E-PROCUREMENT IMPLEMENTATION AND PERFORMANCE OF COUNTY GOVERNMENTS IN KENYA

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DEECLARATION

I declare that this is my original work and has not been presented for a degree in any other university.

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D61/78942/2015

This project has been submitted for examination with my approval as the University Supervisor**:**

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DEDICATION

I dedicate this work to my family and most of all to my parents Mr and Mrs Stephen Ndiiri for believing in me and their relentless support and inspirational encouragement. Your prayers brought me this far.

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I thank the almighty God for the gift of life and his sufficient grace towards me throughout my study.

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ABBREVIATIONS AND ACRONYMS

GDP: Gross Domestic Product

ICT: Information and Communication Technology

KPIs: Key Performance Indicators

LDCs: Less Developed Countries

PI: Performance Indicator

RFID: Radio Frequency Identification

SCM: Supply Chain Management

ERP: Enterprise Resource Planning

IFMIS: Integrated Financial Management Information System

ABSTRACT

Internet technology is no longer optional in the modern worldwide business environment that's highly competitive, rather, it is mandatory. The study aimed at establishing the extent of e-procurement implementation within Kenyan county governments with a view to determining if there are any obstacles concerning the implementation of e-Procurement among these units of governance as well as figuring out what link exists between electronic procurement execution and performance in the Kenyan county government. Three theories formed the basis for this study: (1) disruptive innovation (2) innovation diffusion, and (3) technology acceptance. This study employed descriptive research design that gain an in-depth understanding of the connection that exists between the execution of e- procurement and the performance of procurement among Kenyan county governments. This research has all the Kenyan county governments that are 47 in number (appendix II) as the targeted population. Given that this is a relatively small population; a census is proposed. Data was collected mainly by use of a questionnaire. The questionnaire has structure open and closed ended questions. It comprises of four sections; section one attempts to extract general information regarding the profile of each respondent. The second section is focuses on the extent to which e-procurement has been implemented by counties in Kenya. The third section is seeking to figure out the connection between the implementation of electronic procurement and the performance of procurement among each of the 47 counties in Kenya. In this study, descriptive statistics were main tool employed in data analysis. For example, frequency distribution tables, standard deviation, as well as mean were utilized. Software employed in the computation of outcomes is SPSS and Ms Excel. Regression analysis was used to help figure out the impact electronic procurement has on procurement performance. The findings of this research are that the advertising of tenders via the web has a great impact on procurement performance in County Governments in Kenya. The study further concluded that online short listing of tenders in County Governments in Kenya influences procurement performance positively. The study also concluded that tenders in County Governments in Kenya are advertised online, all counties staff make requisitions online, there is competitive bidding and sourcing. The study further concludes that the application of online supplier in County Governments in Kenya impacts the procurement performance in a positive way. The study further concluded that online requisition has a great positive relationship on procurement performance in County Governments in Kenya. Therefore, increased online requisition leads to a positive increased in procurement performance. On the online ordering, the study concluded that online ordering in County Governments in Kenya, positively increases procurement performance. The recommendation of this study is that county governments ought to insist on enterprise resource planning requirements throughout any procurement lifecycle for the purpose of enhancing the performance of procurement. It's the suggestion of this study that there ought to be the adoption of the appropriate Information and Communications Technologies (ICT) in the County Governments in Kenya necessary for successful implementation of e-procurement. The study was met with the reluctance by respondents to provide information they deemed private. To overcome the bottleneck, this study guaranteed the respondents of the proprietary steps that would dictate the usage of the provided information. Additionally, the study suggested a broader covering the entire public sector in Kenya should be conducted to ascertain the link between electronic procurement execution and performance. Further research should be carried out on challenges facing electronic procurement execution and performance among Kenyan county governments.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Internet technology is no longer optional in the modern worldwide business environment that's highly competitive, rather, it is mandatory. It's very necessary that firms offer their customers cost effective complete solutions and lifecycle costs for the addition of sustainable value. The advent of Internet as well as information and communication technology (ICT) applications has seen first struggling to adapt their operations from conventional methods to the digital electronic business, electronic procurement, and electronic supply chain concepts (Edmiston, 2003). Both researchers and practitioners strongly agree strongly on the strategic significance of adopting efficient purchasing methods to cut down costs. More and more government agencies are embracing electronic procurement applications to harness the benefits that firms in the private sector are already enjoying, according to Panayiotou et al., (2004). E-procurement and the use of computers in procurement is gaining grounds and becoming more popular in today's business. According to Gerald and Joan (2009), modern business state a business entity must adopt and implement information technology in the execution of its everyday business processes in order to succeed. That factor alongside numerous other favorable outcomes of e-procurement implementation has prompted many companies both locally and all over the world to adopt and implement IT in its procurement process and overall running of the business.

For instance in Europe, the public sector accounts for 45% of the gross domestic product, with 15% pertaining to public procurement Davis et al., (2007). As far as the execution of

e-government is concerned, electronic procurement is one of the major priorities for many countries because of the possible cost savings. (Carayannis and Popescu, 2003). Public electronic procurement may have plenty of benefits, Mitchell (2000), but the size and red tape associated with governments makes the execution of any e-government project more sophisticated. (Devadoss, 2002). Madaney (2000) indicated that companies in Kenya have not been able to keep pace with global and technological changes to the world today, and therefore there was need to put more research and allocate more resources towards technological improvements and advancement.

The business world is moving very fast that it is important that even companies in Kenya change with the changing times. The recent scandal at Devolution Ministry in Kenya over IFMIS is big, billions of Kenya's taxpayer money has been ripped off through the system, with revelations that the system had no back-up, the country may not know exactly how much has been ripped off from taxpayers. This and other shady county procurement process has prompted me to do research on the e-procurement implementation and performance in the county governments.

1.1.1 E-procurement

Procurement is a function of business management that sees to it that the external resources that an entity may require to accomplish its strategic goals are determined, sourced, and accessed. On the other hand, e-procurement is viewed as the electronic process by means of which goods and services can be purchased (Mitchell, 2000; Presutti, 2003). The concept may be defined as the utilization of integrated communication infrastructure that's usually based on the Internet to carry out partial or whole purchasing processes, which may encompass phases such as the initial requirement

determination by a user, search, sourcing, bargaining**,** order placement, receipt as well as post-purchase feedback (Croom and Brandon-Jones, 2007). Although there is a range of different e-Procurement types that focus on one or many stages of the procurement process such as electronic tendering, electronic marketplace, electronic auction/reverse auction, as well as electronic catalogue/purchasing, the broad definition of e-Procurement may be such as an end-to-end service that harmonizes and makes more efficient numerous procurement processes within an entity (Vaidya and Callender, 2006). The public sector leverages digital applications such as electronic tendering, electronic RFQ, electronic auctions, electronic catalogues, and electronic invoicing.

Baily (2008) defines seven categories into which e-procurement is split: the first is type is Enterprise Resource Planning (ERP) that's online-based, and which facilitates the development and approval of purchasing requisitions, purchase orders placement, and the reception of goods and services with the help of a software application that's deployed through Internet technology. Type 2 is E-MRO (Maintenance, Repair and Operations) which focuses on the development and approval of purchase requisitions, purchase order placement, and the receipt of MRO supplies that are non-product. E-sourcing is the third form. It entails the pinpointing of fresh suppliers for a particular class of purchasing needs via the web-based technology.

Electronic tendering is the fourth category that entails the conveyance of request for prices and other details to potential suppliers and the acceptance of reply through web-based technology. Another form of electronic procurement is e-reverse auctioning which harnesses web-based communications to purchase goods and services numerous sources, known or unknown. E-informing is the sixth kind, and it's a process by which buying

information is gathered and distributed to and from inside as well as outside entities with the help of web-based infrastructure. Baily (2008) mentions that the eighth category, which is E-market sites, entails where buyer groups may access products and services from their preferred suppliers, append to shopping carts, make requisition, request approval, receive purchase orders, and compute electronic invoices while liaising with the supply chain of suppliers and the financial systems of the purchasers. The procurement process is primarily the same, no matter the public sector in question, and it may be executed using direct technology for the automation of standard processes, according to Whang & Johnson (2009).

1.1.2 Procurement Performance

The evaluation of procurement performance takes into consideration of both the strategic and operational dimensions of the procurement function. From the operational dimension, procurement performance relates to the costs of purchasing, product and/ or service quality, delivery and flexibility in procurement (Nair, Jayaram & Das, 2015). On the strategic dimension of procurement performance it considers innovation in the purchasing process. In both cases, the measures that underlie the dimensions are multiple and range from cost and quality of the inputs/outputs, cost of purchasing activities, percentage of Just-in-time suppliers, inventory turns, procurement cycle times and on-time deliveries (Lysons & Farrington, 2006).

Van Weele (2006) asserts that purchasing performance is viewed as originating from purchasing effectiveness and purchasing efficiency. Performance provides the basis for an organization to evaluate its progress towards its predetermined goals, pinpoints its weak and strong areas, and determines future projects, the end game being to trigger

improvements on performance. This suggests that purchasing performance should be viewed as the end game in itself; instead, it is a method for the attainment of effective and efficient regulation and tracking of the purchasing task (Lardenoije, Van Raaij, & Van Weele, 2005). Purchasing efficiency as well as purchasing effectiveness is representative of various skills and capacities pertinent to the purchasing function.

