Conference, IPPC5*, Seattle, WA, USA, pp. 304–334.
- Newman, K. (2001), "Interrogating SERVQUAL: a critical assessment of service quality measurement in a high street retail bank", *International Journal of Bank Marketing*, Vol. 19 No. 3, pp. 126-39
- Ndou, V (2004), 'E-government for developing countries: opportunities and challenges', *The Electronic Journal of Information Systems in Developing Countries*, 18 (1):1-24.
- Oso and Onen. (2012). *A general guide to writing research proposal and report*, Revised Edition, 2009.
- Odhiambo, W., and Kamau, P. (2003), "Public procurement: Lessons from Kenya, Tanzania and Uganda", *OECD Development Centre Working Paper No. 208*, March 2003.
- Orodho (2005), *Essentials of Educational and Social Research Methods*: Masola Publishers. Nairobi.
- Ojha, A. and S. Palvia, "E-Government and the Fight Against Corruption: Conceptual Model and Five Case Studies from India". *Journal of Information Technology Case and Application Research*, Vol. 14, No. 4, pp. 11-29, 2012.
- Oyediran, S. O. and Akintola, A. A. (2011), A Survey of the State of the Art of E-Tendering in Nigeria. *Journal of Information Technology in Construction*. Vol 6 pp. 557

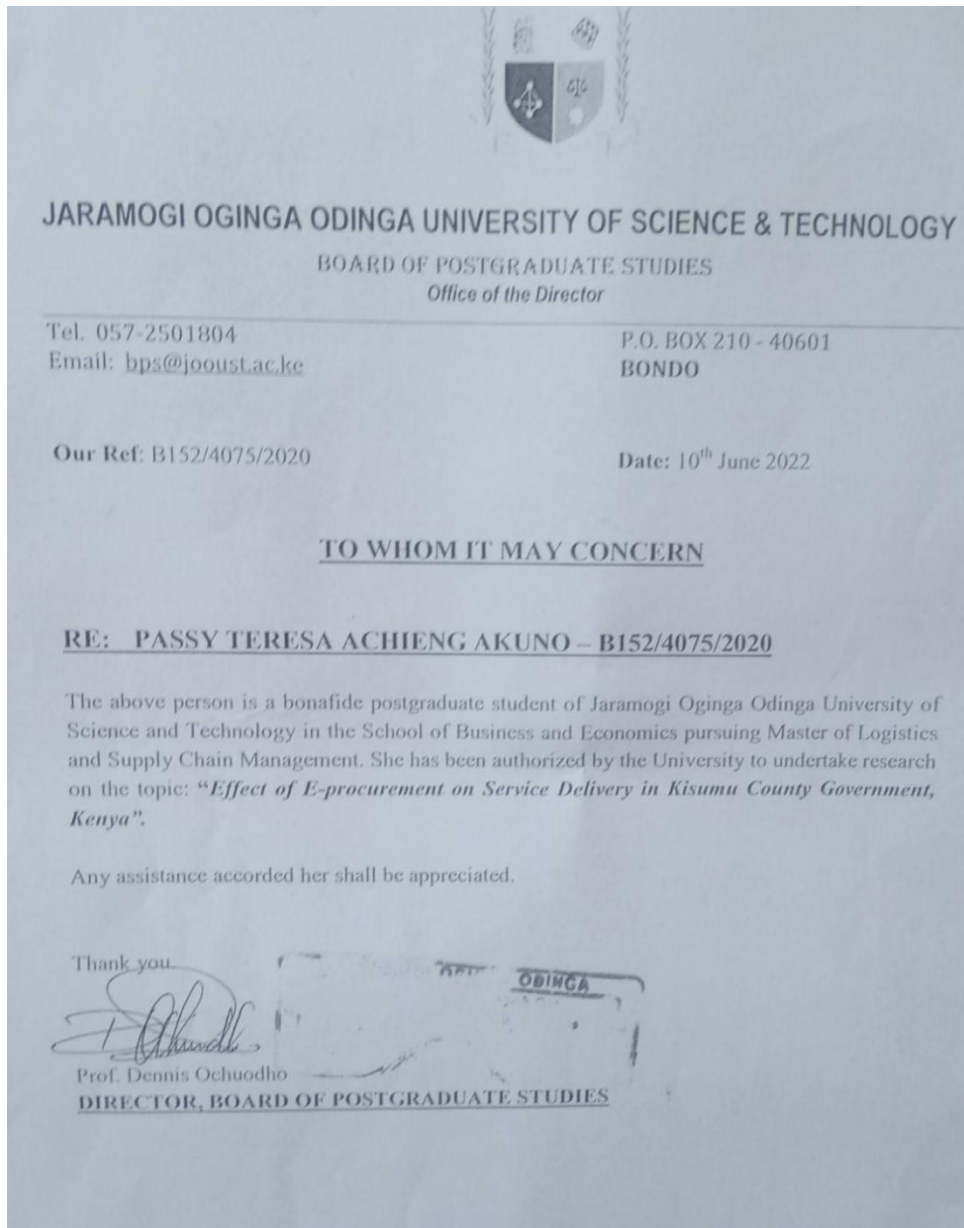
- OECD, A (2008), FIGHTING BRIBERY IN PUBLIC PROCUREMENT IN ASIA-PACIFIC. [Online]. Available at <http://www.etransform.org/gti/sites/etransform.org/files/Documents/bribery.pdf>. [Retrieved July 21, 2011]
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol. 49 No. 3, pp. 41-50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple item scale for measuring consumer perception of service quality", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-37
- Pasiopoulos, A., *et al.*, "The Implementation of e-procurement System in Health Sector in Greece: Attitudes of Potential Users and Implications for Hospital Management". *International Journal of Health Research and Innovation*, Vol. 1, No. 1, pp. 15-23, 2013.
- Panayiotou, N.A., Gayaialis, S.P., Tatsiopoulos, I.P., 2004. An E-procurement system for governmental purchasing. *International Journal of Production Economics* 90, 79–102.
- Pathak, R, Prasad, R, Singh, G, Naz, R & Smith, R (2006), Exploring the Potential of e-Governance Applications for Reducing Corruption: The Case of the Indian Public Sector.[On-line]. Available at http://www.napsipag.org/PDF/Reducing_Corruption.pdf. [Retrieved December 15,2011]
- Pawlikowski, P., Rico, N., and Van Sell, S. (2020). Positivism: a concept analysis. Graphy Publications
- Pressutti, W. (2003). Supply management and e-procurement: creating value added in the supply chain, *Industrial marketing Management*, Vol. 32, Thesis, Lulea University of Technology.
- Pictet, J & Bollinger, D (2008), 'Extended use of the cards procedure as a simple elicitation technique for MAVT. Application to public procurement in Switzerland', *European Journal of Operational Research*, vol. 185, no. 3, pp. 1300-7.
- Pollack, B. L. (2009). Linking the hierarchical service quality model to customer satisfaction and loyalty. [Research paper]. *Journal of Services Marketing*, 23(1), 42-50.

