2016

Stakeholder perception on implementation of public E-procurement in Kenya

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Stakeholder Perception on Implementation of Public E-Procurement in Kenya

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Submitted in partial fulfilment of the requirements for the Degree of Master of Commerce (Forensic Accounting) at Strathmore University

School of Management & Commerce

Strathmore University

Nairobi, Kenya

June 2016

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself. This research project is my original work and has not been submitted for an award of degree or any other award in any other university.

Esther Njeri Nyangaresi

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Approval

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ABSTRACT

The Kenyan e-procurement system, also known as Integrated financial management information system (IFMIS) is an automated procurement system and a core component of public financial reforms in Kenya. It is used for public financial management and control, accounting, audit and reporting (Diamond & Pokar, 2005). It was first implemented in Kenya in 2013.

The e-procurement system has been implemented in the ministries, departments, agencies and 47 county governments. The e-procurement system has automated supplier Management, Requisition Management, Quotation & Tender Management, Contract Management, Order Management, Inventory Management, Receipting Management, Invoice and Payment Management; online approval hierarchy for Purchase Order and Accounts Payable and automation of procurement planning in line with the approved budget estimates.

This study sought to evaluate the stakeholder perception on implementation of e-procurement implementation by the Kenya government. The evaluation included identification and ranking of critical success factors and challenges that impede successful implementation of e-procurement in the Kenya government.

Data was collected through a questionnaire that was distributed to procurement managers in both the government ministries and parastatals, and select government suppliers. The data was analysed using descriptive statistics of percentages, means, standard deviations and frequencies. Content analysis was used to analyse the qualitative data. In addition, the study applied inferential statistics including multiple regressions and test of hypothesis to establish the relationship between identified and ranked critical success factors and success in implementation of e-procurement by the Kenya government.

The study rated as moderate, the success of implementation of IFMIS e-procurement by the Kenya government. Capacity building, system integration, IT infrastructure and leadership were identified as critical in successful implementation of e – procurement system by the Kenya government. Poor training, inadequate information technology, (IT) infrastructure for the system, lack of technical expertise and inadequate awareness about the system have been identified as the greatest impediments to the success in implementing IFMIS e-procurement by the Kenya government. The study recommends among other things that, the government invest more in capacity building particularly investing in installation of the right IT infrastructure as

well as training on using the system effectively. This study will be useful to the Kenya government in making e-procurement policies aimed at not only enhancing the success rate, but also addressing the challenges that impede the successful implementation of e-procurement.

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LIST OF ABBREVIATIONS

AIS	Accounting Information System
ANOVA	Analysis of Variance
CoA	Chart of Accounts
CSF	Critical Success Factors
ERP	Enterprise Resource Planning
G2B	Government-to-Business
GoK	Government of Kenya
ICT:	Information and Communication Technology
IEBC:	Electoral and Boundaries Commission
IFMIS:	Integrated Financial Management Information Systems
IT	Information Technology
MRO	Maintenance Repair Operate
NSSF:	National Social Security Fund
OTS	Off-The-Shelf
PFM	Public Financial Management
PPDA:	Public Procurement and Disposal Act
PPOA:	Public Procurement Oversight Authority
SPSS	Statistical Program for Social Sciences
WB	World Bank

ACKNOWLEDGEMENTS

My appreciation is to Almighty God who gave me the strength and resources to accomplish this project. I am grateful to my family for the support they gave me during the time of carrying out this research. I also appreciate the valuable professional guidance I received from my supervisor in conducting this research.

DEDICATION

I would like to thank my academic supervisor, Dr. Wang'ombe who took his valuable time and patience to supervise my thesis. His professional guidance and encouragement enabled me complete the research. I also wish to thank my family who tirelessly stood by me, offering the much needed moral support to complete the entire process. I would mostly like to thank God, whose sufficient Grace during the entire period of my study overwhelmingly enabled me pull through all obstacles.

CHAPTER 1: INTRODUCTION TO THE STUDY

Background

E-procurement has been researched on by various scholars with a view to identify the critical success factors for its implementation. Consequently, different studies have come up with different critical success factors. For instance, some identified three e-procurement success factors namely supplier and contract management; end-user behaviour and e-procurement business processes as well as information and e-procurement infrastructure (Rebecca & Ravi, 2007). There are others who identified the critical success factors as: Technology; Process and People (Nasi, 2005). As a result, there is no uniformity on what actually constitutes the critical success factors. Probably, this may be due to the differences in the various contexts in which the studies were conducted or may be the methodologies used. Whatever the reason, one thing comes out clearly; there is no universal framework of the critical success factors (CSFs) for measuring success/failure of e-procurement implementation in different contexts. Due to the lack of a uniform process of identifying and measuring CSFs, there is a scope limitation for e-procurement implementations (Panda & Sahu, 2012). It is thus important to identify the critical success factors in any particular context. In addition, for the level of implementation success needs to be established in the given context and its relationship with the identified CSF established. This is therefore the gist of this study in the Kenyan context.

The introduction of internet services in the mid-1990s led to an increase in use of e-procurement systems in different fields. Organizations are increasingly engaging in e-business using information and communication technologies and the internet. Public sector agencies across the globe identified e-procurement as a priority for the e-government agenda as the perception of public procurement as a major government function grew (Fernandes & Vieira, 2015). There have been attempts to prove the involvement of e-procurement in the e-commerce revolution (MacManus, 2002).

E-procurement has been defined as the automation of many procurement processes via electronic systems, especially the Internet (Croom & Brandon-Jones, 2007). E-procurement has been perceived as the application of information technologies to facilitate business-to-business (B2B) purchase e-commerce transactions for materials and services (Walker & Harland, 2008). However, it is important that B2B e-commerce should not be confused with e-

procurement. First, e-commerce refers to buying and selling of products or services over electronic system such as internet and other computer network (Devendra et. al., 2012). In this regard, B2B e-commerce entails companies doing business with each other such as manufacturers selling to distributors and wholesalers selling to retailers (Waghmare, 2012). E-procurement has been defined as the automation of many procurement processes via electronic systems, especially the Internet (Croom & Brandon-Jones, 2007).

Implementation of e-procurement being an Information Technology (IT) application is a process that is done in stages. A five-stage framework (initiation, adoption, acceptance, routinization, and infusion) have been proposed and they explain how such IT application are implemented in organizations (Vaidya, Sajeev & Callender, 2006). Infusion is the stage at which the e-Procurement solution is used within the organization to its full potential (Ibid). While there are various forms of eProcurement that concentrate on one or many stages of the procurement process such as e-Tendering, e-Marketplace, e-Auction/Reverse Auction, and e-Catalogue/Purchasing, e-Procurement can be viewed more broadly as an end-to-end solution that integrates and streamlines many procurement processes throughout the organization (Ibid). Although the term "end-to-end e-Procurement" is popular, industry and academic analysts indicate that this ideal model is rarely achieved (ADOIR, 2001). Thus, there is need to understand the process at the different stages in the light of the critical success factors for the implementation.

Adaptation Implementation of e-procurement systems has been alleged to increase transparency and efficiency, makes cash savings, and achieves financial targets in the purchasing process especially in the public sector (Cabras, 2010). E-procurement has also been defined as the automation of many procurement processes via electronic systems, especially the Internet (Croom & Brandon-Jones, 2007). Given the potential benefits of the internet and other web-based related technologies to revolutionize the procurement process, numerous organizations worldwide have adopted e-procurement in an attempt to leverage this technological infrastructure (Teo, Lin, & Lai, 2009).

Countries such as Korea successfully launched and implemented their e-procurement systems (Government electronic Procurement System-GePS) in 2002. The system is responsible for the whole procurement process, including acquisition of all information on national procurement projects, procurement requests, bids, contracting, and payment for 27,000 public organizations and 90,000 private firms with most public organizations in the country, from central

government to local government agencies to public enterprises being able to purchase and contract through GePS (Seong& Lee, 2004). Different forms of technology are appropriate for different procurement activities including e-ordering/e-Maintenance Repair Operate (MRO), web-based enterprise resource planning (ERP), e-sourcing, e-tendering, e-reverse auctioning, e-auctioning and e-informing (Walker & Harland, 2008).

Although a number of public sector agencies are actively pursuing e-Procurement, evidence from the business press reveals that many of the efforts are not meeting original expectations. In fact, the implementation rate of public procurement systems has been slow and many government agencies tend to overstate the degree to which they are involved in e-Procurement (MacManus, 2002). This is despite the benefits that can be achieved from a successful e-Procurement implementation in the public sector. A number of failures of e-Procurement initiatives have been reported in a number of public sector agencies not only in developing countries but in the developed ones like the United States of America (USA), United Kingdom and New Zealand in recent years.

However, implementation of B2B e-commerce has not directly resulted in the success of government e-procurement systems. For instance, the Advantage System – USA's e-procurement systems for the General Service Administration - has been assessed as a "limited success" and it has been recommended by the General Accounting Office that a "comprehensive business strategy" be developed (Seong & Lee, 2004). Chile's e-procurement system, ChileCompra, was also deemed as a failure due to the disappointing results of systems development and use by agencies in the recent past (Seong & Lee, 2004).

Studies done in the recent past have indicated that growth rates in e-procurement implementation across Europe have been under expectations (Davila et al., 2003; Lancioni et al., 2003; Min & Galle, 2003). For instance, in the 2005 declaration of Manchester, the target by EU was that by 2010 at least 50% of public procurement would be made electronically. Nevertheless, by 2010 only 5% of the total public procurement in average was being done electronically, for instance in England, Italy and Scotland, the total public procurement was 5%, 4% and 30% respectively (Tavares, 2010). Furthermore, engaging suppliers in the process, especially smaller organizations, was also proving to be difficult given the expected levels of investment in terms of providing catalogue information to buyers, and market places using different technologies, platforms and business languages (Karjalainen and Kemppainen, 2008; Office of Government Commerce, 2008).

In developing countries such as Kenya, some have claimed that e-procurement is an important instrument for preventing corruption in the procurement of goods and services (Nurmandi & Kim, 2015). It has been alleged that to overcome the concerns relating to corruption in government procurement, information and communication technology (ICT) can play an important role to reduce corruption by promoting good governance (Jennings, 2001), enhancing relationships between government employees and citizens tracking activities, monitoring and controlling the government employees and reducing potentiality of corrupt behaviours (Makau, 2014). As such, the claim that e-procurement reduces corruption may probably be attributed to the allegation that adaptation of e-procurement systems increases transparency and efficiency especially in the public sector (Cabras, 2010).

No wonder The National Treasury is the Kenyan government ministry that is charged with spearheading the public financial management reforms. Within the ministry, there is a department called the Integrated Financial Management Information System (IFMIS) Department which has the mandate of designing, spearheading and managing the Integrated Financial Management Information System re-engineering process in all central government, county governments and all government agencies (Mambo, Ombui & Kagiri, 2015). According to the E-government Strategy Paper 2004, e-procurement was one of the medium term objectives which were supposed to be implemented by June 2007, but the implementation process was observed to be very slow (GoK, 2004).

Although a number of public sector agencies are actively pursuing e-Procurement, evidence from the business press reveals that many of the efforts are not meeting original expectations. In fact, the implementation rate of public procurement systems has been slow and many government agencies tend to overstate the degree to which they are involved in e-Procurement (MacManus, 2002). Despite the benefits that can be achieved from a successful e-Procurement implementation in the public sector, the business press has reported a number of failures of e-Procurement initiatives in a number of public sector agencies not only in developing countries but in the developed ones too like USA, UK and New Zealand in recent years. E-Procurement has been perceived as likely to result in large investments of time and money, without absolute certainty that its full potential will be achieved every time (Heywood, 2002).

The plan to introduce e-procurement in all Kenya's public entities was argued as a way of curbing corruption and reducing tendering delays which was set to be rolled out in 2013 after the completion of a pilot study (PPOA, 2009). Several developments have necessitated changes

that aim at strengthening the system as well as improve service delivery; for example implementation of the new constitution which brought in the concept of county government procurement, this has been a big battlefield between the central government and the county governments (Ndolo & Njagi, 2014). The need to offer youth and women more business opportunities in government tenders has led to the strengthening of the preference and reservation clause, the 30% rule. The emergent of Public Private Partnership (PPP) arrangements as the government seeks to tap into private resources has led to more private interest on government business. Government to government procurement has also lead to more confusion in the ever controversial issue. Citizens interest on government opportunities has also increased tremendously as business opportunities becomes scarce and stiff competition reaching great heights. The above scenario has seen increased procurement corruption and fraud related complaints to the ethics and anticorruption commission, more procurement reviews/appeals as well as contract nullifications by the Public Procurement Administrative Review Board (PPARB) (Government of Kenya, 2013)..