While efficiency refers to "doing things right," effectiveness implies "doing the right thing." What this implies is that, while an entity may be effective that does not necessarily make it efficient—The trick lies in being able to strike a fair balance between the two aspects. An organization benefits in many ways when it guages how the purchasing function, such as cost decrease, higher profits, guaranteed supplies, enhancement in quality, and competitive edge as said by (Batenburg & Versendaal, 2006).

Poor procurement performance on its part contributes to rising inefficiency as well as costs and competitiveness of the procurement function. According to Barsemoi, Mwangagi and Asienyo (2014), poor procurement performance contributes to decrease in profitability in the private sector hence is a major hindrance to the realization of organizational growth as it leads to delays in delivery, low quality goods and services and increase in defects. In both private and public sectors, poor procurement performance results from inability to embrace e-procurement, use traditional procurement procedures and poor coordination of procurement activities between the requisitioning departments and the procurement department.

1.1.3 County Governments in Kenya

In Kenya, county governments are geographical units that the 2010 Constitution of Kenya envisaged as the units of devolved national government. Articles 191 and 192, the fourth schedule of the Constitution of Kenya, as well as the County Government Act of 2012 address these provisions. Each county also forms a one-member constituency for electing a representative to the Kenyan senate and a special women's representative to the National Assembly of Kenya. By the 2013 general elections in Kenya, there were 47 counties that obtain size and boundaries from the previous Kenyan constitution's acknowledged 47 districts. After the country's national administration was restructured, counties were incorporated into the new national administration, where the national government appointed commissioners to represent it at county levels.

It is government policy to permit unrestricted competition for procurement opportunities without favoritism in a clear, fair and accountable fashion to ascertain the attainment of value for money in all public procurement. One of the objectives of government policy is to attain economic growth, reduce poverty, as well as manifest significant enhancements in the provision of services to the Kenyan citizenry. Public corporations spend huge budgets on procurement and up to 60 percent of public expenditure goes to public procurement (Kipkorir, 2013; Makabira & Waiganjo, 2014).Through flawed public procurement processes, large sums of taxpayers‟ money have been lost in Kenya in the past; the main reasons being low personal ethical standards by concerned parties and organizational culture and the environment (Kangogo & Kiptoo, 2013).

Senior personnel in charge of procurement need the implementation of focused and continuous change management and enhancement plan to enable favorable behavioral

and cultural change that brings forth a cost-effective and collaborative procurement plan. The advantages of that include enhanced efficiency in administration, improved contracts, more solid supplier relationships, as well as the provision of highest-value contracted goods and services to consumers (both internal and external). Culture change partly calls for the reconsidering of engagements between the procurement personnel and government projects as well as agency operations. The personnel of a centralized procurement agency must be entrenched within and held responsible to the programs that call for their services (Plant & Valle, 2008)

1.2 Research Problem

For the majority of organizations, it's been impossible to create effective techniques for the setting up of technological developments that are crucial in enabling e-procurement for the management of their procurement functions. As such, the most effective strategy is developed with due consideration of technological development and taking into account the manner in which electronic procurement may be deployed to boost the supply chain management within an entity in a way that's vital to the general organizational performance. Procurement performance within both the private and public sectors have had their own bottlenecks, but entities that have embraced e-procurement to improve performance have managed to register superior levels of accountability and transparency (Subramaniam & Shaw, 2002).

In Kenya, procurement in county governments is executed under the dictates of the Public Procurement Oversight Authority within the provisions of the 2005 Public Procurement and Disposal Act. It is government policy to allow free competition for procurement opportunities without bias in a clear, fair and accountable approach to

guarantee the attainment of value for cash in all procurement. Yet, by means of defective public procurement processes, large sums of taxpayers‟ money have been lost in Kenya in the past; the main reasons being low personal ethical standards by concerned parties and organizational culture and the environment (Kangogo & Kiptoo, 2013). There are loopholes in old procurement methods that leave room for exploitation and misuse.

The United Nations Conference on Trade and Development (2003) which is a background paper on development and issues on e-commerce and information and communications technologies, it was reported that effective e-procurement execution when buying goods and services in companies yields savings up to 30 percent and the decline of transaction expenses by up to 25 percent. Steinberg's (2003) did a study on the implementation of e-procurement in state Corporates in Britain agreed that, although different governments are calling for public sector agencies to embrace e-Procurement, there do not seem to be a streamlined execution of e-procurement, and the success rates in its implementation have been less than dramatic, as backed by the assertion that "Government e-Procurement projects have been notoriously unsuccessful". A study by Stein (2009) found that adaptation of information technology within state agencies has had an impact on the enhancement of the provision of services by 40%, and as such, the necessity to improve the effectiveness of service provision by the adoption of a well-coordinated automated operation. The execution of the procurement function**,** which is important to the procurement of materials necessary for the provision of services, has been hindered by the use of traditional, exhausting techniques. Panetto and Boudjilida (2013) in their study assert that, the cost-effective enforcement of public procurement laws has

substantially higher difficulty and more significance than the official acceptance of guidelines for public procurement.

Locally, Korir (2009) looked into the obstacles that the Kenyan public sector among a few government ministries had to deal with in the execution of e-procurement. The researcher discovered poor IT systems, insufficient financing, lack of political will to be the major obstacles. Productivity of most public institutions in Kenya is very low, although they continuously take in an extreme share of the budget and most of it goes to procurement which is not fully automated (GoK, 2011). Aman and Kasimin (2011) sought to find out the challenges in the implementation e-procurement and how to overcome them but failed to address the readiness of the government entities to implement in order to avoid the challenges that could arise. The study by Kinoti (2013) dwelt more on the supplier's preparedness to participate in the Government's e-procurement system. The study failed to address the Government entities readiness in successful implementation of electronic procurement system.

It is clear that, despite the centrality of e-Procurement as a key strategy and supply chain management tool, there is inadequate literature from previous empirical studies relating e-Procurement implementation and procurement performance particularly among the counties. While numerous previous research has unraveled the effect of e-Procurement on performance (Korir, 2009; Kinoti, 2013) most of them have not exhaustively investigated the part e-procurement implementation plays in the promotion of procurement performance wthin County government. Therefore, this study sought to answer the following questions: What is the extent of e-procurement implementation within Kenyan county governments? What are the bottlenecks in implementation of e-Procurement

among Kenyan county government units? What kind of link exists between the execution of electronic procurement and performance within Kenyan county governments?

1.3 Research Objectives

The specific objectives of this study are:

i. To establish the extent of e-procurement implementation by Kenyan county governments.

ii. To find out if obstacles do exist in the implementation of e-Procurement among county governments in Kenya.

iii. To figure out the connection between the implementation of e-procurement implementation and performance within Kenyan county governments.

1.5 Significance of the Research

This research shall be of importance to procurement managers in the public sector as it will help them to develop benchmarks of best practices in the sector. This research will offer new viewpoints and suggest solutions for improving procurement performance for Kenyan Public corporations and also the findings will be important for the Government in enhancing efficiency and transparency in public procurement that have so often been plagued by problems or wastage, corruption, and poor value for money in their procurement processes.

The study will be helpful to Procurement and Supply Chain professionals in addressing the implementation of e-procurement as a tool in enhancing supply chain performance among the public and private businesses. The government will find the information

useful in diagnosing the problems affecting the public sector and come up with policies that will support electronic procurement adoption to enhance supply chain performance.

Procurement being an area that is attracting a lot of professional, academic and scholarly attention, this study can be used as a reference to promote the general academic and scholarly input to the understanding of this body of knowledge. The study will also assist in confirming the theoretical assumptions on the impact of e-procurement implementation on supply chain performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter concentrates on these issues: Theories, e-procurement; e-procurement and performance; challenges facing the adoption of e-procurement; the relationship between e-procurement and performance; chapter summary; and the conceptual outline of the research.

2.2 Theoretical Literature Review

This section discusses the theoretical framework. Three main theories create the foundation for this study: (1) The Disruptive Innovation Theory, (2) The Innovation Diffusion Theory, and (3) The Technology Acceptance Theory. A fine grasp of innovative techniques such as electronic procurement can be attained with the help of these theories.

2.2.1 Disruptive Innovation Theory

According to the disruptive innovation theory, e-procurement is a modernization approach that calls for ongoing enhancement. Such developments upset traditional procurement processes and activities. The theory of disruptive innovation defined by little and expensive customer-base and insufficient appeal at the early stages of execution, a little degree of approval as system execution progresses, new competition while modernization progresses, and ongoing quality enhancement to suit the system to the requirements of its users and all stakeholders. Disruptive innovations must be supported by important values, procedures, and resources. Important resources are such as those that back usual business processes, for example, humans, technology, marketing

functions, design of products, branding, engagement between customer and supplier, and relationship management for clients and vendors. Vital processes encompass decision-making modalities, and the coordination patterns that give life to existing enterprise functions. Other important elements are cultural practices, belief system, and suppositions within an organization (Barahona & Elizondo, 2012). An innovation is considered disruptive if it's capable of establishing new markets and value network, which results in the disturbance of the current market value and network, eventually rendering obsolete conventional market leaders in terms of companies, brands, and alliances. Commencing 1995, Clayton M. Christensen defined and analyzed the concept.

The concept of disruptive innovation acknowledges the truth regarding the lack of versatility in public organizations and systems flexible. As such, the embracing of electronic procurement calls for a tactical and proactive formula for the setting up of the system within the current structural environment as opposed to the creation of entirely new infrastructure. This requires 100% readiness in areas such as acquisition of the appropriate technology, leadership to enhance the shifting of processes, personnel education, and awareness programs directed towards all system users. Nonetheless, it makes sense to realize that disruptive may have short-lived efficacy in certain cases.