- Puschmann, T., Alt, R. (2005), "Successful use of e-procurement in supply chains", *Supply Chain Management: an International Journal*, Vol. 10 No.2, pp.122-33
- PPA (2009), the long term Policy Framework for Public Procurement in Ghana, Ghana Publishing Corporation. Accra.
- Reddick, C. (2004). The Growth of E-Procurement in American State Governments: A Model and Empirical Evidence. *Journal of Public Procurement*, 4(2)151-176
- Raghavan, N. R. S., & Prabhu, M. (2004). Object-Oriented Design of Distributed Agent-Based Framework for E-Procurement. *Production Planning and Control*, 15(7)
- Rust, R. T., & Oliver, R. L. (1994). Service Quality: Insights and managerial implications from the frontier in Service Quality: New directions in theory and practice (pp. 1-19): Sage Publication.
- Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, 5(9), 9-16.
- Saunders, M., Lewis, P. and Thornhill, A. (2012). *Research Methods for Business Students*. 6th Edition. Pearson.
- Seah, E. (2004). Do's and don'ts for e-tendering: A Quantity Surveying Perspective Retrieved February 19, 2006, from <http://www.icoste.org/korev2004b.pdf>
- Snider, K. and Rendon, R. (2001) *Public Procurement: Public Administration and Public Service*
- Sila, I., "Factors affecting the adoption of B2B e-commerce technologies". *Electronic Commerce Research*, Vol. 13, No. 2, pp. 199-236, 2013.
- Singh, S. (2018), 'Sampling Techniques', *Towards Data Science* [Online]. Available at: (Accessed on 19th March).
- Silvestro, R. and Cross, S. (2000), "Applying service profit chain in a retail environment", *International Journal of Service Industry Management*, Vol. 11 No. 3, pp. 244-68
- Sohail, M & Cavill, S (2008), 'Accountability to prevent corruption in construction projects', *Journal of Construction Engineering and Management*, 134 (9): 729-38.