The e-procurement system in Kenya is anchored on the Integrated Financial Management System (IFMIS). The Government of Kenya aims to achieve the following objectives through the implementation of an e-procurement system. The objectives include the following: to enhance transparency in public procurement; achieve cost savings; reduce inventory costs; achieve internal arbitrage and ensure consistent and sustainable contract development (PPOA, 2009). President Uhuru, during the launch of the e-procurement system in Nairobi said that by introducing transparency and accountability through the e-Procurement, there were expectations that it would eliminate the abuse of the country's procurement system (Pymnts, 2014). Besides the online system, the President said the National Treasury was establishing a digital payment system that would accept payments to the government (Pymnts, 2014).

The National Treasury is Kenya government's ministry that is charged with spearheading the public financial management reforms., Within the ministry, there is a department called the Integrated Financial Management Information System (IFMIS) Department which has the mandate of designing, spearheading and managing the Integrated Financial Management Information System re-engineering process in all central government, county governments and all government agencies (Mambo, Ombui & Kagiri, 2015). According to the E-government Strategy Paper 2004, e-procurement was one of the medium term objectives which were supposed to be implemented by June 2007, but the implementation process was observed to be

very slow (GoK, 2004). However thus, the obstacles cannot be underestimated. The government has dragged in the implementation largely due to the new political dispensation. In addition, a wide range of organizations are also struggling to adopt information and communication technology in their procurement functions (Bilali & Bwisa, 2015). Furthermore, IFMIS systems are complicated, expensive and difficult to manage and maintain. Adoption barriers could stem from major areas of infrastructure, strategy, people or culture (Karthik & Kumar, 2013).

It is thus clear that the road to implementing successful IFMIS in Kenya, like in any other developing country is paved with difficulties. The public procurement system in Kenya has been faulted for being time consuming, rogue, inflexible and not corrupt free (Mokaya, 2013). Often the complaints emanate from disgruntled bidders and politicians who would be happy to influence the process in their favour. However, this is not always the case since sometimes raised concerns have stood to be the truth. Several developments have necessitated changes that aim at strengthening the system as well as improve service delivery; for example implementation of the new constitution which brought in the concept of county government procurement, this has been a big battlefield between the central government and the county governments (Ndolo & Njagi, 2014). The need to offer youth and women more business opportunities in government tenders has led to the strengthening of the preference and reservation clause, the 30% rule. The emergent of Public Private Partnership (PPP) arrangements as the government seeks to tap into private resources has led to more private interest on government business. Government to government procurement has also lead to more confusion in the ever controversial issue. Citizens interest on government opportunities has also increased tremendously as business opportunities becomes scarce and stiff competition reaching great heights. The above scenario has seen increased procurement corruption and fraud related complaints to the ethics and anticorruption commission, more procurement reviews/appeals as well as contract nullifications by the Public Procurement Administrative Review Board (PPARB) (Government of Kenya, 2013).

The hurdle in the implementation of e-procurement system in Kenya is no surprise. Statistics have indicated that for most governments, e-procurement system implementations have a 30% possibility of success (Panda & Sahu, 2012). This may be attributed to the virtue that implementation of Government-to-Business, (G2B) services, such as public e-procurement, takes time and is expensive, since it entails complex, laborious and expensive interoperation of

interspersed and/or disparate applications, such as ERP systems, ordering, invoicing, billing systems, etc, at both national and international level. Therefore, reduction of development costs and time is a vital prerequisite for the realization of public e-Procurement services (Croom & Brandon-Jones, 2007). However, there is no specific framework for identification and testing of critical success factors in various cultural and environmental contexts (Panda & Sahu, 2012). Due to the lack of a uniform process of identifying and measuring CSFs, there is a scope limitation for e-procurement implementations (Panda & Sahu, 2012).

It is thus clear that the road to implementing successful IFMIS in Kenya, like in any other developing country is paved with difficulties. The government has dragged in the implementation largely due to the new political dispensation. In addition, a wide range of organizations are also struggling to adopt information and communication technology in their procurement functions (Bilali & Bwisa, 2015). Furthermore, IFMIS systems are complicated, expensive and difficult to manage and maintain. Obstacles notwithstanding, the task is feasible. Adoption barriers could stem from major areas of infrastructure, strategy, people or culture (Karthik & Kumar, 2013). The success and failure stories in different case scenarios imply that there is need for a much better understanding of e-Procurement use implementation in the public sector in different contexts (Tonkin, 2003) particularly on the CSF and how they relate to the implementation as well as the challenges hindering the process. As such, this study sought to enhance the this understanding of e-procurement in the Kenyan context by critically evaluating the implementation of IFMIS e-procurement system in the light of the critical success factors for its implementation in the country, the potential benefits as well as the challenges to its implementation.

1.2 Problem Definition

It has been argued that developed countries have a higher probability of successfully implementing and adopting e-procurement systems than developing countries due to different factors such as the digital divide between the rich and poor countries (Walker & Harland, 2008). Even so, lack of a uniform process of identifying and measuring CSFs has caused a scope limitation for e-procurement implementation and success measurement (Panda & Sahu, 2012). For this reason, it would be difficult for any research that may be interested in assessing successful implementation of e-procurement in any particular context without a defined set of the critical success factors. In addition, the lack of a defined set of CSFs may result into a

misguided priority during implementation whereby attention may be given to other factors which may not necessarily be the CSFs in that specific context.

In Kenya, the Public Management Act (2012) was enacted to enable all procurement of goods and services for every government entity to be carried out in accordance with Article 227 of the Constitution and the relevant legislation on procurement and disposal of assets. The electronic procurement and Supplier portal were launched by H.E. the President in August 2014. The e-procurement system has been implemented in the ministries, departments, agencies and 47 county governments. The e-procurement system has automated supplier Management, Requisition Management, Quotation & Tender Management, Contract Management, Order Management, Inventory Management, Receipting Management, Invoice and Payment Management; online approval hierarchy for Purchase Order and Accounts Payable and automation of procurement planning in line with the approved budget estimates. Other automated processes include supplier engagement and training on how to submit bids online through the supplier portal as well as adoption of item master in line with the International Standard Goods/Service Classification System (UNSPSC) (The National Treasury, 2015).

Despite this directive, evaluation of success in implementation of e-procurement by the Kenya government lacks a defined framework of the CSFs. This is because prior studies on this area have not clearly identified and rated the success factors. A study on e-procurement adoption by Government parastatals in Kenya from a suppliers' perspective concluded that attitude and supplier capacity can lead to adoption or non-adoption of e-procurement (Kinoti, 2013). However, this study only covered the government parastatals while e-procurement is not in the parastatals alone. A research on e-procurement readiness factors in Kenya's Public sector to determine the extent of e-procurement levels in public institutions in Kenya concluded that technology, organization's finance, leadership and integrity, legal framework and technical preparedness, international law and employee attitude, procurement policy and national procurement law, e-procurement adoption and staff information technology adequacy and online marketplace and Government support are critical in successful implementation of e-procurement by Kenya government (Orina, 2013). However, this study did not identify the specific CSFs from this set, neither did it measure implementation success and relate it with the identified factors.

It is therefore hard to evaluate the implementation success of e-procurement in Kenya without a defined set of the CSFs. This raises the question, what are these CSF as far as Kenya is concerned? What is the level of e-procurement implementation success and what is the relationship with these CSFs? Given that the few studies that have made efforts to evaluate the IFMIS e-procurement system in the country have not adequately addressed these concerns, this study sought to address this by critically evaluating the implementation of e-procurement system in Kenya with an emphasis on the critical success factors, the relationship between these factors and the level of success in the implementation as well as the challenges to the implementation.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this study is to evaluate stakeholder perception on implementation of integrated financial management information system public e-procurement system in the Kenyan government.

1.3.2 Specific Objectives

(i) To identify the critical success factors for successful implementation of e-procurement system in the Kenyan government

(ii) To examine the relationship between the critical success factors and the successful implementation of e-procurement by the Kenya government.

(iii) To establish the challenges hindering successful implementation of e-procurement system in the Kenyan government

1.4 Research Questions

The study sought to answer the following questions:

(i) Which are the critical success factors for successful implementation of e-procurement system by the Kenyan government?

(ii) What is the relationship between the critical success factors and implementation of e-procurement?

(iii) What are the challenges hindering successful implementation of e-procurement system in the Kenyan government?

1.5 Scope of the Study

This study evaluated the implementation of the IFMIS public e-procurement system in the Kenyan government and considered the period between 2010 and 2015. 2010 (after the introduction of the new constitution) to date. It analysed the CSFs likely to influence the successful implementation of IFMIS e-procurement with a view to identifying the specific CSFs in the Kenyan case as far as the implementation is concerned. The study also examined the relationship between the CSFs identified and the implementation success. In addition, the challenges to the implementation of the system were assessed. Thus the study covered the ministries in the Kenyan government, the parastatals as well as the government suppliers so that the issue was analysed from different stakeholders' perspectives.

1.6 Significance of the Study

This study can aid in establishing specific critical factors to be considered for successful implementation of public e-procurement systems in the Kenyan government. By so doing, this can help the Kenyan government to have a useful insight in setting up priorities for ensuring the implementation is wholly successful. This can be useful in the development of relevant policies to ensure the successful implementation of e-procurement system.

In addition, the study highlights the challenges to the implementation. This is necessary to help the different stakeholders identify the likely obstacles choking the implementation in their respective organizations. As such, they can be more informed on the strategies that can be put in place to address the barriers to the implementation.

Moreover, the study can help future researchers who wish to research more about public e-procurement system in Kenya to have a base on which to develop hypothesis and arguments concerning public e-procurement systems and processes.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the existing literature on e-procurement systems. The chapter reviews the literature documented in the studies that have been done on this topic, with an emphasis on the significant aspects of these studies as far as the study objectives are concerned. It begins by developing the theoretical framework for the study. The chapter goes further to present an empirical review of the studies by other researchers who have conducted similar or related studies. Furthermore, the chapter builds the conceptual framework of the study and identifies the research gap that was addressed.

2.2 The Concept of IFMIS E-Procurement

There exists varying definitions of e-procurement in literature. E-procurement can be defined as the use of information technologies to facilitate B2B purchase transactions for materials and services (Wu et al., 2007). Six forms of e-procurement have been identified including e-ordering/e-Maintenance Repair Operate (MRO), web-based enterprise resource planning (ERP), e-sourcing, e-tendering, e-reverse auctioning/e-auctioning and e-informing (de Boer et al., 2002). In a different perspective, e-procurement has been classified into three main categories – transaction management for managing the requisition to payment process; brokerage such as using electronic exchanges and e-auctions; and electronic integration which may involve shared information systems in the supply chain such as EDI or sharing computer-aided design systems(Chopra et al., 2001; Kalakota, 2000). The integration of information across companies within supply chains is a pre-requisite for efficient, responsive operations (Mabert et al., 2003).

Integrated financial management information system (IFMIS) is an automated system that is used for public financial management and control, accounting, audit and reporting (Diamond &Pokar, 2005). It is an information system that has the ability to track financial events and summarize financial information. In its basic form, an IFMIS is more or less of an accounting system configured to operate in line with the needs and aspects of the environment in which it is installed. When well designed, IFMIS may provide several features that may help to detect excessive payments, fraud and theft (Priem& Butler, 2001).In most instances, the introduction of IFMIS reforms have been a process innovation involving a radical and comprehensive restructuring of procedures to jumpstart and enhance the financial management system

(Brockman & Anthony, 2002). In such an approach, Information Technology is being used as the driver of change rather than in support of the financial management reform process.

The long term aim of the e-procurement initiative is to use Internet technologies to bring government agencies in the country and suppliers around the world together into a virtual trading environment (Zaharah, 2007). E-procurement is a multi-buyer, multi-supplier electronic procurement domain, which allows government agencies to function as independent buying entities under a single buying organization (Darin, 2010). Benefits of e-procurement are in line with the objectives of internationally recognized public procurement systems and they include: enhanced transparency & compliance, increased performance & quality, and economic development (Subramaniam & Shaw, 2002). Nevertheless, to realize the full potential of these technological advancements in the field of public procurement is in itself a challenge. Perceiving these developments merely as technological issues is a misunderstanding of their reach and relevance for policy, training, infrastructure, design, production and delivery, as well as technical literacy and awareness (Zaharah, 2007).