2.2.2 Innovation Diffusion Theory

Rogers (1962) came up with the theory of innovation diffusion. According to the theory, innovation is a process that targets to enhance economic progress. As per the theory, any concept that people consider new is innovation. OECD (1997) referenced by Andreanne and Swaminathan (2007) described innovation to be "all the scientific, technological, organizational, financial, and commercial activities necessary to create, implement, and

market new or improved products or processes." The innovation concept encompasses four critical components. The first component is innovation that focuses on the capacity to create efficient and better methods for performing tasks. According to the theory, there are five classifications for those who adopt innovation: the innovators, the few who adopt innovation early, early majority, the majority that adopts later on, and those who lag behind in embracing innovation.

Innovators are the group that's eager to be the first one to sample new innovation, while early adopters constitute opinion influencers. Early majority are the people that are initially skeptical about the innovation until they see it working, while late majority are those embrace innovation only after others have successfully tried it. On the other hand, laggards are the extremely pessimistic group that is most difficult to bring on board in the innovation process.

The innovation theory dictates that the rate of acceptance of innovative methods may be viewed in terms of comparative benefits that an organization is offered**,** compatibility, sophistication levels, the ability to try and test the new methods, and the ease with which stakeholders in social environment can observe these. The second element is communication which conveys information, and the creation as well as sharing of information that pertains to innovative ideas within the entity. The third perspective is time which takes into account how long the innovation decision process will take. The fourth dimension is the social environment within which new system exists (Rogers, 1997). Methods of diffusion innovation necessitate the development as well as re-invention of brands and individuals with a view to enabling improved performance (Les Robinson, 2009). The ideas in this theory are pertinent to this research. They help with

the development of the study and facilitate a better understanding of the anticipated linkages between research variables. The innovation diffusion theory has several shortcomings despite enabling a better grasp of the innovation process. This concept does not encourage a participatory methodology. That limits its best efficacy to just the adoption of behaviors. Still, the concept fails to put into consideration an entity's resources and social support in the embracing of new strategies.

2.2.3 Technology Acceptance Theory

Devis (1986) came up with the technology acceptance concept. The theory holds that technological advancements will not enhance the effectiveness and performance within an organization if their users have not embraced change (Davis, 1986). This concept is among the most common in the understanding the acceptance of computer technologies. The acceptance of any innovation particularly that which is based on information technology, calls for the acquisition of computer-based instruments that may facilitate the making of decisions as well as planning communication. Nonetheless, there are risks with such systems. As such, it is extremely important that the new systems meet specifications derived from organizational preference and reasoning. It also makes sense to recognize that individuals may not be open to technological shifting. There should be an attempt to explain why individuals object to change and the viable methods for overcoming their concerns. The correct organizational culture ought to be instilled, with the intended shift being implemented gradually and supported by communication. According to Kamel (2014), all participants in the change process must be educated on their roles and given support to play their respective part well.

Two hypotheses form the basis of the concept of technology acceptance: The supposed efficacy of the system, for example, enhanced performance and productivity as well as more effective and efficient performance, and the perceptible simplicity of application of the new system in terms of the simplicity of learning, and how easy it is to control and remember. The model introduces the understanding that the willingness to accept and apply emerging technology is dependent on the feelings of the user regarding the system in relation to its supposed benefits.

2.3 E-Procurement Implementation.

According to Roma and McCue, (2012), e-procurement is the application of information technology with a view to creating a procurement process which satisfies the dynamics within the environment. All counties will embrace the electronic procurement concept. Garran (2005) states that social, cultural, and political factors are the major drivers of e-procurement within the public sector. Within the county governments, the execution of procurement electronically has to be supported with resources as well as specialized competencies. The proper coordination of change management apparatus and training plans is also needed (Garran, 2005). It also makes perfect sense to set up mechanisms, practices, and processes that support the execution of e-procurement (Vaidya, Sajeev & Callender, 2006). There are other issues important in the adoption of e-procurement, for example, proper governance as well as capacity building (United Nations, 2011).

Koorn, Smith and Mueller (2001), referenced in Vaidya, Sajeev and Callender (2006), explains two kinds of digital procurement systems: the seller e-procurement approach and the buyer e-procurement systems. The execution of the two approaches needs a workflow mechanism that’s incorporated into an electronic procurement application to facilitate the

requisition to payment as well as e-catalogue application that outlines a vendor's goods and service on sale and their prices on the web (Vaidya, Sajeev & Callender, 2006). Aberdeen Group (2001) asserts the objective of most e- procurement applications is to attend to one of the three core elements of procurement functions, for example, indirect/direct procurement as well as sourcing. The reasons why county governments embrace digital procurement processes is to improve the adaptability of operations and strategies and the enhancement of technical versatility and environmental flexibility (Shirzad & Bell, 2012). The obtaining of goods, services, and works account for a substantial portion of the counties' budget. As purchasers, counties have the obligation of care and trust in the way they utilize public funds. Additionally, counties do not yet have access to the technology they require to reap maximum benefits from e-commerce (PPOA, 2009).

In 2009, the PPOA listed issues such as participants in a transaction, harmonization, confidentiality, internet bandwidth, and data integrity as the main concerns that counties had to address prior to tapping into the full benefits of electronic procurement. Thus, e-procurement derives its benefits from the exploitation of technological modernization as opposed to paperwork-based procurement processes. According to Min & Galle (2003), e-procurement leverages E-Commerce to dictate possible supply options, buy goods or services, transmit the prices of products and to engage with suppliers. Considering the degree and importance of procurement expenses, and the bottom line effect of cutting down the cost of sourcing goods, it is little wonder that over the past 10 years, various Kenyan county governments have registered increased focus on procurement costs.

This orientation has the outcome of determining innovative and optional procurement systems that offer tangible business benefits to the localized governments. E-Procurement seats at the core of this, and the possible benefits to be obtained from the adoption of electronic procurement have triggered a substantial amount of debate across research that's been published (Hawking et al, 2004; Croom & Johnston, 2003). In the long run, the objective of e-procurement is to harness Internet technologies to create a digital trading platform that brings together county governments and vendors (Zaharah, 2007). E-procurement is a digital procurement environment that supports engagement among multiple buyers and multiple sellers, and it lets county authorities operate as independent purchasing entities within one buying organization (Darin, 2007).

According to Croom and Johnston (2003), it's essential that internal system users adhere to compliance for electronic procurement to produce cost and efficiency benefits, and as such, internal customer satisfaction ought to be a major issue in the creation, adoption, and setting up of such a system. This implies that the extent of compliance with e-procurement is substantially controlled by the overall attitude of the county in general to either the procedure of digital redesign or the inclination toward reaping the supposed gains in electronic procurement (Soeters, et al., 2014). Some of the typical forms of electronic procurement within the public sector are: electronic tendering, electronic request for quotations, electronic auctions, electronic catalogues, as well as electronic invoicing (Vaidya, Sajeev & Callender, 2006). As per Roma and Mc Cue (2012), technologies of like electronic notice, electronic auction, electronic catalogue, electronic dossier, electronic submission, and electronic signatures are integral to procurement processes. This research will look into Enterprise Resource planning (ERP) that's an

information system application which facilitates the integration of data and processes across various functions of an organization, (Brazel & Dang, 2008), electronic maintenance (implying maintenance executed with the help an internet-connected computer (Levrat & Lund, 2003), electronic tendering**,** which is tendering carried out over the internet (Garran, 2005), and electronic sourcing (internet sourcing).

To build their core competencies, counties are adopting e-procurement as a key strategy due to its capacity to reduce quality cost in which case, e-procurement ensures that selected vendors supply items or services which do not supersede thorough quality control. It's also feasible for e-Procurement to cut down quality expenses by ascertaining that the elements purchased do not result in grievances from the user department or the end product to the consumer. It also plays a positive role in the enhancement of product design and innovation, in which case, innovation in the sector emanates from suppliers or is the outcome of deep engagement between the user department and supplying vendors (Darin, 2007).

County government procurement is responsible for 20-30% of GDP, implying that the necessity to embrace electronic procurement cannot be overemphasized (Thai & Grimm, 2000), and conventionally, efforts to satisfy numerous social and political goals (Tether, 1977). County governments utilize a sophisticated contractual system that'd developed to guard their best interest with the view to protecting the accountability and transparency of services (Rasheed, 2004). Via the public Internet, purchasers have the chance to pinpoint possible suppliers through general purpose search engines or specialist exchange search engines. Price comparisons carried out online usually relied upon for specialist or low value buying. Each supplier website operates differently from another, and orders may be

placed directly via the site, through email, or by the more conventional phone call, fax, or mail. In essence, a marketplace a catalogue with multiple suppliers and products, and it is often hosted and managed by a third party, with access by users being facilitated through the Internet or a Local Area Network (LAN) (Soeters, et al., 2014).

2.4 Procurement Performance

The idea of procurement performance has been around as from the early 1930s**.** Over the years, procurement practitioners, organizations, and scholars have developed growing interest in the theory. Although certain researchers think of procurement performance as an outcome of effectiveness, openness, and efficiency (Expert Group Meeting, 2001), there are others who define it as a function of flexibility as well as the improvement of effectiveness and efficiency in procurement activities (Garran, 2005). USAID defined the pointers on the basis of which procurement performance can be measured. According to USAID (2013) these pointers may be such as: price variation**,** contract exploitation, management of materials expiration, supply efficiencies, procurement lifecycle duration, payment processing duration, emergency procurement**,** outlays of procurement, openness of the tendering processes, personnel education, and clear price information.