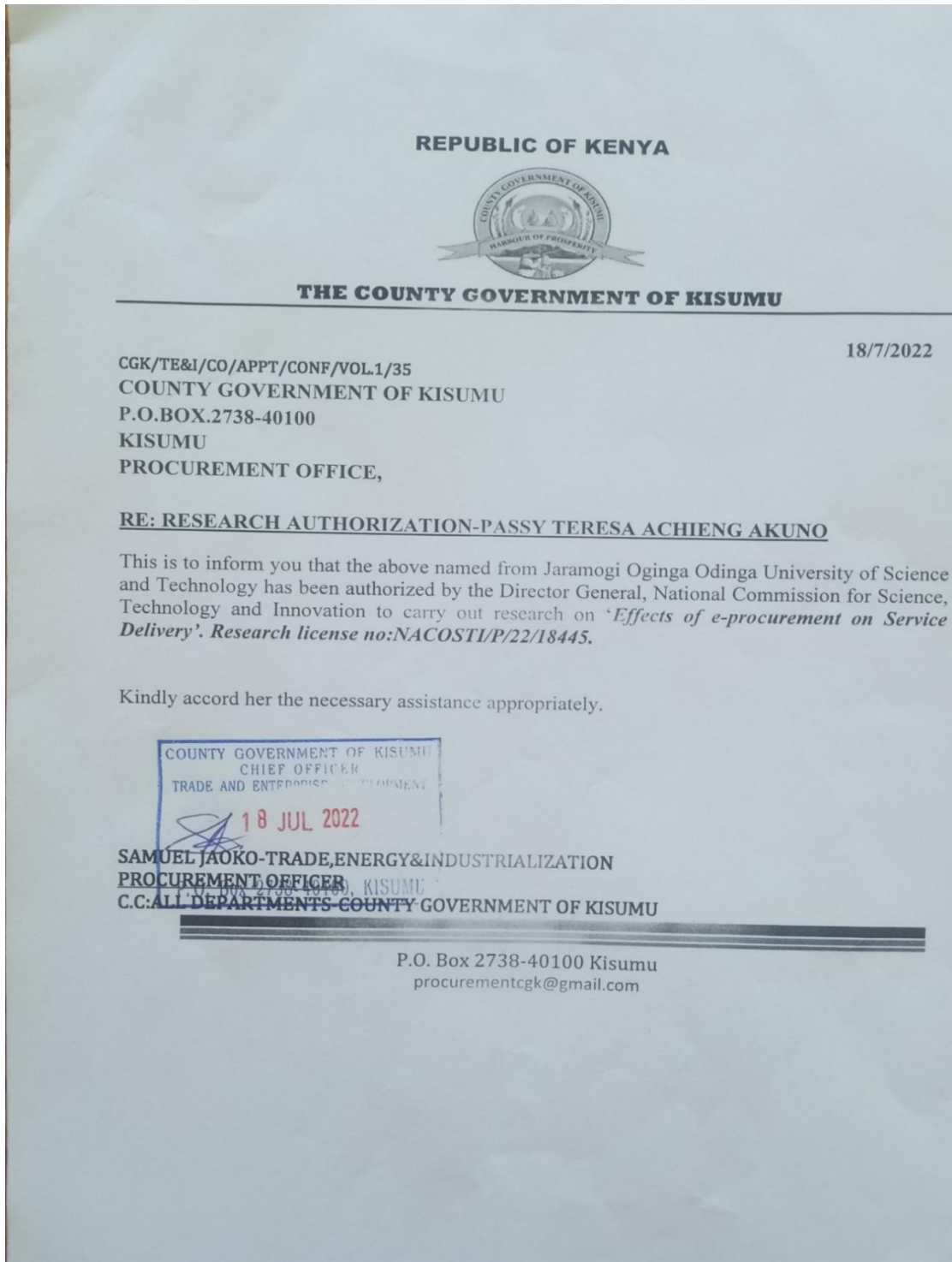
- Subramanian, C. & Shaw, M.J. (2002). A Study of the Value and Impact of B2B Ecommerce: The Case of Web-Based Procurement. *International Journal of Electronic Commerce*, Vol. 6, no. 4. Summer, pp.19-40.
- Sureshchander, G.S., Rajendran, C. and Anatharaman, R.N. (2002), "The relationship between service quality and customer satisfaction: a factor specific approach", *Journal of Services Marketing*, Vol. 16 No. 4, pp. 363-79.
- Tanner, C., Woelfle, R., Schubert, P., Quade, M. (2008), "Current trends and challenges in electronic procurement: an empirical study", *Electronic Markets*, Vol. 18 No.1, pp.6-18.
- Thai, KV (2001), 'Public procurement re-examined', *Journal of Public Procurement*, 1 (1): 9-50.
- Teich, J, Wallenius, H & Wallenius, J (1999), 'Multiple-issue auction and market algorithms for the worldwide web', *Decision support systems*,26(1):49-66.
- Thompson S.H. et al (2008). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega International Journal of Management Science*. The article is available online at www.elsevier.com/locate/omega.
- Tully, S. (2000), "The B2B tool that really is changing the world", *Fortune*, Vol. 141 No. 6, pp. 132-45
- Transparency International (2009). 2007 Corruption Perception Index (CPI). Retrieved from http://www.transparency.org/policy_research.
- Vaidya, K & Neupane, A (2011), The potential of Electronic Procurement and other tools to combat corruption in Public Procurement in Nepal, Non-Resident Nepali Association Australia 51-61 South Street, Granville NSW 2142, Australia, 16th July 2011.
- World Bank (WB) (2013). Electronic Government Procurement (e-GP): World Bank Draft Strategy. Washington, DC Author.
- Xinzhang, C & Yonggang, W (2011), 'E-government, government procurement and the development of eCommerce: Korean experience and its implications', paper presented to E -Business and E - Government (ICEE), International Conference on, Shanghai, China, 6-8 May 2011.