2.3 Successful Implementation of E-Procurement

E-Procurement is an Internet technology solution facilitating corporate buying using the Internet. Four major e-procurement Internet-based ICT tools are identified (Davila et al, 2003). E-procurement software refers to any internet-based software application (traditional EDI e-procurement systems have also migrated to Internet) that enables employees to purchase goods from approved electronic catalogues in accordance with company buying rules, and captures necessary purchasing data in the process (Bilali & Bwisa, 2015). To achieve that, the software uses protocols to automatically route and move through the necessary approval processes all employees' purchase selections of a good found on a supplier catalogue. Internet market exchanges are called the e-procurement systems that bring together multiple buyers and sellers in one central virtual market space and enable them to buy/sell from each other at a dynamic price. Internet B2B auctions are the third type of e-procurement systems referring to events in which multiple buyers place bids to acquire goods/services at an Internet site (Bilali & Bwisa, 2015).

2.4 Overview of Successful Implementation of E-Procurement

At the Institute of Supply Management in the United States, there was a quarterly assessment of e-procurement between January 2001 and the third Quarter of 2003 by interviewing up to

700 of those involved in the purchase of goods and services (Forrester, 2001 – 2003). This identified a number of benefits or drivers for e-procurement and mapped the progress of usage within that country. Others case studies based in Boston USA have been carried out looking at goods and services procurement (Minahan & Degan, 2001). The benefits as identified in these studies include: cost savings, improved contract compliance, time savings, reduced administration costs, enhanced market data, improved responsiveness to changes in customer demand, improved collaboration / visibility with / of the supply chain, reduced operating and inventory costs, On-Line negotiated cost reduction, increased accuracy of production capacity and enhanced "Skill sets" and standardized strategies. However, neither of these studies ranked the benefits in any way. Six drivers of e-procurement implementation in the US have been ranked in some past research in rank order with the most important first as: purchasing transaction costs, purchasing order fulfilment time, increased number of suppliers, purchasing cycle time, price paid for goods decrease and headcount to support purchase transactions (Davila et al, 2003).

Work on general e-procurement implementation in Australia has also been documented (Hawking, Stein, Wyld & Forster, 2004). In this context, the drivers were ranked in order of importance as: price reduction in tendering, negotiated unit cost reduction, improved visibility of customer demand, reduced administration costs, improved market intelligence, reduced operational and inventory costs, enhanced decision making, improved contract compliance, shortened procurement cycle times, improved visibility of supply chain management, increased accuracy of production capacity, and enhanced inventory management. There were further investigations on the barriers to e-procurement in Australia identifying and ranking these in order of importance as: inadequate technical infrastructure, lack of skilled personnel, inadequate technological infrastructure of business partners, lack of integration with business partners, implementation costs, company culture, inadequate business processes to support e-procurement, regulatory and legal controls, security, cooperation of business partners, inadequate e-procurement solutions and upper management support(Hawking et al, 2004).

The linkage between European and UK legislation with regard to e-procurement in construction has also been shown (Westcott & Mayer, 2002). In this regard, two small undergraduate studies have been quoted which show uptake of e-tendering at 24% and 15% of their respective populations. However, while referring to drivers and barriers they were not ranked in any way. In a similar manner to the American studies, the Australian and the

European studies give an insight into what the drivers and barriers to e-procurement implementation might but in the context of developed countries.

2.4.1 Successful Implementation of E-Procurement in Kenya

Recently many least developed countries have focused on e-procurement systems as a key tool to reduce corruption by opening competition in government procurement processes to the public. The public procurement in the Kenyan public sector has been undergoing reforms starting with the Public Procurement and Disposal Act 2005 that saw the creation of Public Procurement Oversight Authority. The next step was the implementation of e-procurement for the public sector. According to e-government strategy paper 2004, e-procurement was one of the medium term objectives which were to be implemented by June 2007, but the process was very slow. The manual processes were costly, slow, inefficient and data storage and retrieval poor (Malela, 2010).

In Kenya, the Public Management Act (2012) was enacted to enable all procurement of goods and services for every government entity to be carried out in accordance with Article 227 of the Constitution and the relevant legislation on procurement and disposal of assets. The electronic procurement and Supplier portal were launched by H.E. the President in August 2014. The e-procurement system has been implemented in the ministries, departments, agencies and 47 county governments. The e-procurement system has automated supplier Management, Requisition Management, Quotation & Tender Management, Contract Management, Order Management, Inventory Management, Receipting Management, Invoice and Payment Management; online approval hierarchy for Purchase Order and Accounts Payable and automation of procurement planning in line with the approved budget estimates. Other automated processes include supplier engagement and training on how to submit bids online through the supplier portal as well as adoption of item master in line with the International Standard Goods/Service Classification System (UNSPSC) (The National Treasury, 2015).

2.5 Theoretical Literature

The study was grounded on the Technology Acceptance Model, the Disruptive Innovation and the Meta Theory Model.

2.5.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is based on the Theory of Reasoned Action (TRA). The Theory of Reasoned Action argues that an individual's intention to perform a behaviour is a function of his/her attitude toward the act or behaviour and social norms (Ajzen & Fishbein's, 1980). In this regard, an individual's attitude predicts his/her intention and which in turn shapes the actual behaviour. Grounding on this, The Technology Acceptance Model (TAM) was introduced (Davis, 1989). The theory argues that, Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) are the two basic determinants of user acceptance of technology. It defines PEOU as the degree to which a person believes that using a particular technology would be free from effort. On the other hand, PU is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989).

TAM asserts that PEOU will influence PU when users' view a technology as "easy to use", then they perceive the technology as a "useful one". TAM offers the causal relationships of these two fundamental constructs (PEOU and PU) with three other constructs namely attitude toward using (ATT); behavioural intention to use (BI) and actual use (AU). ATT is defined as "an individual's positive or negative feeling about performing the target behaviour (e.g., using a system)" (Fishbein & Ajzen 1975, p.216). According to TAM, both PEOU and PU influence the users' attitude toward using a technology. It claims that if users find a technology useful and easy to use than they develop a positive attitude toward this technology. The fourth construct, "Behavioural Intention (BI)", is the degree to which a person has formulated conscious plans to perform or not perform some specified future behaviour (Davis, 1989). TAM claims, PU and ATT have a direct influence on BI. If users find a specific technology as a useful one (PU) then they develop a positive intention of using it. In the same way, users' positive attitude toward a particular technology leads them developing an intention to use this technology. TAM suggests that users' behavioural intention (BI) determines their actual use of the technology (AU). If users have intention to use a specific technology then they use it.

Through the assertions in this theory, it was used in this study to test the PEOU and PU among the users of e-procurement system. By investigating the potential benefits of implementation

of the system, it was possible to highlight the PEOU and PU amongst the users hence establishing its likely effect on the implementation process. In addition, the study examined the challenges to the implementation. This further shed light as to whether either PEOU or PU or both amongst the users has been a challenge in the implementation process.

2.5.2 Disruptive Innovation Theory

Several scholars have highlighted the significance of looking beyond firm boundaries and into the role of the market in efforts to understand the difficulties that discontinuous innovations imply. Clayton Christensen developed these ideas in a series of articles (Christensen, 1997; Bower & Christensen, 1995; Christensen & Rosenbloom, 2002). According to the arguments in the articles, sustained innovations are those that have a constantly improving track record within a typical level of competition. Bower and Christensen asserted that organizations continually make improvements on their products or services in response to customer demands. This dynamic approach is predictable and can guarantee success because needs remain stable over time (Christensen, 1997).

However, contrary to the sustained innovations, disruptive innovations do not constitute an improvement in the performance of the current product or service. The argument behind this is that, rather than maintaining a constantly improving track record, disruptive innovations tend to disrupt the track record, generate a product or service radically different from the one being offered, radically changes the rules of the game, and allow for the actors who were not covered under the traditional model (Bower & Christensen, 1995; OECD, 2005). The proposers of disruptive innovation theory argue that disruptive innovations have the following characteristics: Initially there is no demand for them, the client base is small and may be costly; they are not attractive to the best clients; At some level they exceed the current abilities of traditional clients; They are at a new level of competition; the meaning of quality and improvement are different from those in the traditional model; They address potential sectors/clients that under the prevailing logic would not have access to the product or service; Initial profit margins may be small(Christensen, et al., 2002; Bower & Christensen, 1995; Christensen, 1997; Christensen &Overdorf, 2000).

By critically evaluating the IFMIS e-procurement system implementation, a critical review of the findings contrasted with the propositions about a disruptive innovation as put across in this theory helps to understand whether the implementation is a disruptive one. Further, it can help

establish the extent of the disruption hence assist in the understanding of the implications for the different stakeholders as far as the implementation process is concerned.

2.5.3 Meta Theory Model

The Meta Theory Model puts forward various propositions on accounting information. The Meta theory is an integration and synthesis of technical orientations, cognitive as well as the overarching model into the research on AIS. The theory has helped in addressing the IT limitations that are imminent and addressed in previous researches such as the failure to recognize the task to which IT is being applied, the failure to recognize the adaptive nature of the artificial phenomena, the failure to account for the design science in the actual field research and the failure to direct the act of making or choosing the necessary decisions and treating all the transactions in an equal manner (Gorry & Scott-Morton, 1971). However, the theory fails to highlight and substantiate the factors likely to affect the successful initiation of an accounting system.

2.6 Conceptual Framework

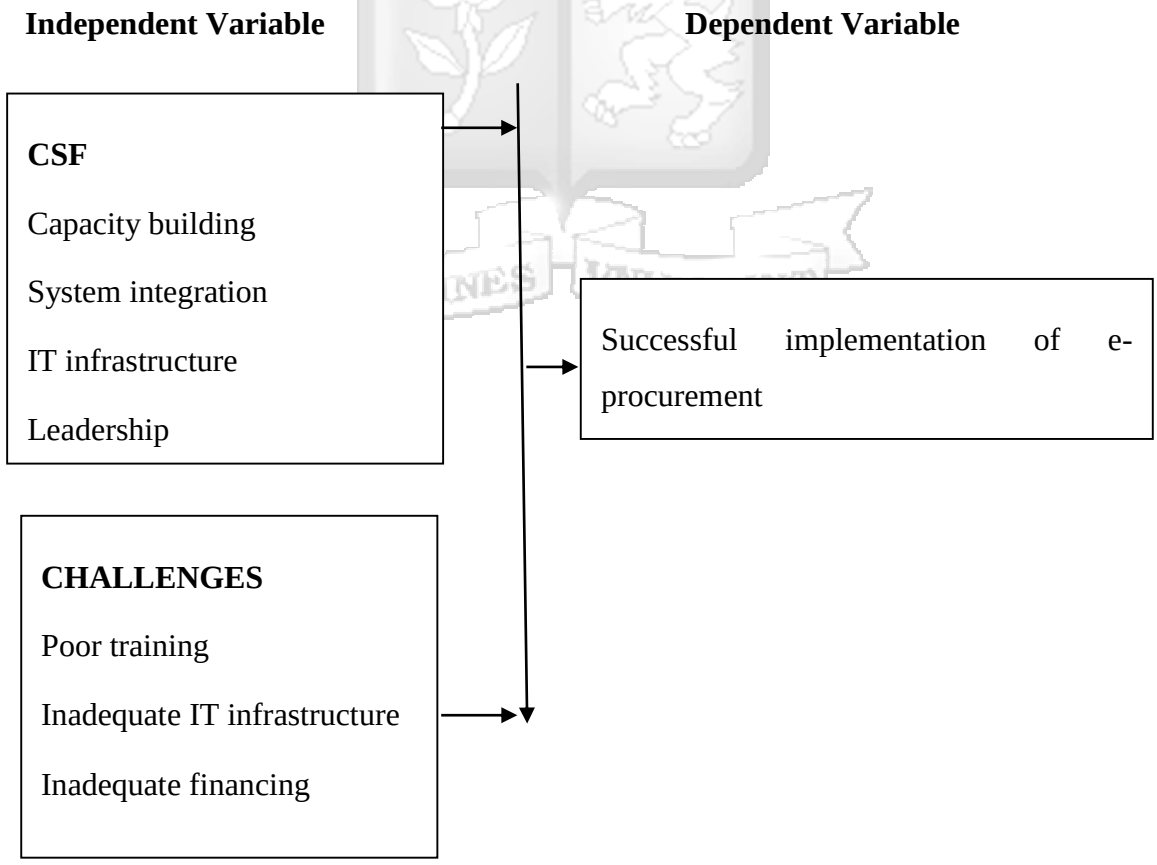

Figure 2.1 Conceptual Framework

2.6.1 Critical Success Factors for Implementation of E-Procurement

Critical Success Factors (CFSs) represent the areas or functions where events and actions must occur to ensure successful competitive performance for an organization (Butler & Fitzgerald, 1999). There is no universal framework of the critical success factors (CSFs) for measuring success/failure of e-procurement. Different studies in different contexts have established different success factors. Lack of a uniform process of identifying and measuring CSFs has caused a scope limitation for e-procurement implementation and measurement (Panda &Sahu, 2012).For this reason, there is need to identify CSF for successful implementation of e-procurement in the Kenyan context. A study to understand the business-to-business e-procurement described the success factors and challenges to e-procurement implementation in the corporate setting (Rebecca & Ravi, 2007). Through factor, analysis the study identified three e-procurement success factors namely supplier and contract management; end-user behaviour and e-procurement business processes; and information and e-procurement infrastructure. In addition, the study also identified three challenges-to-implementation factors namely lack of system integration and standardisation issues; immaturity of e-procurement-based market services and end-user resistance; and maverick buying and difficulty in integrating e-commerce with other systems (Rebecca& Ravi, 2007).