Procurement performance is a measure of the degree to which an entity accomplishes its market-oriented objectives and financial targets. The basic short-term goals of SCM include enhancing productivity while reducing inventory and lifecycle durations, and the long-term targets revolve around penetrating more markets and soaring profitability on the part of all participants in the supply chain. To compare organizations and scrutinize organizational behavior, financial gauges have been utilized over time. A project, including supply chain management, by any organization ought to result in improved

performance within the organization. Severally during previous research, organizational performance has been gauged using financial as well as market formulae, for example, return on investment (ROI), market penetration, profitability, ROI growth trends, sales growth trends, and the general competitiveness of an organization. In harmony with the aforementioned literature, the same elements will be utilized in the measurement of organizational performance for this research (Cook, & Campbell, 2006).

Financial performance is a concept that's connected to the financial prospects of an organization, for example, the measurement of growth in the proportion of the market share, rise in ROIs, a surge in profit margins, and improvement of competitiveness (Stock, 2000). This research will utilize financial performance and non-financial performance in order to assess organizational performance, and that shall be classified as needed in the subsequent section. According to Ales (2009), organizational performance alludes to the capacity of an organization to achieve its market and financial objectives. It is assessed against the intended result, and typically, it is tied to both financial and non-financial performance. The section below looks into the two important components of organizational performance, and it discusses the categories for each of the particular components of financial performance and non-financial performance**.**

Non-financial performance are those pertaining to organizational operations, for example, reaction time on alterations in product design, durations for alterations in production volume, accurate computation orders, enhancements in the rate of order handling, all of which are linked to the operational performance but have an indirect impact on the organizational performance (LaLonde, 1998).

2.5 E-procurement Execution and Procurement Performance

E-procurement brings about the benefits of lower costs of transactions, enhanced efficiency of processes, improved contract compliance, shorter lifecycle durations, and lower costs of storage (Aberdeen Group, 2005), as well as increased efficiency of costs and operations (Roma and McCue, 2012). Mose, Njihia and Magutu, (2013) assert that e-procurement brings about better procurement performance. It enables the digital documentation of all bidding, increasing transparency and accountability, and ultimately, improving the performance of procurement performance. Likewise, Abarden Group (2001) mentions that that e-procurement results in enhanced customer requirement satisfaction, enhanced contract compliance, improved capabilities for supply chain, inventory expenditure reduction, and inventory management enhancement. The deployment of electronic procurement systems may bring about enhanced supplier-customer interactions while boosting the attainment of strategic objectives of procurement and eventually improving the performance of procurement (Martinez, 2008). In this research, the scholar had keen interest in probing the connection between electronic procurement and procurement performance, the major focus being on procurement activities within the Kenyan county governments.

2.6 Bottlenecks in E-procurement Implementation

Considering the concerns and issues associated with conventional procurement, it's shocking to realize that the shift to digital procurement in its different versions has not been largely embraced. The unwillingness by many county governments in Kenya to shift to e-procurement is not just a question of cost or technology, but it is sophisticated mix of hindrances. These hindrances encompass the security implications of doing business via

the web, the deficiency in interoperability with current platforms (for example, Enterprise Resource Planning), and the reluctance by supplying vendors to adopt this component of e-commerce. Together with these overall hindrances, several specific obstacles that pertain to individual counties will be highlighted. For instance, Panayiotou et al (2004) says that hindering factors that prohibit the execution of electronic procurement in the counties include the intricacy of processes for sourcing goods and services, the requirement for openness in procurement, and the legal limitations that various counties face.

Although the government has put an effort to encourage agencies within the public sector to put in place e-procurement, the success rate for its implementation has been less than dramatic, as alluded by Steinberg (2003) assertion that "Government e-Procurement projects have been notoriously unsuccessful." The rate of setting up public procurement systems in Kenya as well as across Sub-Saharan Africa has been poor, and the majority of government agencies have a tendency to exaggerate the extent to which they're practicing electronic procurement (MacManus, 2002). Numerous failures in e-procurement projects in several agencies within the public sector in Kenya have been reported in the business press lately, starting with the Anglo-Leasing controversy in the mid-2000.

2.7 Empirical Literature Review

Vaidya, Sajeev and Callender (2006) carried out research on "Critical Factors that Influence e-procurement Implementation Success in the Public Sector." The researchers discovered that regardless of the efforts that governments put toward e-procurement

reform, execution is still a substantial obstacle to numerous procurement functions. They further linked e-procurement to enhanced procurement performance.

Roma and McCue (2012) looked into e-procurement showed that e-procurement makes possible documentation of all bidding, in the end helping improve openness and accountability particularly in public procurement. Additionally, the study showed that electronic procurement is tied to enhanced efficiency and improvement in procurement activities. Additional benefits of e-procurement are such as**:** customers report higher satisfaction levels and increased professionalism in the procurement function, which encourages positive review of the procurement process by the public.

Abarden Group (2001) investigated the execution of e-procurement and came into conclusion that e-procurement applications bring about enhanced satisfaction of customer requirements, superior contract conformity, boosted capabilities for the supply chain, lower costs of storage, and enhanced inventory management. The researchers asserted that e-procurement ought not to be considered as a strategy. The entity should figure out what to spend on the processes and it should develop a plan. The execution of electronic procurement must start with benchmarking, and the implementation should be directed from the top. Other functional elements must support the execution of e-procurement. In their research on the implementation of ERP, Brazel and Dang (2008) arrived at the conclusion that ERP implementation boosts adoptability that into enhanced management of earnings. Besides improving versatility, ERP applications help better management accounting, and improve decision-making, which in the end boosts the capability of the management to organize accruals as well as other elements that may be an hindrance to organizational capacities.

In their research on security for Enterprise Resource Planning Systems, She and Thuraisingham (2007) determined that e-procurement improves data management safety which in the end may bring about better procurement performance. Their conclusion matches that of Martinez (2008) as obtained in "Procurement Goals, ERP, and Supplier Coordination in the Context of Competition and Global Environment," stating that ERP systems enhance customer delivery and facilitate cooperation with supplying vendors and customers. These lead to better supplier and customer interactions, while boosting the attainment of strategic objectives for procurement.

In the research titled crucial "Success Factors for Enterprise Resource Planning Implementation and Upgrade," Nah and Santiago (2006) stated that the execution of ERP calls for vital elements including: proper business plan and bearing, timely change management, excellent communication, relevant technical competencies, the management of projects alongside execution, devotion by top management, and systems management. Despite the confinement to the evaluation of B2B "success" examples, the outcome offers a reliable indication of the significance of ERP as a primary platform for B2B engagements.

Lewis (2004) carried out research titled "Essentials of e-Sourcing: A Practical Guide for Managing the RFX Process in an "E" Environment." The research showed that e-procurement may be deployed as an instrument for reducing process time, producing sourcing savings, and fueling a surge in earnings. He added that the adoption of e-sourcing begins with the choosing of an electronic tool to support organizational strengths, and it should be followed change management as well as the training of

personnel and other interested parties where applicable. The major constraint remained obstruction by the management.

Likewise, Vaidya and Callender (2006) investigated the important the important factors that affect the success rates in the adoption of electronic procurement within the public sector, and they came up with end-user acceptance as well as training, acceptance by supplying vendors, system integration, information integrity, security, and authentication, the process of re-design, performance metrics, the performance of top leadership, change management plans, and communication infrastructure as the key success factors in the execution of e-procurement. The majority of the studies were conducted in developed economies, and implying the need to conduct similar studies in the environment of a developing nation.

2.8 Summary of Literature review and Research Gap

There's been an increment in the importance of e-procurement in the recent past, within both academic and professional circles. Nonetheless, the in spite of the recognized benefits of the adoption of e-procurement, there has been sluggish implementation, and some of the earliest adopters have registered numerous disappointments in their attempt at using electronic procurement. Therefore, the adoption of e-procurement is marred with obstacles that have to be resolved with a view to optimizing the chances of success. Previous research carried out in a range of scenarios outlines numerous important factors that have an impact on the successful execution of e-procurement, for example, integration between buyers and supplying vendors, supposed risks, the backing of top leadership, and end-user education. Several theories and concepts are the bases of this research, including (1) Disruptive Innovation, (2) Innovation Diffusion, as well as (3)

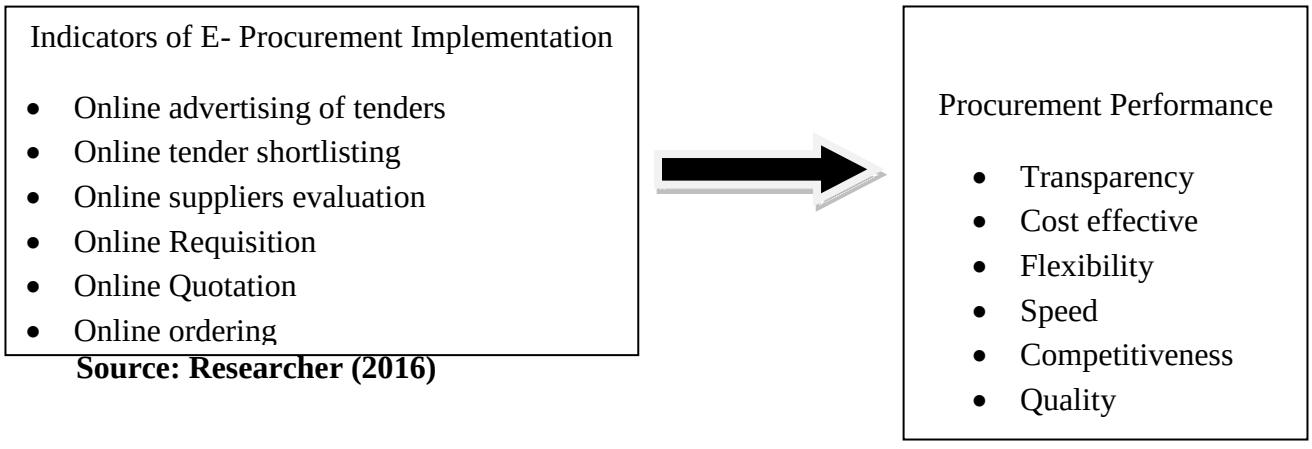
Technology Acceptance. As mentioned earlier, the studies targeted developed countries, and as such, there's significance in carrying out similar studies based on developing economies. On top of that, no study has been carried out on the implementation and performance of electronic procurement among the 47 county governments of Kenya.