APPENDICES

Appendix I: LETTER OF AUTHORITY.



Appendix II: LETTER OF CONSENT.



Appendix III: RESEARCH QUESTIONNAIRES

SECTION ONE: GENERAL INFORMATION

(To be filled by staffs in Procurement department)

Instruction: Please Tick (√) where appropriate

1. Age of the respondent

- Below 30yrs
- 30-40yrs
- 40-50yrs
- 50yrs and above

2. What is your gender?

- Male
- Female

3. Kindly indicate your highest level of education.

- Diploma
- Bachelor
- Postgraduate Degree

4. Years of working experience

- Less than 5 years
- Between 5 and 10 years
- Between 10 and 15 years
- More than 15 years

SECTION TWO: E-SOURCING ON SERVICE QUALITY.

Below are statements regarding your opinion on the effect of e-sourcing on service quality in Kisumu County government, Kenya. Please indicate your level of agreement or disagreement with each statement by marking (√) in the spaces provided.

- 1 = Strongly Disagree (SD)
- 2 = Disagree (D)
- 3 = Undecided (U)
- 4 = Agree (AG)
- 5 = Strongly Agree (SA)

	E-sourcing	1=SD	2=D	3=U	4=AG	5=SA
1.	Enhanced global sourcing					
2.	Longer supplier relations					
3.	Wider supplier base					
4.	Greater efficiency in ordering					
5.	Enhanced inventory management					
6.	Better decision making					
7.	Improved contract compliance					
8.	Improved market intelligence					
9.	Transparency in e-negotiations					
10.	Reduced maverick purchasing					
11.	Openness in e-negotiations					
12.	Reduced Operational & Inventory Costs.					
	TOTAL					

SECTION THREE: E-TENDERING ON SERVICE QUALITY

Below are statements for gathering your opinion on the effect of e-tendering on service quality in Kisumu County government, Kenya. Please express your level of agreement or disagreement with each statement by marking (√) in the provided spaces.