Critical success factors have been defined to effectively achieve organizational improvement through IT as: Technology: Such as websites, ERP, system security and digital signature; Process: A thorough business process reengineering is needed along with the; adoption of standards and coding acknowledged internationally; People: It is necessary to raise awareness and train the employees on themes such as sharing knowledge through IT, networking and change management (Nasi, 2005).

A study on e-procurement implementation in the Malaysian Government to understand the challenges of e-procurement implementation in the Government sector and the efforts taken to overcome the challenges (Aman & Kasimin, 2011). The study concluded that challenges of e-procurement implementation were not only related to software integration, data management and roll-out strategy, but also to legal and administration procedures, information technology (IT) infrastructure, outsourcing contract and IT skills. The study also pointed out the

significance of creating IT facilities centre in rural areas and to work closely with a third-party vendor for users' training and skills development (Aman & Kasimin, 2011).

Another study was conducted on e-procurement adoption by Government parastatals in Kenya from a suppliers' perspective (Kinoti, 2013).The study examined how the supplier attitudes, capacity, transparency and integrity affected their propensity to adopt it. The findings indicated that the model examined in the study was significant with an R^2 of 95%. The study indicated the existence of a strong positive relationship between capacity and propensity to adopt. The conclusion by the study was that attitude and supplier capacity can lead to adoption or non-adoption of e-procurement (Kinoti, 2013).

Another research was done on e-procurement readiness factors in Kenya's Public sector to determine the extent of e-procurement levels in public institutions in Kenya (Orina, 2013). From the findings, the study showed that resistance to change, lack of enthusiasm, staff skills, and to some extent procurement policies impacted the readiness of e-procurement in public institutions. Using factor analysis on the responses, the extracted factors from the rotated component factor matrix noted from the study included technology, organization's finance, leadership and integrity, legal framework and technical preparedness, international law and employee attitude, procurement policy and national procurement law, e-procurement adoption and staff information technology adequacy and online marketplace and Government support (Orina, 2013).

2.6.2 Leadership and Success/Failure of E-Procurement System

Quite a number of past studies on e-procurement indicate a positive relationship between leadership and organizational innovation, especially in the application of information technology in government institutions. In addressing this issue from a technological diffusion perspective, leadership has been found to be key in promoting the implementation of public e-procurement systems(MacManus, 2002).In some other research, leadership has been found to be a critical factor that affects e-procurement institutionalization process especially in developing nations(Wahid, 2012). No wonder it is suggested that the top management teams (e.g. steering committees) should involve the project manager, consultants working with the committee, and agency staff in development of an implementation strategy(ECOM Group, 2002).

There is little doubt that senior management leadership is critical to the success of an e-Procurement implementation (Auditor General Victoria (AGV), 2003). The top management team (steering committee) must involve the project manager, any consultants working with the committee, and agency staff to develop an implementation strategy (ECOM, 2002). Senior management commitment to change management reflects the extent to which top management is being involved in promoting organizational receptivity of IT innovation through training, formal presentation and establishment of communication channels with targeted users (Marginson, 2002). By ensuring that targeted users are aware about the characteristics of the innovation and their impact on the organization, the senior management reduce uncertainties surrounding technical changes and organizational transformation. In addition, it promotes the fit between the innovation and targeted users' values thus eventually alleviating misuse and resistance to the effective usage of the innovation (ECOM, 2002).

To enhance the overall likelihood of the strategy being effectively implemented and being successful as intended, senior managers should avoid the notion that lower-level managers have similar perceptions concerning the strategy and its implementation, its underlying rationale, and its urgency. They need not spare any effort in persuading the employees of their ideas (Rapa & Kauffman, 2005). However, in a nutshell, it is increasingly acknowledged that the recognized problems of inappropriate organizational structure and absence of top management support are the main inhibiting factors to effective strategy implementation (Aaltonen & Ikåvalko, 2002).Investigations on the experience of Yogyakarta City, found that strong leadership as well as changes in management all had an influence on the smooth implementation of e-procurement (Utama, 2009). This clearly affirms the suggestions that considerable attention and support should be provided by senior management to ensure a good understanding of the procurement reform (Stenning & Associates Pty Ltd (S&A), 2003). Furthermore, it upholds the idea that the executive management team is responsible for formulating the vision and goals, initiating the collective commitment to change in process and organizational structures, and putting in place the policies and strategies necessary for the effective implementation of an e-procurement innovation (World Bank (WB), 2003).

2.6.3 Policies and Regulations and Success/Failure of-Procurement System

This is another key variable affecting e-procurement process. It has been noted that here is a fundamental and accepted difference between public procurement and private procurement at

the public procurement policy level (Murray, 2007). Due to the different characteristics of the public-sector compared to those of the private sector, public procurement is often a process of political decisions on how the government obtains public goods and services at economical costs.

A look into the policy framework for different regions in their e-procurement gives a mixture of findings. For instance, recent studies indicate that unlike Europe, Asia is yet to adopt a specific-procurement regional policy or legal framework. However, aspects of legal validity of e-procurement can be found in the "e-ASEAN Reference Framework for Electronic Commerce Legal Infrastructure" (UN ESCAP, 2006).Even so, this instrument is not a compulsory. On the contrary, it acts only as a guideline. For individual country cases, many Asian nations, such as China, Malaysia, the Philippines, and the Republic of Korea, undertook a massive reform of their public procurement legal environment as part of their national e-government action plan (UN ESCAP, 2006; Vaidya et al., 2009). In public procurement, there is need for public procurement managers to insulate and protect themselves against the possible conflicting demands of various stakeholders (Ancarani, 2009).In terms of application of rules, a wide range of variations have been found, and these variations are heavily driven by a hierarchical downward flow of verbal and non-verbal instructions based on varying degrees of interpretation of respective rules and standard procedures (Khan, 2013). To sum it up, the public sector's regulatory restrictions and organizational dimensions are some of the biggest deterrents to e-commerce (MacManus, 2002).

2.6.4 Capacity Building and Success/Failure of E-Procurement System

Capacity building is a critical factor that affects the success of IFMIS implementation. This is more so in developing countries with limited capacity of IT. The situation in these countries is further complicated by poor terms of employment and public sector's salary structure which usually are unable to attract and retain duly qualified staff (Aberdeen Group, 2001). It is during the early stage of the need assessment process that capacity building and training should be scoped. In the process, the various user groups should be identified, the level of knowledge assessed, recruiting needs identified and the scope of the training curricula defined targeting the various key audiences (Balogun, 2003). The training should start from the very beginning of the reform, starting by those who are likely to be the most immediately affected by the IFMIS reform. A wider and permanent training programme should also be put in place.

Considerable human resources requirements and capacity building needs across the entire government are involved in IFMIS implementation. Before such projects can be truly viable in developing nations, it is vital to adequately address the low level of computer literacy first (Davenport & Brooks, 2004). The scarcity of staff with the requisite IT expertise cannot be just remedied by training and hiring. The current private sector employment conditions outdo those in the public sector incentivising candidates with the requisite IT expertise. This creates a risk that the highly trained staff leaves for much better employment opportunities (Gallagher, 2007).

Project management is far much broader than management of the technical aspects of the implementation. There should be established an adequate project implementation team, ideally consisting of a project manager, a public finance economist, a qualified accountant, a change management/training expert, IT-system experts and logistic experts. It is further recommended that a steering committee should be set up to oversee the process at the highest level, preferably chaired by a high level figure such as the Minister of Finance, which should meet regularly and produce minutes on issues and milestones(Diamond & Pokar, 2005). It is advisable that training programs address various audiences, from senior members of the bureaucracy to midland entry-level civil servants (Bhatt, 2005). The training programs alongside change management must begin as the earliest possible in the project, using nationals, both committed to the project and to public service, to deliver the programs to the best. This builds local capacity and enhances the confidence among users, who through the process get the re-assurance that amid the change, there will be some constants. Capacity building has been pointed out as a never-ending process given the nature of institutions and organizations (Davenport & Brooks, 2004). It rather needs to be continuous and permanent. This therefore calls for the establishment of a sound permanent authority within the government, empowered to carry forward the functions.

Observation has also been made that, as documents on the functional requirements – which will often serve as a blueprint for later phases of the system – are difficult to amend at a later stage, it is critical to spend adequate time on the design phase of the project (Parr & Shanks 2000). Given that IFMIS core systems should fit the local context and environment, a key issue for consideration is whether to use Off-The-Shelf (OTS) systems and customize them to fit the local conditions or whether to invest in an own “custom-build” system, which comes with major costs and resource implications. IFMIS implementation also involves major hardware requirements. In Malawi for example, IFMIS requires 50 servers, one central server and a local

IFMIS sever in each line ministry (Bhatt, 2005). Power shortage and interruptions imply that in some countries, generators and power supply units need to be installed as well.

2.6.5 Reporting Accountability and Success/Failure of E-Procurement System

The successful implementation of IFMIS requires many government structures to start working with common tools. In order to ensure coherence of the information, all administrative units at national, regional and local level should adopt a common language in the form of unified budget classifications and charts of account (Dorotinsky & Junghun, 2003). Even so, this can be a very long and burdensome process, which for instance took over five years in Vietnam Pittsburgh. The centralized treasury operations also present other challenges. IFMIS reform usually comes with the consolidation of all government financial resources in one treasury account or a set of linked accounts. Introducing IFMIS is more than merely "simple" automation of public finance tasks and processes. It implies reforms for both efficiency and change of current procedures. They therefore need to be viewed as an organisational reform deeply affecting work processes and institutional arrangements that govern the management of public finance. It is for this reason that the failure to undertake parallel reforms required by IFMIS is one of the reasons that usually obstruct successful implementation (Hyvönen, 2003).

It is necessary that IFMIS be underpinned by a coherent legal framework that governs the overall public finance system (Woolcock, 2008). In general, IFMIS imply fundamental changes in operating procedures and thus needs to be preceded by an in-depth functional analysis of processes, procedures, user profiles and requirement that the system will support. Lack of clear specification of the basic system functionality from the onset of the intervention has caused many IFMIS projects to fail. IFMIS should be carefully designed to address the agency's needs and functional requirements, including the accounting and financial management tasks the system should perform. In some instances, interfaces with current IT systems have to be created to fit the country's specific conditions (Hyvönen, 2003).

2.6.6 IT infrastructure &System Integration and Success/Failure of E-Procurement

In past research, emphasis has been placed on some of the information systems related issues that were obscuring effective implementation and causing the slow uptake of e-procurement systems. More emphasis has particularly been on software integration, including discussion of

XML related opportunities (IDC, 2003). Other studies have cited user adoption as an essential factor in successful e-procurement deployment(Aberdeen Group, 2011).Using a single case study, the critical nature of critical both web content management and content rationalization for e-procurement operation has been highlighted (Lin & Hsieh, 2000). Such studies have observed that constantly changing prices, specifications and account details across the on-line supply base caused major hurdles in the maintenance of supplier catalogues. Furthermore, the description of an item, item coding, was found to be a critical data management issue for e-procurement. They further claim that material code proliferation within ERP systems has posed the same challenges for the management of the IS infrastructure (Lin & Hsieh, 2000).