2.9 Conceptual Framework

This research uses a conceptual framework on the basis of six independent variables, which are: internet advertising, web-based tender shortlist, internet-based supplier assessment, web-based requisition, internet quotation, online order placements. The study employs the procurement performance of Kenyan county governments as the dependent variable**.**

Figure 2.1 indicates the extent to which the numerous independent variables impact on the dependent variable being studied.

Figure 2. 1 Conceptual Model



Source: Researcher (2016)

The Figure 2.1 Conceptual model above show that procurement performance will depend on e-procurement procedures that form the independent variables. This will affect procurement performance issues including: Transparency, Speed, Flexibility, Competitiveness and Quality.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research methodology of the study is discussed**.** The chapter also defines the population where the study was carried out as well the size of the sample and how it was worked out. In the end, the chapter addresses data collection techniques for this research and the methodologies employed in data analysis and interpretation.

3.2 Research Design

This study employed descriptive research design that gains an in-depth understanding of the linkage between electronic procurement implementation and the performance of procurement among the Kenyan county governments. Descriptive research design avoids invalid inferences as it focuses on answering the "why" question. With descriptive research design, the researcher is allowed to probe the various aspects in their natural state without changing them in any way**.** This design also lets the scholar work out descriptive statistics that define the connection among variables. Kambua (2013) successfully used this method in her study on the implementation of e-procurement practices among private healthcare facilities within in Nairobi, Kenya.

3.3 Population of the study

The target population of this study was all the county governments in Kenya which are 47 in number (appendix II). A census is recommended because this a comparatively minute population..

3.4 Data Collection

The main data collection tool for the research was a questionnaire. The questionnaire has structure open and closed ended questions. It comprises of four sections; section one is attempts to gather overall details on the profile of a respondent. The second section is devoted to the extent to which e-procurement has been implemented by counties in Kenya. The third section attempts to draw a connection between the implementation of electronic procurement and the procurement performance among the Kenyan county governments. The last section is devoted to the challenges that hinder the implementation of e-procurement by counties in Kenya. The respondents were procurement managers or the operations managers or their equivalent. The researcher used both email and a drop and pick method.

3.5 Data Analysis

Prior to analyzing the answers, the filled-in questionnaires were checked over for comprehensiveness and consistency. Then, the collected data was coded for the purposes of putting each response in the right classification. For objective 1 and 2 Descriptive statistics method was be adopted. Correlation and regression analysis method was also used.

Primarily, this scholar employed descriptive statistics for data processing. These encompassed frequency distribution tables, mean and standard deviation. Software used to produce results was SPSS and Ms Excel. Analysis of demographic data relied on descriptive statistics to establish at which extent e -procurement had been implemented by counties in Kenya. Performance of Counties was analyzed using regression analysis.

Regression analysis was utilized to determine how e-procurement impacts on procurement performance.

The following regression equation was used;

$$\mathbf{Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \varepsilon}$$

Whereby Y = Procurement performance of Counties in Kenya

X1 = online advertisement of tenders

X2 = Online short listing of tenders

X3 = Online supplier evaluation

X4= Online Requisition

X5=Online Quotation

X6=Online Ordering

ε = Error term $\beta 0$ is the intercept

Table3. 1: Summary of Data Collection and Data Analysis

Objective	**Data Collection**	**Data Analysis**
General information	Section one	Descriptive analysis
Extent of e-procurement implementation in the counties.	Section two	Descriptive analysis
Linkage between implementation of e-procurement and procurement performance in the counties.	Section three	Correlation and regression analysis
Challenges in e-procurement implementation	Section four	Descriptive analysis

Source: Researcher (2016)

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter, the interpretation and presentation of the revelations of this research as extracted from the field are discussed. The chapter also mentions the background information of each respondent and revelations on the basis of the goals of this research. The findings of the research are explained by means of descriptive and inferential statistics.

4.1.1 Response Rate

A sample size of 47 respondents was aimed at in this research, of which 39 completed and submitted back the questionnaires, marking a reply rate of 82.9%. The response rate was sufficiently representative, and hence it served as a solid basis to draw conclusions from this study. Mugenda and Mugenda (2003) asserts that a response rate of 50 percent will suffice for purposes of analyzing and reporting, while a 60 percent reply rate is considered good. Anything 70% and above is viewed as superb. That logic dictates that the response rate for this research was excellent.

4.2 Demographic Information

This research attempted to obtain the demographic information of the respondents in terms of gender distribution, period of service in the county and the level of education

4.2.1 Gender distribution

Table 4. 2 : Gender distribution

Gender	Frequency	Percentage
Male	28	71.79
female	11	28.21
Total	**39**	**100**

Source: Researcher (2016)

The research attempted to capture the respondents' gender distribution. On the basis of the findings of this study, males accounted for the bigger proportion of respondents (71.79%) while the remaining 28.21% of the respondents were female. The inference here is that the male gender dominated the study.

4.2.3 Age Distribution

Table 4. 3 : Distribution in Terms of Age

Period of Service	Frequency	Percentage
below 30 years	2	5.13
30-39 years	8	20.51
40-49years	19	48.72
50-59 years	9	23.08
60-69 years	1	2.56
Total	**39**	**100**

Source: Researcher (2016)

The research aimed at finding out the each one of the respondent's age distribution, and based on the study, the age bracket of 40-49 years accounted for the highest number of respondents (48.72%), whereas, 23.08% of the respondents were in the age bracket 50-59 years, 20.51% of the respondents were in the age bracket 30-39 years, 5.13% of the respondents were in the age bracket were below 30 years and only 2.56 % of the

respondents were in the age bracket 60-69 years. Different age groups are perceived to hold different ideas. This implies that the study gathered information from all age brackets

4.2.4 Period of Service

Table 4. 4 : Period of Service

Period of Service	Frequency	Percentage
Below 1 year	2	5.14
1-2 years	3	7.69
2-3 years	20	51.28
3-4 years	8	20.51
4-5 years	6	15.38
Total	**39**	**100**

Source: Researcher (2016)

The research attempted to figure out the duration that each respondent had worked for their respective county government. From the research findings, the study revealed that majority of the respondents as shown by 51.28% had served the county for 2-3 years whereas 20.51% of the respondents had served the county for a period of 3-4 years, 15.38% had served the county for 4-5 years, 7.69% had served the county for 1 to 2 years, whereas 5.14% had served the county for 6 to 10 years and only 5.14% of the respondents had served the county for a period of less than 1 year. The inference here is that most of the respondents had worked for the county for an appreciable duration, and hence, they were able to provide dependable responses.

4.2.5 Level of Education

The research endeavored to determine to what level the respondents were educated

Table 4. 5 : Education Level

Level of Education	Frequency	Percentage
Secondary	3	7.69
Tertiary College	13	33.33
Undergraduate	20	51.28
Postgraduate	3	7.69
Total	**39**	**100**

Source: Researcher (2016)

On respondents' achieved degree of education, the research showed that most of the respondents (51.28%) had attained, undergraduate degrees or whereas 33.33% of the respondents had attained tertiary college diplomas ,7.69% of the respondents had attained postgraduate degree and only 7.69% of the respondents had attained secondary education. This suggests that the respondents had a good education, and hence, they were able to easily understand questionnaire issues.

4.3 Extent to Which E-Procurement has Been Implemented by County Government

The respondents were required to show the degree to which e-procurement had been executed by their county government. The responses were given a score ranging from one to five, where 1 meant Very small degree, 2= Small degree, 3= Moderate degree, 4=Great degree, and 5=Very great degree. Mean and Standard deviation were calculated as indicated in Table 4.4 below.

Table 4.6: Degree to Which E-Procurement has Been Implemented.