1 = Strongly Disagree (SD)

2 = Disagree (D)

3 = Undecided (U)

4 = Agree (AG)

5 = Strongly Agree (SA)

	E-tendering	1=SD	2=D	3=U	4=AG	5=SA
1.	Reduced administration costs					
2.	Improved efficiency and effectiveness					
3.	Negotiated Unit Cost reduction					
4.	Public invitation to tendering					
5.	Faster tender submission					
6.	Improved visibility of internal customer demand					
7.	Price reduction					
8.	Shortened procurement cycle times					
9.	Transparent contract awarding					
10.	Standardized procurement processes across the organization					
11.	Enhanced service delivery					
	TOTAL					

SECTION FOUR: E-REVERSE AUCTIONING ON SERVICE QUALITY

Here are the items for gathering your opinion on the effect of e-reverse auctioning on service quality in Kisumu County government, Kenya. Please express your opinion by marking (√) in the provided spaces.

1 = Strongly Disagree (SD)

2 = Disagree (D)

3 = Undecided (U)

4 = Agree (AG)

5 = Strongly Agree (SA)

	E-reverse auctioning.	1=SD	2=D	3=D	4=AG	5=SA
1.	Increased customer power intensity as a result of increased competition among bidders.					
2.	Increased quality of purchases					
3.	Reduction in procurement cycle time					
4.	Increased visibility in the entire auctioning process.					
5.	Cost savings on acquisition of purchases					
	TOTAL					

SECTION FIVE: SERVICE QUALITY ATTAINMENT

Indicate your level of agreement regarding how service quality has been achieved after a thorough assessment of the effects of e-procurement. Please mark your response by placing a checkmark (√) in the designated space using the following scale:

- 1 = Strongly Disagree (SD)
- 2 = Disagree (D)
- 3 = Undecided (U)
- 4 = Agree (AG)
- 5 = Strongly Agree (SA)

		1=SD	2=D	3=U	4=AG	5=SA
	Service delivery attainment.					
1.	Increased efficiency in service delivery					
2.	Reduced advertisement costs.					
3.	Reduced procurement and administration related costs					
4.	Reduced procurement cycle time and lead time					
5.	Increased quality of purchases					
6.	Increased value for money					
7.	Enhanced monitoring and tracking/visibility.					
8.	Improved customer satisfaction					
9.	Reduced human interface					
10.	Reduced procurement related fraud					
	TOTAL					

Appendix IV: MAP OF KISUMU COUNTY.



Source: Map Data (2022)

Appendix V: ERC LETTER



**JARAMOGI OGINGA ODINGA
UNIVERSITY OF SCIENCE AND TECHNOLOGY
DIVISION OF RESEARCH, INNOVATION AND OUTREACH
JOOUST-ETHICS REVIEW OFFICE**

Tel. 057-2501804

Email: erc@jooust.ac.ke

Website: www.jooust.ac.ke

P.O. BOX 210 - 40601

BONDO

OUR REF: JOOUST/DVC-RIO/ERC/E3

13th July, 2022

Passy Teresa Akuno,
Adm. No. B152/4075/2020
SBE
JOOUST

Dear Ms. Akuno,

RE: APPROVAL TO CONDUCT RESEARCH TITLED "EFFECTS OF E-PROCUREMENT ON SERVICE DELIVERY IN KISUMU COUNTY GOVERNMENT, KENYA."

This is to inform you that JOOUST ERC has reviewed and approved your above research proposal. Your application approval number is 7/31/ERC/23/06/22-2. The approval period is from 13th July 2022- 12th July, 2023.

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

Prof. Francis Anga'wa
Chairman, JOOUST ERC

Copy to: Deputy Vice-Chancellor, RIO Director, BPS Dean, SBE

Appendix VI: NACOSTI PERMIT.

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 771134	Date of Issue: 22/June/2022
RESEARCH LICENSE	
	
<p>This is to Certify that Ms. PASSY TERESA ACHIENG AKUNO of Jaramogi Oginga Odinga University of Science and Technology, has been licensed to conduct research in Kisumu on the topic: Effects of E-procurement on Service Delivery in Kisumu County Government, Kenya. for the period ending : 22/June/2023.</p>	
License No: NACOSTI/P/22/18445	
771134 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
<p>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</p>	