The effectiveness in integration of e-procurement system with other IS, especially production planning and control and finance systems, is a fundamental determinant of the efficiency and effectiveness of an e-procurement system (Subramaniam & Shaw, 2002). Systems integration has been identified as a critical success factor for e-procurement implementation both with the customer's information infrastructure and in its links to suppliers (Rajkumar, 2001).KPMG (2001) mentioned that it is vital to establish the extent of integration needed between the e-procurement solution and existing information systems. It is also crucial to link the e-procurement system to the financial management system so as to facilitate the suppliers' online payment process (WB, 2003).

Given that an e-procurement system undergoes vertical and horizontal integration across systems and enterprises, it is important that the system be built around well-accepted technical content and process standards. In addition, since the system has to meet legal requirement of audit-ability, it should also comply with legal/administrative frameworks prevalent in the country (Cagliano et al., 2005). The system must be developed around open source technologies and standards. Hardware optimizations such as active-active failover, load balancers, proper sizing of servers and finally disaster recovery of the setup should be planned and implemented. There should be intuitive interface design, easy to use and with proper upward-downward navigation. There needs to be efforts to minimize the number of mouse clicks required for getting the required information. This is to optimize the interface of the system for faster access over slow Internet speeds (Dooley & Purchase, 2006).

2.6.7 Culture and Success/Failure of E-Procurement System

Differences in culture may be explained by differences in perceptions of the adoption and diffusion of information technologies (Karahana, 2006). Some people influence others within their societies/communities when considering the use of new technologies which in turn shapes their attitude towards the usage of the new systems (Du., Whinston, Lu and Liu, 2010; Al-Somali, Gholami and Clegg, 2009). This implies that peoples' decision to adopt a particular technology includes the external impressions, such as cultural values and norms that people are subjected to. Cultural values and norms may influence consumers' perception of whether other people believe they should engage in certain behaviour. Individual persons will usually consider people close to them such as family, friends and relatives to him/her, when deciding on using new technology (Pai&Tu, 2011).

A review of existing literature indicates that the influence by culture is critical in understanding technological innovation diffusion (Venkatesh, Morris, Davis & Davis, 2003). Reference groups who influence word-of-mouth include friends, superiors, and IT experts, which in turn play a critical role in the adoption of communication technologies (Di Pietro et al., 2012). Culture could therefore accelerate or limit the adoption of electronic commerce (Kenneth, Rebecca & Eunice, 2012).It has been observed that the cultural environment is of utmost importance for countries to be innovative (Ferreira, 2010). This implies that culture is considered to be the general expression of humanity, and the expression of its creativity. The differences of adoption of e-procurement system in different contexts have been observed to be influenced by national culture. Past studies have indicated that firms from countries with low uncertainty avoidance for instance Germany and the UK are the early adopters of e-procurement (Batenburg, 2007). On the other hand, countries which are less reluctant to change for instance Spain and France have lower adoption rates. This indicates that the extent of adoption of e-procurement varies from one country to the other and the factors influencing the adoption levels will also vary.

2.7 Challenges Hindering Successful Implementation of E-Procurement

Despite its benefits, e-procurement is also faced with some problems that hinder its adoption in various departments. There have been identified notable challenges such as company culture and upper management support (Eadie et al, 2007).Resistance to change, lack of a widely accepted solution and lack of leadership, which are cultural, are some of the biggest barriers to

the introduction of e-procurement within the public sector (Davila et al, 2003). To counter this problem, a cultural change needs to take place prior to adoption of an e-procurement system (Eadie et al, 2007). People need to be appointed and backed with full senior management support in order to effect this change. Adequate sensitization on the system will greatly reduce the resistance to the change. It is the cultural change brought about by senior management support which can enable e-procurement is to be successfully implemented (Eadie et al, 2007). Another identified challenge is lack of IT infrastructure (Wong and Sloan (2004) cited in Eadieet al, 2007). On the same note, technological integration, data quality, system-to-system integration, and ICT/technical issues have also been identified as major challenges for many organizations when implementing e-procurement (Williams& Hardy, 2006).

A survey at Florida Atlantic University pointed to a common set of obstacles for e-procurement initiatives (Prier & McCue, 2007). The survey identified the following set of obstacles: Too expensive to implement; Lack of financial system interoperability; Limited resources; Technology barriers; Governing body resistance; Interoperability with other systems; Supplier resistance; Finance department resistance; Concern about local business competitiveness; Capacity or skills shortage across the entity(Prier & McCue, 2007).

Another challenge is the cost implications of the system. Some organizations perceive the system as being too expensive to implement. This relates to budgeting and costs, change management, as well as need of training and resources (Williams& Hardy, 2006). Therefore in their opinion, they would rather stick to their system. Furthermore, engaging suppliers in the process - especially smaller organizations - is also proving to be difficult given the level of investment expected in terms of providing catalogue information to buyers, and marketplaces using different technologies, platforms and business languages (Williams& Hardy, 2006). Sometimes, e-Procurement results in large investments of time and money, without absolute certainty that its' full potential will be achieved every time. Besides, there is also lack of technical expertise (Heywood, 2002). Most organizations lack the expertise to operate the system if initiated. In their view, embracing e-procurement technology implies employing the necessary manpower to operate it (Heywood, 2002). Some part of the older generation has not kept up to the advances in IT related issues (World Bank, 2003). This makes them rely heavily on traditional forms and means of procurement. In fact, this forms the majority of those against change, especially when the change requires anything more that the training they already have. Therefore, as e-Procurement includes new technologies and changes in traditional procurement

approaches, the need to train staff in procurement practices and the use of e-Procurement tools are critical to the success of an e-Procurement initiative (World Bank, 2003).

There is also lack of a business relationship with suppliers capable of e-procurement (Eadie, 2007). Lack of business relationships with suppliers showing the need for an e-procurement makes supply chain another barrier for the implementation of e-procurement (Hawking et al, 2004). Security of transactions is another challenge (Jennings, 2001). Working on the internet has become risky due to hacking of information. This has made organizations fear using it. Banks have lost money. Data which is transmitted on the World WideWeb can be garbled, can reassemble wrongly at the other end, or can display only partially because of incompatible software (Jennings, 2001). There are also interoperability concerns. Providing procurement information over the internet produces interoperability concerns (Rankin, Chen & Christian, 2006). This is due to the fact that software companies have sought to make their product unique. In doing so, they have endeavoured to stop migration of data between systems. Compatibility, interfacing with other systems and stability, are technical issues which have become barriers to e-procurement implementation (Rankin,Chen & Christian, 2006).

The impact of technological errors, system constraints and technological failures, which are seldom discussed or acknowledged, are also a major concern for e-procurement (Coulthard & Castleman, 2001). While tools such as e-signature, e-notice or e-bids do significantly reduce processing time – these constructs might raise security issues, cause costly errors and authenticating bidders' problematic (Sun et al., 2011). In this sense, much of the responsibility of ethical behaviour is placed on the vendors which, given their motives, may place additional pressure on procurement to validate the integrity of the process; again driving up implementation costs. The public agency is limited in its ability to insure that the internal structures of suppliers fits within the broader context of the rigorous ethical expectations of the public sector (Sun et al., 2011)

2.8 Empirical Review

A study to understand the business-to-business e-procurement described the success factors and challenges to e-procurement implementation in the corporate setting (Rebecca & Ravi, 2007). Through factor analysis the study identified three e-procurement success factors namely supplier and contract management; end-user behaviour and e-procurement business processes; and information and e-procurement infrastructure. In addition, the study also identified three challenges-to-implementation factors namely lack of system integration and standardisation

issues; immaturity of e-procurement-based market services and end-user resistance; and maverick buying and difficulty in integrating e-commerce with other systems (Rebecca& Ravi, 2007).

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2.9 Hypotheses

Basing on the reviewed literature, the following null hypotheses were developed for the study:

General Hypothesis:

H0: There is no significant relationship between the four critical success factors and successful implementation of e-procurement in the Kenyan government.

Other Hypotheses

$H0_1$: There is no significant relationship between capacity building and successful implementation of e-procurement system

$H0_2$: There is no significant relationship between system integration and successful implementation of e-procurement system

$H0_3$: There is no significant relationship between IT infrastructure and successful implementation of e-procurement system

$H0_4$: There is no significant relationship between leadership and successful implementation of e-procurement system

2.9 Summary of Literature Review

There is no universal framework of the critical success factors (CSFs) for measuring success/failure of e-procurement. Different studies in different contexts have established different success factors. Lack of a uniform process of identifying and measuring CSFs has caused a scope limitation for e-procurement implementation and measurement (Panda &Sahu, 2012). For this reason, there is need to identify CSF for successful implementation of e-

procurement in the Kenyan context. A study has been done to describe the success factors and challenges to e-procurement implementation in the corporate setting (Rebecca & Ravi, 2007). Through factor analysis the study identified three e-procurement success factors namely supplier and contract management; end-user behaviour and e-procurement business processes; and information and e-procurement infrastructure. In addition, it identified three challenges-to-implementation factors namely lack of system integration and standardisation issues; immaturity of e-procurement-based market services and end-user resistance; and maverick buying and difficulty in integrating e-commerce with other systems. However, this study did not fully substantiate why some of the factors could just be categorized as success while others as challenges.

Another study defined the critical success factors as: Technology; Process and People (Nasi, 2005). Although this study attempted to explain these factors, it did not test the factors on a particular e-procurement system. Several critical success factors have also been identified including: end-users uptake and training; supplier adoption; business case and project management among others (Vaidya, Sajeev & Callendar, 2006).

However, like the previously mentioned study, this study, despite putting forward many factors, could not measure implementation of a particular system relative to these factors. It is against this backdrop that this study critically evaluated the IFMIS e-procurement system in Kenya where the critical success factors of the system were investigated, and the challenges hindering the implementation established.

There is no universal framework of the critical success factors (CSFs) for measuring success/failure of e-procurement. Different studies in different contexts have established different success factors. Lack of a uniform process of identifying and measuring CSFs has caused a scope limitation for e-procurement implementation and measurement (Panda & Sahu, 2012).For this reason, there is need to identify CSF for successful implementation of e-procurement in the Kenyan context.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to carry out the study. It describes the research design, the target population as well as the sampling technique, the data collection methods and instrument, data analysis methods and the ethical considerations that were adhered to during the study and the ethical considerations.

3.2 Research Design

A research methodology refers to the philosophical basis on which the research is founded. Choice of methodology depends on the way the researcher views the world in which he/she carries out the research. A qualitative research is subjective, uses non- mathematical procedures in explaining and interpreting the outcome of the research, and it is used to study way organizations, groups and individuals behave and interact (Robson, 2002). A quantitative research, sometimes referred to as positivist is objective, scientific in approach and collects and uses numerical data (Robson, 2002). A triangulation of the two research methodologies was applied in this study.

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kothari, 2004). The research design provides answers to issues such as techniques to be used to gather data, the kind of sampling strategies and tools to be used and how to deal with time and cost constraints (Cooper & Schindler, 2003).

Since the first objective seeks to identify critical factors for successful implementation of e-procurement by the Kenya government, the researcher used a descriptive research design. A descriptive research is a research design that attempts to show the status quo of study items (Cooper & Schindler, 2006). The purpose of descriptive research is to depict an accurate representation of individuals, events, or situations (Robson, 2002). In other words, descriptive research is designed to provide a picture of a situation as it naturally happens (Burns & Grove, 2003). The main idea behind using descriptive research was to better define the opinions and attitudes held by a group of people on the success of implementation of e-procurement by the Kenya government.

The researcher also examined the influence that the critical success factors have on the success of e-procurement implementation by the Kenya government. This particular objective sought to establish relationship between the factors identified as critical, and the success of implementation of e-procurement by the Kenya government. Therefore the research was also explanatory. Explanatory research is designed to test whether one event causes another (Hair, Babin, Money & Samouel, 2003). The emphasis is on studying a situation or a problem in order to explain the relationship between variables (Saunders, Lewis & Thronhill, 2003). When descriptive research is used as a precursor to explaining the relationship between variables, such a research is termed as descripto-explanatory studies (Sanders, Lewis and Thornhil, 2009). Quantitative analytical techniques were then used to draw inferences from the data regarding existing relationships.

3.3 Population and Sampling

A population refers to the total collection of elements to which the researcher wishes to make inferences (Cooper & Schindler, 2006). The population for this study comprised of the different stakeholders of IFMIS to get their views on IFMIS implementation in regard to the parameters studied. The stakeholders included government, parastatals and government suppliers. The procurement officers in these institutions were targeted. Currently, there are 20 ministries (see Appendix 5) and 119 government parastatals (see Appendix 6).