E-Procurement Implementation	Mean	Std. deviation
Tenders are advertised online	4.10	0.25
All counties staff make requisitions online	4.05	0.18
There is competitive bidding and sourcing	3.98	0.21
Specifications for procured items are posted to county website	3.92	0.22
Short listing of tenders is done by the e-procurement system	3.90	0.27
Ordering is done through the county website	3.87	0.28
Accountability is being encourage	3.81	
There is improved flow of information	3.79	0.25

Source: Researcher (2016)

The study endeavored to determine the degree to which concurred with the aforementioned assertions pertaining to the implementation of electronic procurement. the respondents indicated that, to a great extent, there is improved flow of information (M=3.79, SD=0.19), short listing of tenders is done by the e-procurement system (M=3.90, SD=0.27), the respondents also indicated that accountability is being encourage (M=3.81, SD=0.17), ordering is done through the county website (M=3.87, SD=0.28). The findings are in line with Shirzad and Bell (2012), suggesting that the majority of e-procurement applications are aimed at handling one of the three basic components of procurement functions, namely: indirect procurement, sourcing, and direct procurement. Counties embrace e-procurement with a view to boosting the versatility of operations, strategic adaptability, technical adaptability, as well as contextual flexibility. The respondents further agreed that tenders are advertised online (M=4.10, SD=0.25), all counties staff make requisitions online (M=4.05, SD=0.18), there is competitive bidding and sourcing (M=3.98, SD=0.21), and that specifications for procured items are posted to county website (M=3.92, SD=0.22). The findings confirm results of Garran (2005), that

the catalysts of electronic procurement within the public sector are social, cultural and political in nature. Resources and specialist competencies are need to aid the implementation of e-procurement within county authorities. Additionally, the process calls for proper collaborative change management instruments as wells training plans. It is also essential to implement practices, processes, and systems that facilitate the execution of e-procurement. All the score values were positive indicating that the statements were above the mean average value

4.4 Bottlenecks in E-Procurement implementation

The respondents were required to show the degree to which bottlenecks hinder the implementation of e-procurement. The responses were given scores ranging from one to five, whereby 1= Very small degree, 2=Small degree, 3= Moderate degree, 4=Great degree and 5=Very great degree. Mean and Standard deviation were calculated as shown in Table 4.4 below.

Table 4.7: Extent to which there are Bottlenecks in Implementation of E-Procurement

Bottlenecks Hindering the Implementation of E-Procurement	Mean	Std. deviation
Late supplier involvement	4.46	0.17
Inadequate personnel training	4.38	0.26
Bad quality of information	4.29	0.28
Inadequate top leadership official backing	4.12	0.27
Absence of ongoing performance measurement	4.11	0.21
Failure to comply with best practices	4.02	0.24
Slow user acceptance of new information systems	3.88	0.22

Source: Researcher (2016)

This study attempted to figure out the degree to which respondents concurred with the aforementioned assertions pertaining the obstacles frustrating the execution of e-procurement**,** the respondents showed that, to a great extent, there is late supplier involvement (M=4.46, SD=0.17), lack of proper staff training (M=4.38, SD=0.26), poor information quality (M=4.29, SD=0.28). The findings are in line with Steinberg (2003), that although governments have been working to organizations within the public sector to adopt e-Procurement, it seems like this has not been smooth sailing, and the pace of e-procurement adoption has been anything but dramatic, as confirmed by Steinberg's (2003), assertion that government electronic procurement initiatives have failed "notoriously.".

The study further revealed that the respondents also indicated that lack of top official support (M=4.12, SD=0.27), failure to continuously measure key benefits hinder implementation of e procurement (M=4.11, SD=0.21), the respondents further agreed that failure to comply with best practices (M=4.02, SD=0.24), and that Slow user acceptance of new information systems (M=3.88, SD=0.22). The findings prove Panayiotou et al (2004), that a number of general obstacles encompass the possible security consequences for doing business via the web, the absence of interoperability with current applications, and the reluctance by supplying vendors to accept this element of e-commerce. On top of these overall hindrances, particular obstacles will be specified that pertain to individual organizations. All the score values were positive indicating that the statements were above the mean average value

4.5 Effects of E- Procurement Implementation on performance

The respondents were asked to indicate the extent to which improvement on performance of e- procurement was implemented by county government. The response was rated on a scale of 1-5 on which: 1= Very small extent, 2=Small extent, 3= Moderate extent, 4=Great extent and 5=Very great extent. Mean and Standard deviation were calculated as shown in Table 4.4 below.

Table 4.8: Effects of E-Procurement implementation on Performance

Performance of E- Procurement Implementation	Mean	Std. deviation
Online advertisement of tenders has improved transparency	4.51	0.19
Online advertisement of tenders has ensured the county get competitive suppliers	4.44	0.18
Online call for requisition has increase speed	4.30	0.22
Online call for quotations has ensured effectiveness	4.28	0.23
Online Ordering has improved the cycle time	4.19	0.17
The web-based short listing of tenders has effected openness	4.11	0.27
Internet-based tender short-listing has boosted effectiveness	4.05	0.24
Internet ordering has helped in cost reduction	4.05	0.19
Online requisition by county staff has improved accountability	4.03	0.15
Online requisition by county staff has improved flexibility	3.94	0.21
Online call for quotation has improved flexibility	3.91	0.27
Internet request for requisitions has increased accountability.	3.87	0.20

Source: Researcher (2016)

The respondents indicated that, to a great extent, online advertisement of tenders has improved transparency (M=4.51, SD=0.19), online advertisement of tenders has ensured the county get competitive suppliers (M=4.44, SD=0.19), online call for requisition has increase speed (M=4.30, SD=0.22), the respondents also indicated that, to a great extent online call for quotations has ensured effectiveness (M=4.28, SD=0.23), online ordering

has improved the cycle time (M=4.19, SD=0.17), online short listing of tenders has ensured transparency (M=4.11, SD=0.27). The findings are in line with Roma and McCue (2012), e-procurement brings about a decline in the costs of transactions, enhanced efficiency of process, better contract compliance, shorter lifecycle periods, lower inventory expenditure, and enhanced operational and cost efficiencies. E-procurement results in better procurement performance. It makes it possible to document the bidding process digitally, which promotes accountability and openness, ultimately boosting procurement performance.

Further, the research showed that most of the respondents concurred that online short listing of tenders has improved effectiveness (M=4.05, SD=0.24), online ordering has helped in cost reduction (M=4.05, SD=0.19), online requisition by county staff has improved accountability (M=4.03, SD=0.15), they further agreed that online requisition by county staff has improved flexibility (M=3.94, SD=0.21), online call for requisitions has increased accountability. (M=3.87, SD=0.20). The findings concur with Martinez (2008), that e-procurement brings about higher satisfaction of customer requirements, enhanced contract compliance, superior supply chain capabilities, lower costs of storage, and better inventory management. The implementation of E-procurement can cause the building of healthier relations between suppliers and customers and accelerate the attainment of tactical procurement objectives, resulting in better procurement performance. All the score values were positive indicating that the statements were above the mean average value.

4.6 Correlations

The research carried out the Pearson correlation analysis to demonstrate a linear relationship between the projected and descriptive variables. It, thus, helps in figuring out the strengths of relationships within the model, meaning the variable that best defines the link between the performance of procurement and the implementation of e-procurement across all the Kenyan county governments.

Table 4.9: Correlations

		Procurement performance	online advertisement of tenders	Online short listing of tenders.	Online supplier evaluation	Online Requisition.	Online Quotation	Online Ordering
Procurement performance	Pearson Correlation	1	.512	.503**	.481*	.418**	.402**	.499
	Sig. (2-tailed)		.001	.000	.014	.000	.003	.004
	N	39	39	39	39	39	39	39
online advertisement of tenders	Pearson Correlation	.512	1	.016	.005	.103	.293*	.016
	Sig. (2-tailed)	.001		.898	.965	.406	.016	.897
	N	39	39	39	39	39	39	39
Online short listing of tenders	Pearson Correlation	.503**	.016	1	.746**	.021	.168	.731**
	Sig. (2-tailed)	.000	.898		.000	.863	.173	.000
	N	39	39	39	39	39	39	39
Online supplier evaluation	Pearson Correlation	481*	.005	.746**	1	.052	.058	.591**
	Sig. (2-tailed)	.014	.965	.000		.676	.641	.000
	N	39	39	39	39	39	39	39
Online Requisition	Pearson Correlation	.418**	.103	.021	.052	1	.580**	.022
	Sig. (2-tailed)	.000	.406	.863	.676		.000	.862
	N	39	39	39	39	39	39	39
Online Quotation	Pearson Correlation	. 402**	.293*	.168	.058	.580**	1	.170
	Sig. (2-tailed)	.003	.016	.173	.641	.000		.168
	N	39	39	39	39	39	39	39
Online Ordering	Pearson Correlation	.499	.016	.731**	.591**	.022	.170	1
	Sig. (2-tailed)	004	.897	.000	.000	.862	.168	
	N	39	39	39	39	39	39	39

Source: Researcher (2016)

Concerning the correlation of the research variable, this scholar carried out a Pearson moment correlation. The research revealed that online advertising of tenders and procurement performance were connected by a positive correlation coefficient, as the correlation factor of 0.512 indicates. This solid association was revealed to be statistically substantial because the value was 0.001 that's less than 0.05. The research noted solid positive correlation between the internet-based advertising of tenders and the performance of procurement, as indicated by the correlation coefficient of 0.503, of which the substantial value was 0.000, that's lower than 0.05. The research saw a positive correlation between the web-based tender short listing and the performance of procurement as indicated by the coefficient of 0.481, a solid association with statistical significance, with the substantial value being 0.014 that's lower than 0.05. Additionally, the research discovered a positive correlation between internet-based requisition and the performance of procurement, as vindicated by the by correlation coefficient of 0.418, a solid link with statistical significance because the substantial value was 0.000, that's lower than 0.05.