For sampling purposes, the procurement officer in each of the 20 ministries was sampled. Since it would be challenging to get the full list of government suppliers, each of the ministries was asked provide their list of suppliers for the twelve months between June 2014 and June 2015 from which 2 suppliers were randomly sampled. Hence, a total of 40 suppliers were sampled. The sample for parastatals was determined using Slovin's Formula (Ariola, 2006):

$n = N / (1 + Ne^2)$

Where n, N and e are the number of samples, the total population and error tolerance respectively. In using Slovin's formula, the error of tolerance is first determined which can range between 95% and 99% confidence level (giving a margin error of 0.05 and 0.01 respectively) (Ariola, 2006). In the current study a confidence level of 95.0% was utilized thus the margin of error was 0.05.Thus, using Slovin's Formula, the sample size for parastatals was:

$n = 119/ (1+119(0.05)^2)$ = approximately 92 parastatals.

The 92 parastatals were randomly selected from which a procurement officer in each of the selected parastatals was sampled. Therefore, the total sample size for the study was 152 respondents as illustrated in Table 3.1.

Table 3.1: Sample Size

Target	**No. of procurements officers sampled**	**Formula**
Ministries	20	1 x 20
Suppliers	40	2suppliers for each ministry x 20
Parastatals	92	$119/ (1+119(0.05)^2)$
Total Sample size	**152**	

A sample size of between 30 and 500 has been recommended as appropriate for most researches (Rosco, 1975). Therefore, the sample size of 152 for this study was considered adequate..

3.4 Data Collection Methods

Data collection involves consulting primary and secondary data sources in order to elicit information, facts, evidence, proofs or truths regarding the research problems (Babbie, 2002). Data collection also involves gathering both numerics as well as text information so that the final database represents both quantitative and qualitative information. Data collection involves operationalizing the research design into instruments of data collection with a view to collecting data in order to meet the research objectives. Data collection methods include use of interviews, observation, and questionnaires (Chandran 2004).

The study used primary data. Primary data was obtained by use of a questionnaire that was administered to the procurement officers in the government, parastatals and government suppliers. A questionnaire communicates to the respondent what is intended and elicits desired response in order to achieve the research objectives (Chandran, 2004).The questionnaire was designed by the researcher and was administered through the drop and pick method. To address objective one that sought to identify the critical success factors for successful implementation of e-procurement, the questionnaire used a close ended and a 5 point Likert scale questions to address objective three that aimed at identifying challenges that impede successful implementation of e-procurement, the questionnaire had open and close ended 5 point Likert

scale. The close-ended questions provided more structured responses to facilitate tangible recommendations. The Likert questions were used to test the rating of various attributes and this helped in reducing the number of related responses in order to obtain more varied responses. Open-ended questionnaires were aimed at obtaining in-depth information from the respondents through their unlimited options which is the case for the close ended questions.

3.5 Instrument Validity and Reliability

Validity is the ability of the research instrument addresses the research questions and objectives that the researcher is trying to answer and achieve. There are three genres of validity, namely; face, content and construct validities (Cavana et al., 2000). The validity of the research instrument was ensured by reviewing the data collection instrument with the supervisor making the necessary amendments to ensure that it adequately addresses the research objectives.

Reliability refers to the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same objects. In order to check reliability of the instrument, the study adopted a pilot study where the questionnaire was administered to 5 procurement officers in the government parastatals who were not be involved in the final study. Pearson's Moment correlation coefficient was then used. The coefficient can take any value from zero (no internal consistency) to one (complete internal consistency). The coefficient for the instrument in this study was 0.86. Scores in the ranges $0.5 \leq \alpha \leq 0.6$; $0.6 \leq \alpha \leq 0.7$; $0.7 \leq \alpha \leq 0.8$ and $0.8 \leq \alpha \leq 0.9$ are considered to have an internal consistency that is poor, questionable, acceptable or good, respectively. Values above 0.9 represent excellent consistency, while values less than 0.5 are considered to be unacceptable (Nunnally, 1978). Therefore, the instrument correlation index of 0.86 was considered reliable.

3.6 Data Analysis

Data analysis is a process of inspecting, cleaning, transforming and modelling data to identify useful information, suggest conclusions and support decision making (Creswell, 2009). In this study, both quantitative and qualitative data were involved. For quantitative data, analysis was done by use of descriptive statistics of percentages, means, standard deviations and frequencies. Descriptive statistical tools are preferred because they are able to effectively define variables by both quantitative and qualitative characteristics. The tools nonetheless fail to elaborate the magnitude of relations and researcher may not get fine details of variable relations. This was

done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives. Additionally, inferential statistics were used whereby multiple regressions were conducted on the relationship between identified critical success factors and the implementation of e-procurement. Correlation analysis and analysis of variance (ANOVA) was also done on the same. The findings were presented by use of bar charts and in tables. Inferential statistics through regression and correlation constitutes powerful tools that define, assess and relate different phenomena. The tools are also predictive in nature and thus go beyond just description of the variables.

To fulfil the first objective, the questionnaire included a checklist of critical success factors identified in prior studies that characterized identification of critical success factors. A 5 point Likert scale was used to capture and rate the critical success factors. The scale was chosen for its suitability in measuring attitudes and feelings in organizational research (Sekaran & Bougie, 2009). A rating of 5 shows the success factor was critical to a very great extent, while a rating of 1 was used to show the success factor was critical to a very little extent. The mean ratings and standard deviation from the research respondents were used to rate the critical success factors.

To fulfil the second objective, the researcher used three stages. The first stage involved use of multiple linear regression analysis to establish the relationship between the identified critical success factors and successful implementation of e-procurement by the Kenya government. A multiple regression was chosen as an effective means of objectively assessing the degree and character of the relationship between the dependent and independent variables (Sekaran & Bougie, 2009).

Based on the conceptual framework, the relationship between the variables can be expressed in form of a function as follows:

$$\mathbf{Y = f\ (X_1\ ,\ X_2\ ,\ X_3\ ,\ X_4\ )}$$

Where:

Y (Dependent variable) = extent of implementation of e-procurement;

X_1= Capacity building;

X_2= System Integration;

X_3= IT infrastructure

X_4= Leadership

The resultant equation, similar to Yusoff, Abas, Islam and Yusuf's (2011) research is as follows:

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

The second stage entailed test of hypotheses. For each of the identified critical success factor, a null hypothesis was developed to test their significance in influencing successful implementation of e-procurement.

The third stage of the data analysis involved using narrative analysis to present the results from the semi-structured interviews. The qualitative data was analyzed through content analysis. This is a systematic detailed qualitative description of the objectives of the study. The method makes it possible to analyze and logically group the large quantity of data and compile the rest of the study. In this regard, the qualitative data was organized into themes corresponding to the study objectives.

Table 3.2: Operationalization of Variables

Variables	**Sub-Variables**	**Measurement**
Implementation	• e-ordering • e-sourcing • e-tendering • e-informing	• 5 point Likert scale The mean of the responses was used to indicate level of implementation.
Success Factors	• Capacity building • System integration • IT Infrastructure • Leadership • Human Resources • Policies/Regulations	• 5 point Likert scale The Mean of the responses was used to rate the significance of critical success factors.

	• Reporting accountability • Culture	
Challenges	• Resistance to change • Lack of management support • Inadequate IT infrastructure • Inadequate financing • Poor training • Hacking of the system	• 5 point Likert scale The mean of the responses was used to indicate and rate the challenges to e-procurement.

3.7 Ethical Considerations

The researcher exercised utmost caution while administering the data collection instruments to the respondents to ensure their rights and privacy were upheld. Prior to actual administration of the instrument, an introduction on the aim and purpose of the study was made to the respondents in the language they best understood. The study sought the consent of the respondents before they were provided with all requirements of the study. To ensure confidentiality, the respondent's names did not appear on the questionnaire. Further, no respondent was coerced into the exercise. The findings of the study were presented without any manipulation or influence by the researcher in any way.

3.8 Summary of Research Methodology

This chapter presented the research methodology used to carry out the study. Descriptive survey design was used. The target population was procurement officers' in government, select parastatals and government suppliers. Data was collected using a questionnaire that had likert questions, close-ended as well as open-ended questions. Descriptive statistics of percentages, means, standard deviations and frequencies were used to analyse quantitative data. Content analysis was used to analyse the qualitative data. In addition, the study conducted an inferential

statistics including multiple regressions and test of hypotheses to establish the relationship between selected critical success factors and implementation of IFMIS e-procurement.

CHAPTER 4: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents data analysis and results of the study. Section 4.1.1 presents the response rate and section 4.1.2 shows the demographic information of the participants. The next sections are structured basing on each specific objective. The objectives includedanalysing the critical success factors for successful implementation of e-procurement system, examining the relationship between the critical success factors and the successful implementation of e-procurement by the Kenya government, and finally, establishing the challenges hindering the successful implementation of e-procurement system by the Kenya government. Sections 4.2 to section 4.8 will give a summary of the research findings.

4.2 Response Rate

Questionnaires were distributed to targeted procurement officers in government, government suppliers and parastatals and responses were distributed as indicated in table 4.1

Table 4.1: Distribution by Response Rate

Categories	**Total Targeted**	**Total Collected**	**Response Rate**
Ministries	20	13	65.0
Suppliers	40	33	82.5
Parastatals	92	67	72.8
Total	**152**	**113**	**74.3**

A total of 20, 40 and 92 procurement officers were targeted from the ministries, suppliers and parastatals respectively translating into a total target of 152. However, the duly filled and collected questionnaires were 13 (65%), 33 (82.5%) and 67 (72.8%) from the ministries, suppliers and parastatals respectively. Comparatively, this indicates that the suppliers had the highest response rate (82.5%). Overall, the total responses were 113 which is a response rate of 74.3%.

4.3 Demographic Information

Table 4.2: Highest Level of Education

Highest level of education	Frequency	Percent (%)
Post Graduate	75	66.4
Graduate	38	33.6
Diploma	0	-
Certificate	0	-
Total	113	100

Most (66.4%) of the procurement officers who participated had post graduate educational qualifications. None had qualification below graduate level as the rest 33.6% were all graduates. This indicates that the procurement offices are adequately qualified for their positions, and competent to respond to the researcher's questionnaire.

The researcher also sought to know the length of time served by the procurement officers in respective organizations. Figure 4.1 presents the details.

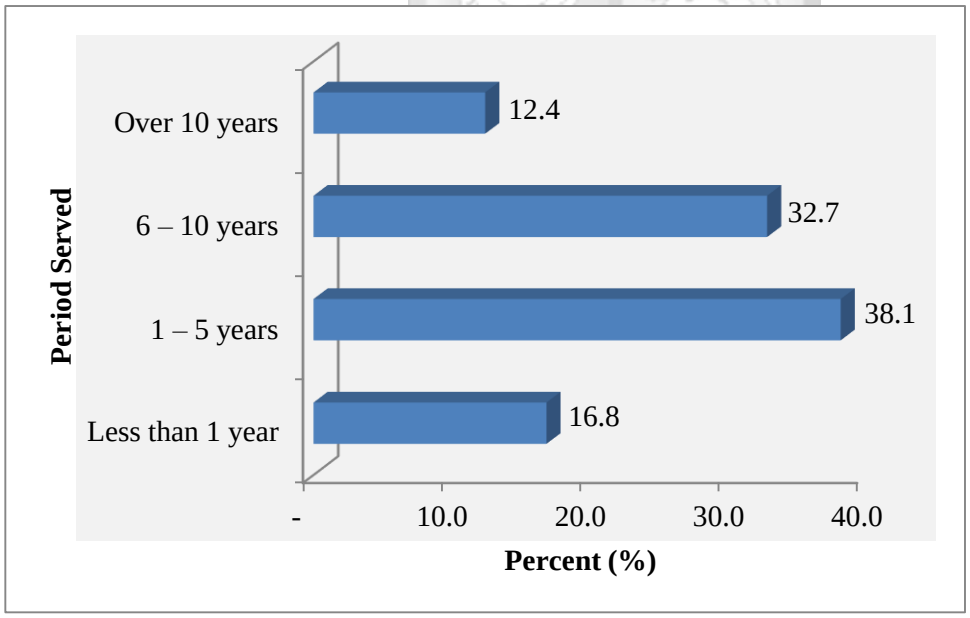

Figure 4.1: Duration of Time Served in the Organization

It was revealed that 38.1% of the procurement officers had served for 1-5 years in their organizations while 32.7% had served for 6-10 years. There were some (16.8%) who had been in the organization for less than 1 year and few (12.4%) had been there for over 10 years. This implies that majority of them (70.8%) had an experience of more 1-10 years in their current organizations. 82% of respondents were in employment when IFMIS system was first rolled

out. They therefor understand the benefits brought about by the system, as well as the challenges experienced in its implementation.