The research discovered a positive correlation between internet quotation and the performance of procurement according to the correlation coefficient of 0.402, a solid association with statistical importance, with the significant value being 0.003 that is lower than 0.05. The research discovered a positive correlation between online ordering and procurement performance as supported by the correlation coefficient of 0.499, a solid association with statistical importance, considering that the significance value was 0.004, that's less than 0.05.

4.7 Regression Analysis Results

This research utilized a multiple regression model to determine the influence e-procurement implementation has on procurement performance among the Kenyan county governments Kenya. The regression equation below was utilized to determine the association between variables $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \varepsilon$; where Y= procurement performance, $\beta 0$= regression constant, β_1, β_2, β_3, β_4 β_5 and β_6 = are the regression coefficients or weights of the below corresponding independent variables; x_1= online advertisement of tenders, x_2= online short listing of tenders, x_3= online supplier evaluation, x_4= online requisition, x_5= online quotation, x_6 = online ordering and e= error term. The answers extracted from each of the respondents formed the basis for gauging the six independent variables. The results are analyzed next.

Table 4.10 Regression Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	Std. Error	Beta		
(Constant)	.189	.135	.174	1.400	.001
online advertisement of tenders (X_1)	.497	.016	.423	3.106	.002
Online short listing of tenders ($X_{2)}$	.472	.127	.262	3.716	.003
Online supplier evaluation (X_3)	.416	.121	.218	3.438	.004
Online Requisition (X_4)	.397	.119	.123	3.336	.003
Online Quotation (X_5)	.387	.019	.172	20.362	.001
Online Ordering (X_6)	.453	.025	.281	18.122	.001

Source: Researcher (2016)

a) Predictors: (Constant), online advertisement of tenders, online short listing of tenders, online supplier evaluation, online requisition, online quotation and online ordering.
b) Dependent Variable: Procurement Performance.

The regression equation that was worked out is:

$$\mathbf{Y = 0.189 + 0.497X_1 + 0.472X_2 + 0.416X_3 + 0.397X_4 + 0.387X_5 + 0.453X_6 + \varepsilon}$$

The aforementioned regression equation has determined that keeping all electronic – procurement constant (internet advertising of tenders, internet tender short listing, online supplier evaluation, online requisition, online quotation and online ordering) constant, other factors influencing procurement performance will be 0.189 ($p = 0.001 < 0.05$). The result also indicate that holding all other independent variables at 0, a unit increment in internet advertisement of tenders will cause a 0.497 ($p = 0.002 < 0.05$) increase in the procurement performance. The findings also reveal that keeping all the other independent variables at 0, a unit increment in online tender short listing causes a 0. 472 ($p = 0.003 < 0.05$) increase in the procurement performance. On the other hand, the outcomes also demonstrate that keeping all other independent variables at 0, a unit increment in online supplier evaluation results in a 0. 416 ($p = 0.003 < 0.05$) increase in the procurement performance. Similarly, the outcomes also reveal that keeping all other independent variables at 0, a unit increment in online requisition results in a 0.397 ($p = 0.003 < 0.05$) increase in the procurement performance, On the other hand, the outcomes also demonstrate that keeping all other independent variables at 0, a unit increment in online quotation results in a 0. 387 ($p = 0.001 < 0.05$) increase in the procurement performance

and that keeping all other independent variables at 0, a unit increment in online ordering results in a 0. 453 ($p = 0.001 < 0.05$) increase in the procurement performance.

Table 4.11 Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.879[a]	0.773	0.720	0.02

Source: Researcher (2016)

The six independent variables that are in the model explain 77.3% of e-procurement implementation influencing procurement performance as symbolized by coefficient of determinant (R squared). As such, the inference from this is that other elements not factored within the model in this study account for contribute 22.7% in influencing procurement performance. Based on the rule of Thumb the model is statistically significant, 77.3%>70%. The findings are in line with Martinez (2008) assertion that there's a relationship between e-procurement and lower transaction costs, more efficiency of processes, higher contract compliance levels, shorter cycle durations, lower inventory expenditure, enhanced efficiency of costs and operation, with the overall outcome of accelerating procurement performance.

Table 4.12 ANOVA of E-Procurement Implementation Influence on Performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	475.932	6	79.322	27.88	.001[a]
Residual	91.040	32	2.845		
Total	566.972	38			

Where 2.37 is the f-critical.

Source: Researcher (2016)

ANOVA was utilized in the working out of the importance of the regression methodology where an f-significance value of p that was lower than 0.05 calculated

(p=0.001 <0.05). The model is statistically significant in predicting how online advertisement of tenders, online short listing of tenders, online supplier evaluation, online requisition, online quotation, online ordering influence procurement performance. The inference here is that there's a lower than 0.05 chance of the regression model generating an incorrect projection. As such, the confidence level of the regression model is higher than 95%, suggesting a higher dependability of the outcomes. It implies that the regression model is statistically significant since 27.88>2.37. Since f calculated is greater than f -tabulated this shows that there exists a statistical significant difference between variables

4.8 Discussion of the Findings

The study established that there was positive correlation coefficient between online advertisement of tenders and procurement performance, as shown by correlation factor of 0.512. The study further found that the outcomes also demonstrate that keeping all other independent constant, a unit increment in online advertisement of tenders results in a 0.497 increment in procurement performance. The outcomes concur with Martinez (2008), that e-procurement results in superior satisfaction of customer requirements, better contract adherence, better supply chain capabilities, lower storage expenditure, as well as greater inventory management. The incorporation of E-procurement could bring about healthier associations between supplier and customer, and accelerate the attainment of strategic procurement targets, all of which results in improved procurement performance.

The study further found a positive correlation between online short listing of tenders and procurement performance as shown by correlation coefficient of 0.503. The research

found that tenders are advertised online, all counties staff make requisitions online, there is competitive bidding and sourcing and that specifications for procured items are posted to county website. The findings confirm results of Garran (2005), influences that are social, political, and cultural in nature are the main drivers of e-procurement within the public sector, and resources as well as specialty competencies are need in the adoption of e-procurement among county governments. The regression analysis further indicated the outcomes also demonstrate that keeping all other independent variables at 0, a unit increment in online short listing of tenders results in a 0.472 increase in the procurement performance. The outcomes findings concur with Ageshin (2001) who stated that a sufficient, fully-fledged e-procurement methodology is required for general success. Extra programs offer the infrastructure for the supplier databases, management of expenditure, storing important vendor details, and serving as a digital contracts repository.

The study found a strong positive correlation between online supplier evaluation and procurement performance, as shown by correlation coefficient of 0. 481. The findings confirm Roma and McCue (2012), arguments that the principle of competition, equal opportunity and convenience of access, transparency, openness, and decency form the basis for tendering. Public organization are required by law to adopt fair tendering as way to preempt fraud, squander corruption, as well as local protectionism, hence increasing procurement performance. The study also reveals that that keeping all other independent variables at 0, a unit increment in online supplier evaluation results in a 0. 416 rise in the procurement performance. The study further revealed that, to a great extent, there is improved flow of information, the e-procurement application is helping short list tenders

online, the respondents also indicated that accountability is being encourage, ordering is done through the county website.

The study further revealed a positive correlation between online requisition and procurement performance as shown by correlation coefficient of 0.418. The outcomes also demonstrated that keeping all other independent variables at 0, a unit increment in online requisition results in a 0.397 increment in the procurement performance. These results are in line with MacManus (2002) who asserted that the accounting department could establish purchase requisition as a component of an entity's internal financial regulations to facilitate the management of purchase requests. Such requests for establishment of processes to facilitate the sourcing of goods and services are filed properly and sent for approval inside an entity before delivery to the accounting personnel.

Additionally, the research demonstrated a positive correlation between online quotation and procurement performance as shown by correlation coefficient of 0.402. The findings are in line with Croom and Brandon-Jones (2004) that it is rewarding for firms to invest in electronic procurement technology and online quotations which improve efficiencies. In the long run, the significant costs cuts will let firms focus their resources toward more important projects. The outcomes also demonstrate that keeping all other independent variables at 0, a unit increment online quotation results in a 0. 387 increment in the procurement performance. The research additionally revealed that online advertisement of tenders has improved transparency and enabled county governments to identify competitive vendors, suppliers, website call for requisition has increase speed, the respondents also indicated that, to a significant degree, online call for quotations has

guaranteed effectiveness, ordering via the internet has shortened the lifecycle time, and internet tender short listing has fostered ensured openness.

The study further found a positive correlation between online ordering and procurement performance as shown by correlation coefficient of 0.499. The findings are in line with MacManus (2002) that the advantages of web-based ordering demonstrate cost savings as well as improvements in the way firms conduct business. It enables them to handle a select few suppliers which results in lower administrational costs. It further found that the keeping all other independent variables at 0, a unit increment in online ordering results in a 0. 453 increase in the procurement performance. The study further revealed that there is late supplier involvement, inadequate staff training, bad quality of information, insufficient official top management support, and lack of metrics to track core benefits on an ongoing basis obstruct the adoption of e procurement. These respondents further agreed about the failure to comply with best practices and the sluggish welcoming of emerging information systems. The findings prove Panayiotou et al (2004), that several overall hindrances extent to security consequences for doing business using the web, absence of interoperability with existing applications and the reluctance of supplying vendors to accept this element of e-commerce.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter a brief review of the data outcomes upon the evaluation of E-procurement implementation and performance within the Kenyan county governments is presented. Conclusions are drawn and recommendations offered. It is split into the summary of findings, inferences, suggestions, research shortcomings, and areas requiring additional research.

5.2 Summary of Findings

Regarding online advertisement of tenders, the study established that there was positive relationship between online advertisement of tenders and procurement performance. Therefore, increase in online advertisement of tenders in County Governments in Kenya increases procurement performance. The study agrees with confirm Martinez (2008) who finds that that e-procurement brings about higher satisfaction of customer requirements, enhanced contract compliance, superior supply chain capabilities, lower costs of storage, and better inventory management. The study further revealed that online short listing of tenders in County Governments in Kenya influences procurement performance positively. The study also found that tenders in County Governments in Kenya are advertised online, all counties staff make requisitions online, there is competitive bidding and sourcing and that specifications for procured items are posted to county website.

The study found that in County Governments in Kenya, the application of online supplier evaluation has appositive influence on procurement performance. The findings confirm

Roma and McCue (2012), arguments that organizations in the public sector should follow open tendering laws to eliminate fraud, squander corruption, as well as local protectionism, hence increasing procurement performance. The study further revealed that, to a great extent, there is improved flow of information, short listing of tenders is done by the e-procurement system in County Governments in Kenya, the respondents also indicated that accountability is being encourage, ordering is done through the county website.

On the relationship between online requisition and procurement performance in County Governments in Kenya, the study found a strong positive relationship. Therefore, increased online requisition leads to a positive increased in procurement performance. The findings are in line with MacManus (2002), accounting department could establish purchase requisition as a component of an entity's internal financial regulations to facilitate the management of purchase requests. The study further established that the use of online quotation in County Governments in Kenya, has a positive influence on procurement performance. The study further found that online advertisement of tenders has improved transparency; internet advertising of tenders has guaranteed competitive suppliers for county units of governance, Internet call for requisition has increase speed, the respondents also indicated that, to a great extent online call for quotations has ensured effectiveness, online ordering has improved the cycle time County Governments in Kenya. The findings are in line with Croom and Brandon-Jones (2004), that it's rewarding for firms to invest in e-procurement technologies, and internet quotations help improve efficiencies.

On the online ordering, the study revealed that online ordering in County Governments in Kenya, increases procurement performance. The findings are in line with MacManus (2002) that strengths of ordering via the internet demonstrates cost cuts as well as enhancements in company operations. The research also found that Kenyan county governments experience inadequacy of the right personnel, delayed supplier participation, bad quality of information, insufficient backing from top leadership, and lack of ongoing measurements for important benefits, all of which stand in the way of e-procurement adoption. The respondents further agreed that failure to comply with best practices and that slow user acceptance of new information systems. These factors hinder the implementation of e-procurement in County Governments in Kenya

5.3 Conclusion

Based on the findings of this study, the study concluded that online advertisement of tenders, has a great impact on procurement performance in County Governments in Kenya. The study further concluded that online short listing of tenders in County Governments in Kenya influences procurement performance positively. The study also concluded that tenders in County Governments in Kenya are advertised online, all counties staff make requisitions online, there is competitive bidding and sourcing.

The study further concludes that the application of online supplier in County Governments in Kenya impacts the procurement performance in a positive way. The study further concludes that, to a great extent, there is improved flow of information, short listing of tenders is done by the e-procurement system in County Governments in Kenya,

The study further concluded that online requisition has a great positive relationship on procurement performance in County Governments in Kenya. Therefore, increased online requisition leads to a positive increased in procurement performance. The study further concluded that the use of online quotation in County Governments in Kenya, has a positive influence on procurement performance.

On the online ordering, the study concluded that online ordering in County Governments in Kenya, positively increases procurement performance. The research further showed that inadequacy of the right personnel, delayed supplier participation, bad quality of information, insufficient backing from top leadership, and lack of ongoing measurements for important benefits, all of which stand in the way of e-procurement adoption among different Kenyan county governments.

5.4 Recommendations based on the research

This research suggests that county governments must focus on enterprise resource planning requirement during every phase of procurement to improve procurement performance.

It is the recommendation of this study there ought to be adaptation of the appropriate Information and Communications Technologies (ICT) in the County Governments in Kenya necessary for successful implementation of e-procurement.

5.5 Limitations of the Study and Suggestions for further research.

Most of the respondents in the counties were busy and therefore were not in a position to provide all the necessary information. However, after follow-ups by the researcher, they were able to either complete the questionnaires or delegate it to their juniors who were able to provide the information.

The research met respondents who were unwilling to divulge details they perceived to be private. In order to resolve the issue, this study guaranteed the respondents of proprietary measures under which their information would be handled. The research also guaranteed the respondents that the all captured details would be used in confidence and only for scholarly objectives.

This research concentrated on the execution of e-procurement implementation and performance among the Kenyan county governments. The study proposed that similar study ought to be conducted regarding the e-procurement adoption and performance within the Kenyan public sector.

Further research should be carried out on challenges facing the implementation of e-procurement and performance among all Kenyan county governments.

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APPENDIX I: RESEARCH QUESTIONNAIRE

The questionnaire will help to collect information on the relation between E-procurement and performance of county governments in Kenya. Kindly answer the questions by writing a brief statement or ticking in the boxes provided as will be applicable. The information provided will be treated as strictly confidential and at no instance will your name be mentioned in this research. This research is intended for an academic purpose only.

SECTION ONE: DEMOGRAPHIC INFORMATION

1. Gender Male ❑ Female ❑

2. Age ❑ below 30 years ❑ 30-39 years ❑ 40-49years ❑ 50-59 years ❑ 60-69 years

3. For how long have you work(ed) with this county?

a) ❑ Below 1 year

b) ❑1-2 years

c) ❑ 2-3 years

d) ❑ 3-4 years

e) ❑ 4-5 years

4. What is your highest level of education?

i. Secondary ❑ iii. Tertiary College ❑ ii. Undergraduate ❑ iv. Postgraduate ❑

v. Other (specify) ……

SECTION TWO: TO WHAT EXTENT HAS E-PROCUREMENT BEEN IMPLEMENTED BY COUNTY GOVERNEMENT?

Kindly give the extent of your agreement with the following statements about e-procurement implementation in your county?

Very great extent [I] great extent [2] moderate extent [3] small extent [4] very small extent [5]

	1	2	3	4	5
Tenders are advertised online					
Short listing of tenders is done by the e-procurement system					
Specifications for procured items are posted to county website					
All counties staff make requisitions online					
Ordering is done through the county website					
There is competitive bidding and sourcing					
There is improved flow of information					
Accountability is been encourage					

SECTION THREE: TO WHAT EXTENT DOES THE FOLLOWING HINDER THE IMPLEMENTATION OF E-PROCUREMENT IN THE COUNTY GOVERNMENT?

To what extent do you agree with these statements?

Very great extent [I] great extent [2] moderate extent [3] small extent [4] very small extent [5]

NO	DESCRIPTION	1	2	3	4	5

i	Lack of top official support					
ii	Failure to comply with best practices					
iii	Slow user acceptance of new information systems					
iv	Late supplier involvement					
v	Lack of proper staff training					
vi	Poor information quality					
vii	Failure to continuously measure key benefits hinder the implementation of e procurement					

SECTION FOUR: WHAT IS THE EFFECTS ON PERFORMANCE ON IMPLEMENTATION OF E- PROCUREMENT IN THE COUNTY GOVERNMENT?

The following are statements about performance measures in the county governments in Kenya. To what extent do you agree with these statements?

Very great extent [I] great extent [2] moderate extent [3] small extent [4] very Small extent [5]

NO	DESCRIPTION	1	2	3	4	5
i	Online advertisement of tenders has improved Transparency					
ii	Online advertisement of tenders has ensured the county get competitive suppliers					

iii	Online requisition by county staff has improved Flexibility					
iv	Online requisition by county staff has improved Accountability					
v	Online short listing of tenders has improved Effectiveness					
vi	Online short listing of tenders has ensured Transparency					
vii	Online call for requisitions has increased accountability.					
viii	Online call for requisition has increase speed					
vii	Online call for quotations has ensured effectiveness					
viii	Online call for quotation has improved flexibility					
ix	Online ordering has helped in cost reduction					
x	Online Ordering has improved the cycle time					

APPENDIX II: LIST OF COUNTIES IN KENYA

1. Baringo County
2. Bomet County
3. Bungoma County
4. Busia County
5. Elgeyo/Marakwet County
6. Embu County
7. Garissa County
8. Homa Bay County
9. Isiolo County
10. Kajiado County
11. Kakamega County
12. Kericho County
13. Kiambu County
14. Kilifi County
15. Kirinyaga County
16. Kisii County
17. Kisumu County
18. Kitui County
19. Kwale County
20. Laikipia County
21. Lamu County
22. Machakos County
23. Makueni County
24. Mandera County
25. Marsabit County
26. Meru County
27. Migori County
28. Mombasa County
29. Murang'a County
30. Nairobi County
31. Nakuru County
32. Nandi County
33. Narok County
34. Nyamira County
35. Nyandarua County
36. Nyeri County
37. Samburu County
38. Siaya County
39. Taita Taveta County
40. Tana River County
41. Tharaka Nithi County
42. Trans Nzoia County
43. Turkana County
44. Uasin Gishu County
45. Vihiga County
46. Wajir County
47. West Pokot County