4.4 Implementation of IFMIS E-Procurement

The researcher examined the extent to which IFMIS e-procurement has been implemented by the Kenya government.

Findings were as presented in figure 4.2.

Table 4.3: Extent to which e-procurement has been successfully implemented

	Frequency	Percent
Moderate extent	77	68.1
Little extent	36	31.9
Total	**113**	**100.0**

The findings revealed that implementation of IFMIS e-procurement system by the Kenya government has been moderately successful as shown by 68% of the respondents with 32% of the respondents indicating that the implementation has been successful to a little extent.

4.5 Critical Success Factors for Successful Implementation of E-Procurement

To analyse the critical success factors for successful implementation of e-procurement, eight factors were evaluated by rating their influence on a 5-point likert. In this case, 1 was very little extent while 5 was very great extent. Mean and standard deviation were used to rank them according to their influence on success. The higher the mean, the more the influence a success factor had on the successful implementation of e-procurement in the Kenyan government. The opposite was true

Table 4.4: Critical Success Factors for Successful Implementation of E-Procurement

Factor	Percent (%)					Mean	SDV
	Very Great Extent(5)	Great Extent(4)	Moderate Extent(3)	Little Extent(2)	Very Little Extent(1)		
Capacity building	-	62.8	37.2	-	-	3.63	0.49
System integration	0.9	50.4	43.4	5.3	-	3.47	0.61
IT Infrastructure	-	49.6	50.4	-	-	3.50	0.50
Leadership	-	46.9	53.1	-	-	3.47	0.50
Human Resources	-	26.5	62.8	10.6	-	3.16	0.59
Policies/Regulations	-	20.4	64.4	15.0	-	3.05	0.60
Reporting accountability	0.9	23.9	48.7	25.7	0.9	2.98	0.76
Culture	-	8.8	76.1	15.0	-	2.94	0.49

The success factors with the highest mean with low standard deviation were considered critical. Findings indicated that capacity building affects successful implementation of e-procurement to the greatest extent as it recorded the highest mean of 3.63 with the lowest standard deviation of 0.49.Majority of procurement officers (62.8%) asserted that capacity influences successful implementation of e-procurement to a great extent. Other factors that were noted to influence successful implementation to a great extent include system integration (3.47), IT infrastructure (3.50) and leadership (3.47).The rest of the factors including human resources, policies/regulations, reporting accountability and culture were found to influence implementation of e-procurement to a moderate extent as indicated by their means of 3.16, 3.05, 2.98 and 2.94 respectively. . This indicates that there are four critical success factors (as identified by the highest mean rating) that affect implementation of e-procurement in Kenya: capacity building, system integration, IT infrastructure and leadership

4.6 Inferential Statistics

To further understand the influence of the four factors identified as most critical for successful implementation of e-procurement, inferential statistics were used. In this regard, regression analysis was used to establish the significance of each of the factors for successful implementation of e-procurement. The linear regression model estimated was in the form of:

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

Whereby Y (Dependent variable) = Implementation of e-procurement; X_1= Capacity building; X_2= System Integration; X_3= IT infrastructure and X_4= Leadership while ε is the error term.$\beta_0$is the constant while β_1, β_2, β_3 and $\beta_4$are the coefficient of the independent variablesX_1, X_2, X_3 and X_4respectively.

4.6.1 Multivariate regressing analysis to establish the relationship between the critical success factors and success in implementation of e-procurement

The extent of implementation of e-procurement was regressed against the critical success factors. The findings are outlined in table 4.5.

Table 4.5: Coefficients of Critical Success Factor for Implementation of e-procurement

Coefficients(a)						Collinearity statistics	
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
	B	Std. Error	Beta				
(Constant)	-0.904	0.177		-5.120	.000		
Capacity building	0.642	0.064	0.666	10.102	.000	.371	2.694
System integration	0.360	0.380	0.470	0.940	.349	.641	1.559
IT infrastructure	0.122	0.050	0.131	2.415	.017	.550	1.818
Leadership	0.203	0.047	0.218	4.353	.000	.645	1.550
Dependent Variable: Implementation of e-procurement							

Successful implementation of e-procurement was hypothesized as influenced by capacity building, system integration, IT infrastructure as well as Leadership. To achieve standardized coefficients, all the variables were analysed using regression tools. The study found that an increase of a unit of capacity building leads to an increase in successful implementation of e-procurement by 0.666 while an increase of a unit of system integration increases successful implementation of e-procurement by 0.470. An increase in IT infrastructure by one unit was found to positively affect successful implementation of e-procurement by increasing it with 0.131 while an increase by one unit of Leadership results to an increase in successful implementation of e-procurement by 0.218. Table 4.5 indicates the extent to which the independent variables considered for this study explained changes in successful implementation of e-procurement. The constant was -0.904 which means that if capacity building, system integration, IT infrastructure and Leadership are held constant (at zero); successful implementation of e-procurement will be negatively affected (decreased) by 0.904 units.

From the regression output, capacity building with a β coefficient of 0.62 has the highest influence on the successful implementation of e-procurement. Similarly, the responses from the survey indicate managers view capacity building with a mean of 3.63 and standard deviation of .049 as an important factor for successful implementation of e-procurement. Similarly, IT infrastructure and leadership with β coefficients ofF 0.122 and 0.203 respectively from the regression output were found to be influential in the successful implementation of e-procurement. The descriptive statistics which resulted with means of, 3.50, and 3.47 confirmed that IT infrastructure and leadership influenced the successful implementation of e-procurement. However, systems integration, which had a mean of 3.47 appeared in the regression model to be insignificant in the successful implementation of e-procurement by the Kenya government, with a β of 0.360. This could be attributable to the high standard deviation of 0.61 in the descriptive statistics.

4.6.2 Test of Hypotheses

To test hypotheses, the researcher considered variables at both bivariate and multivariate levels.

4.6.2.1 Test of hypothesis at bivariate level

At this level, t-test (Student's t-distribution) was considered as presented in Table 4.4.

The following were the hypotheses:

$H0_1$: There is no significant relationship between capacity building and successful implementation of e-procurement system

$H0_2$: There is no significant relationship between system integration and successful implementation of e-procurement system

$H0_3$: There is no significant relationship between IT infrastructure and successful implementation of e-procurement system

$H0_4$: There is no significant relationship between leadership and successful implementation of e-procurement system

The critical value for t at 112 degrees of freedom (d.f = 113 – 1) at 95% confidence level, 2-tail test was 1.960. Given that calculated t-score (see Table 4.5) was 10.102, 0.940,2.415and 4.352for Capacity building, System integration, IT infrastructure and Leadership respectively the criteria is not to accept the null hypothesis for all explanatory variables except for system integration since its $t_{calculated}$ (0.940) is less than $t_{critical}$ (1.960). Thus, there is significant relationship between leadership, capacity building and IT infrastructure and successful implementation of e-procurement system in Kenya.

4.6.2.2 Test of hypothesis at multivariate level

At this level F-test was used with Analysis of variance (ANOVA) used to generate the F value. ANOVA (Table 4.8) shows relationship between the variables between and within the measure of the dependent variable. It reflects the magnitude the model has on the data compared to those that are not considered in the model (residual). ANOVA table will assist the researcher in evaluating the general hypothesis to determine the suitability of the model to the data analysed. The decision criteria is, if $F_{Critical} > F_{Calculated}$ then accept the **H0** and conclude that the four critical success factors have no significant relationship with the successful implementation of e-procurement.

General hypothesis for this study was stated as:

H0: There is no significant relationship between the four critical success factors and successful implementation of e-procurement in the Kenyan government.

Table 4.6: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.256	4	5.064	127.928	0.000
Residual	4.275	108	0.040		
Total	24.531	112			
Predictors: (Constant), Change in Capacity building, system integration, IT infrastructure and Leadership					
Dependent Variable: Successful implementation of e-procurement					

According to the ANOVA results, the probability value for the regression model was127.928. Given that $F_{Critical}$ (2.447) is less than $F_{Calculated}$ (127.928) then the criteria for decision making would be not to accept the null and instead we accept alternative hypothesis and conclude that the four independent variables are critical in determining the success of implementation of e-procurement by the Kenya government.

4.6.3 Coefficient of determination

Coefficient of determination (R square) is used to show the extent to which any change in dependent variable is explained by the independent variables collectively. Table 4.6 illustrates the value R square.

Table 4.7: Coefficient of Determination on Successful implementation of E-Procurement

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
0.909	0.826	0.819	0.199
Predictors: (Constant), capacity building, system integration, IT infrastructure and Leadership			

Findings indicated that capacity building, system integration, IT infrastructure and Leadership collectively influence successful implementation of e-procurement by 82.6% as indicated by the coefficient of determination (R square). This is also an indication that other factors (except capacity building, system integration, IT infrastructure and Leadership) explain17.4% of any change in successful implementation of e-procurement by the Kenyan government.

4.7 Challenges Hindering Successful implementation of E-Procurement

The procurement officers were presented with a set of six proposed challenges to rate the extent they have affected the successful implementation of IFMIS e-procurement system. The rating was on a 5-point likert where 5 was very great extent while 1 was very little extent. Table 4.11 presents the findings.

Table 4.8: Challenges to Successful implementation of IFMIS E-Procurement

Challenge	Percent (%)					Mean	SDV
	Very Great Extent(5)	Great Extent(4)	Moderate Extent(3)	Little Extent(2)	Very Little Extent(1)		
Poor training	34.5	45.1	14.2	4.4	1.8	4.1	0.91
Inadequate IT infrastructure	31.0	43.4	18.6	4.4	2.7	4.0	0.95
Inadequate financing	32.7	36.3	14.2	10.6	6.2	3.8	1.19
Lack of management support	16.8	18.6	29.2	18.6	16.8	3.0	1.31
Resistance to change	15.0	15.9	31.0	23.9	14.2	2.9	1.25
Hacking of the system	11.5	13.3	27.4	25.7	22.1	2.7	1.27

From the findings, it was observed that poor training and inadequate IT infrastructure have affected successful implementation of IFMIS e-procurement system greatly as they recorded the highest mean of 4.1 and 4.0 respectively. The deviations from the mean were also low (0.91 and 0.95 respectively) indicating that few held a different opinion. Inadequate financing was also cited as a great challenge as reflected by the men of 3.8. However, the high deviation (1.19) indicates that a considerable proportion of the differed with this. Lack of management support, resistance to change and hacking of the system were rated as moderate challenges as indicated by their means (3.0, 2.9 and 2.7 respectively). Nonetheless, a significant number of procurement officers had a different opinion on these three as the deviation from the mean was quite high for each (1.31, 1.25 and 1.27 respectively).

4.7.1 Other Challenges

Procurement officers were also allowed to identify other challenges to the successful implementation of IFMIS e-procurement. The identified challenges fell under three broad categories. The first was lack of technical expertise on new technologies. It was alleged that in most of the organizations, there is lack of the requisite expertise in the technological aspects of

e-procurement. Another prominent challenge that came out was inadequate awareness among all the concerned groups. Allegations were made that there has not been enough awareness campaigns amongst all groups especially the youth about the e-procurement system. The third challenge was about fear of job loss. It was observed that in some organizations, there is the fear that adopting e-procurement could lender some people jobless hence the objection to its implementation.

4.8 Conclusion

Findings identified four factors as critical to successful implementation of e-procurement by the Kenyan government. These factors include capacity building, system integration, IT infrastructure and leadership. Successful implementation of e-procurement system in Kenya has been rated moderate. This is not a surprise given that it has been observed in the recent past that a wide range of organizations are struggling to adopt information and communication technology in their procurement functions (Bilali & Bwisa, 2015).

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions and limitations as well as recommendations. Section 5.2 presents the summary of objectives and methods; section 5.3 gives a summary of the findings while section 5.4 draws the conclusion. Section 5.5 gives the limitations of the study and 5.6 will propose recommendations for further research

5.2 Summary of objectives and methods

The purpose of this study was to critically evaluate the implementation of integrated financial management information system public e-procurement system in the Kenyan government. Specifically, the study sought to identify the critical success factors for successful implementation of e-procurement system in the Kenyan government; examine the relationship between the critical success factors and the successful implementation of e-procurement by the Kenya government as well as establishing the challenges hindering successful implementation of e-procurement system in the Kenyan government.

Descriptive survey design was used. The target population was procurement officers in government, select parastatals and government suppliers. Data was collected using a questionnaire that had Likert questions, close-ended as well as open-ended questions. Descriptive statistics of percentages, means, standard deviations and frequencies were used to analyse quantitative data. Content analysis was used to analyse the qualitative data. In addition, the study conducted a multiple regression to establish the relationship between selected critical success factors and successful implementation of IFMIS e-procurement. Test of hypotheses was also conducted.

5.3 Summary of Findings

5.3.1 Identify critical success factors

The first research question sought to identify critical factors to the successful implementation of e-procurement by the Kenya government. The researcher had identified eight factors but only four were found to be critical after ranking them according to the strength of their means. These critical factors were found to be capacity building, system integration, IT infrastructure and leadership as given by means of 3.63, 3.47, 3.50 and 3.47 respectively. Other factors that were not considered as critical included human resources (mean of 3.16), policies and regulations (mean of 3.05), reporting/accountability (mean of 2.98) and culture (mean of 2.94).

5.3.2 Relationship between critical success factors and successful implementation of e-procurement

The second research question sought to examine the relationship between critical success factors and the successful implementation of e-procurement by the Kenyan government. The relationship was derived from inferential statistics including estimation of the regression model, test of hypothesis and the coefficient of determination. The model was constituted as follows:

Successful Implementation of e-procurement = -0.904 + 0.666Capacity building+0.470System integration + 0.131IT Infrastructure + 0.218Leadership + ε

In addition, t-score was found to be 10.102, 0.940, 2.415 and 4.352 for Capacity building, System integration, IT infrastructure and Leadership respectively the criteria is not to accept the null hypothesis for all explanatory variables except for system integration since its $t_{calculated}$ (0.940) is less than $t_{critical}$ (1.960). Thus, there is significant relationship between leadership, capacity building and IT infrastructure and successful implementation of e-procurement system in Kenya. Considered collectively, the ANOVA found the four independent variables critical to successful implementation of e-procurement with $F_{Critical}$ of 2.447 being less than $F_{Calculated}$ of 127.928. R squared found the critical factors explaining 86.6% of changes in the successful implementation of e-procurement.

5.3.3 Establish challenges impending successful implementation of e-procurement

The third and last research question sought to establish challenges impending successful implementation of e-procurement. From the findings, it was observed that poor training and inadequate IT infrastructure have affected successful implementation of IFMIS e-procurement system greatly as they recorded the highest mean of 4.1 and 4.0 respectively. The deviations from the mean were also low (0.91 and 0.95 respectively) indicating that few held a different opinion. Inadequate financing was also cited as a great challenge as reflected by the men of 3.8. However, the high deviation (1.19) indicates that a considerable proportion of the differed with this. Lack of management support, resistance to change and hacking of the system were rated as moderate challenges as indicated by their means (3.0, 2.9 and 2.7 respectively).

5.4 Discussion of the Findings

Findings indicated that in general, the successful implementation of e-procurement system in Kenya has been moderate. This implies that the successful implementation of the system in the country is not a smooth and guaranteed process. This is not a surprise given that it has been observed in the recent past that a wide range of organizations are struggling to adopt information and communication technology in their procurement functions (Bilali&Bwisa, 2015).

In regard to the critical success factors for Successful implementation of e-procurement, findings indicated that most critical in the Kenyan context are capacity building, system integration, IT infrastructure and leadership. These factors were revealed as having a significant relationship with successful implementation of e-procurement. However, there is a perception that as far as the implementation is concerned, leadership in the country is fair while IT infrastructure, system integration and capacity building are poor. The findings on these four as the critical success factors differ from those identified in other contexts in some past studies like the one in which three e-procurement success factors were identified as supplier and contract management; end-user behaviour and e-procurement business processes; and information and e-procurement infrastructure (Rebecca & Ravi, 2007). The findings nonetheless seem to fit into categorization of CSF by other studies such as the one in which the CSF to effectively achieve organizational improvement through IT were defined as: Technology, Process and People (Nasi, 2005).

The factors have also been identified as critical in various studies also. For instance, capacity building has been cited as a critical factor that affects the success of IFMIS implementation especially in developing countries(Aberdeen Group, 2001).Capacity building has-been pointed out as a never-ending process, but one that needs to be continuous and permanent given the nature of institutions and organizations (Davenport & Brooks, 2004). Systems integration has also been identified as a critical success factor for e-procurement implementation both with the customer's information infrastructure and in its links to suppliers (Rajkumar, 2001).In some other research, leadership has been found to be a critical factor that affects e-procurement institutionalization process especially in developing nations (Wahid, 2012). Investigations on the experience of Yogyakarta City also found that strong leadership as well as changes in management all had an influence on the smooth successful implementation of e-procurement (Utama, 2009).

Findings also indicated that main challenges that are hindering successful implementation of IFMIS e-procurement in Kenya include poor training and inadequate IT infrastructure. There were other notable challenges including lack of technical expertise on new technologies, inadequate awareness among all the concerned groups especially the youth and the fear of job loss. These findings differ with some past studies in different contexts. For instance, some research has identified resistance to change, lack of a widely accepted solution and lack of leadership, which are cultural, as some of the biggest barriers to the introduction of e-procurement within the public sector (Davila et al, 2003). However, the findings concur to some past research in other contexts. For example, lack of IT infrastructure has been cited as a major challenge (Eadieet al, 2007). It has also been affirmed that most organizations lack the expertise to operate the system if initiated (Heywood, 2002).

5.5 Conclusion

From the revelations made by the critical analysis of the findings of this study, several inferences can be made concerning stakeholders perception on IFMIS e-procurement implementation in the country. First, the e-procurement system has been implemented to a moderate level in the Kenyan government. There is significant relationship between capacity building, system integration, IT infrastructure and leadership and the implementation. Thus, if the government is to realize full success in implementing the system, emphasis must be given on capacity building, system integration, IT infrastructure and leadership. This however is not to say that the other factors should be ignored completely. Rather, they (Human Resources,

Policies/Regulations, Reporting accountability and Culture) should be considered too but priority needs to be put squarely on the aforementioned four factors.

It can also be deduced that Kenyan government is yet to fully realize the aspired benefits but has made considerable progress. This inference is made in the light of the objectives envisaged to be achieved during introduction of the system. These included: to enhance transparency in public procurement; achieve cost savings; reduce inventory costs; achieve internal arbitrage and ensure consistent and sustainable contract development. At the current level of implementations, the main felt benefits are provision of a complete audit trail to facilitate in audits, efficient allocation of resources as well as substantial cost reduction.

Additionally, it can be concluded that the key hindrances that have choked the successful implementation of IFMIS e-procurement system such that it is to a moderate level, entail: poor training, inadequate IT infrastructure for the system, lack of technical expertise and inadequate awareness about the system. These most likely have been the reasons that some government institutions are yet to fully implement the system. Although a few institutions may have been more successful than others in implementing the system despite the challenges, quite a number of them have stagnated at some points in the process.

It is thus inferred that to move from the moderate level of success in implementation of e-procurement, policy is needed that will pay attention on four areas as far as the implementation is concerned. That is capacity building, system integration, IT infrastructure and leadership. The government and other organizations need to have the priorities placed on capacity building particularly investing on ensuring the right IT infrastructure as well as training on using the system effectively. Leadership in the national and county governments as well as in the organizations also need to be more committed towards the implementation of the system. This will help reduce the challenges and enhance the implementation success. Research on the issue of implementation of e-procurement whether academic or any other, should consider the identified CSF in their studies in their efforts to advance research on the same.

5.6 Limitations of the Study

The study majored on the successful implementation of e-procurement by the Kenya government ministries due to time limitation. However, with the devolved governments, implementation of e-procurement by the county government has not been considered.

The results of the study are confined to the government ministries and not to any other institutions such as parastatals, private sector and non-governmental organizations.

The study focused only on the four success factors identified as critical for successful implementation of e-procurement. Thus it did not focus on the other success factors including reporting/accountability, culture, human Resources and policies/regulations which are also important to the success in e-procurement implementation.

Some respondents did not fully cooperate in filling the questionnaires due to time constraints and personal reasons.

5.7 Recommendations

A similar study on success of e-procurement implementation by other institutions such as parastatals, private sector, non-governmental organisations, but more importantly, the various county governments to be carried out to assess the level of success, as well as bring out the challenges faced in implementing e-procurement at the counties.

A further evaluation on successful implementation of e-procurement focusing on all success factors, capacity building, leadership, IT infrastructure and systems integration reporting/accountability, culture, human Resources and policies/regulations is recommended.

Government employees and especially professionals are be encouraged to respond to academic research questions in order to enhance creation of knowledge and nurture aspiration of new scholars. The Kenya government ought to invest in capacity building to ensure those entrusted with implementation of e-procurement have the needed competence and facilities to scale up the level of success in implementation of e-procurement.

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APPENDIX 1: QUESTIONNAIRE

This questionnaire seeks to collect data that will help in conducting a study to critically evaluate the IFMIS e-procurement system in Kenya. Kindly provide information frankly and honestly. Any information you give will be treated confidentially and used for academic purposes only. **Do NOT write your name** anywhere on this questionnaire.

General Information

1. Please indicate your highest level of education

Post Graduate [ ] Graduate [ ] Diploma [ ] Certificate [ ]

2. How long have you served in this organization

Less than 1 year [ ]
1 – 5 years [ ]
6 – 10 years [ ]
Over 10 years [ ]

Critical Success Factors for IFMIS e-Procurement Implementation

3. On a scale of 1-5, please indicate to what extent the following factors affected the successful implementation of IFMIS e-procurement (**1=Very Little Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5= Very Great Extent**). Tick Appropriately

Factor	**Very Great Extent(5)**	**Great Extent(4)**	**Moderate Extent(3)**	**Little Extent(2)**	**Very Little Extent(1)**
Leadership					
Policies/Regulations					
Human Resources					
Capacity building					
IT Infrastructure					
System integration					
Culture					
Reporting accountability					
Any Other (Specify)					

4. In your opinion, how can you rate the factors as far as the implementation of IFMIS in Kenya is concerned?

Factor	**Excellent(5)**	**Good(4)**	**Fair(3)**	**Poor(2)**	**Very Poor(1)**
Leadership					
Policies/Regulations					
Human Resources					
Capacity building					
IT Infrastructure					
System integration					
Culture					
Reporting accountability					
Any Other (Specify)					

Benefits of E-Procurement

5. On a scale of 1 – 4 indicate the extent to which you agree with the following statements **(4= Strongly Agree, 3= Agree, 2= Disagree, 1= Strongly Disagree)**

Statement	**Strongly Agree(4)**	**Agree(3)**	**Disagree(2)**	**Strongly Disagree(1)**
IFMIS has led to efficient allocation of resources				
IFMIS has shortened the period for preparation of financial statements				
IFMIS has reduced government resources wastage and corruption				
IFMIS has given a complete audit trail to facilitate in audits				
IFMIS has ensured security of data				

6. In your opinion, what other benefits has the introduction of IFMIS in the financial management of the public sector brought?

Challenges of E-Procurement

7. On a scale of 1-5, please indicate to what extent the following challenges have affected the implementation of IFMIS e-procurement (**1=Very Little Extent; 2=Little Extent; 3=Moderate Extent; 4=Great Extent; 5= Very Great Extent**). Tick Appropriately

Challenge	**Very Great Extent(5)**	**Great Extent(4)**	**Moderate Extent(3)**	**Little Extent(2)**	**Very Little Extent(1)**
Resistance to change					
Lack of management support					
Inadequate IT infrastructure					
Inadequate financing					
Poor training					
Hacking of the system					

8. In your opinion, what other challenges has the implementation of IFMIS in the financial management of the public sector faced?

.....

.....

Implementation of IFMIS e-Procurement

9. In your opinion, kindly rate the extent to which IFMIS e-procurement has been implemented in this organization.

Very Great Extent [ ]
Great Extent [ ]
Moderate Extent [ ]
Little Extent [ ]
Very Little Extent **[ ]**

10. Kindly suggest ways in which you think the implementation of IFMIS e-procurement system can be enhanced.

APPENDIX 2: PARASTATALS IN KENYA

1	Anti-Counterfeiting Agency (ACA)
2	Anti-Money Laundering Advisory Board
3	Bomas of Kenya
4	Capital Market Authority
5	Commission for University Education (CUE)
6	Communications Appeal Tribunal.
7	Competition Authority of Kenya
8	Consolidated Bank of Kenya
9	Deposit Protection Fund Board
10	East African Portland Cement Company (EAPCC)
11	Energy Regulatory Commission
12	Engineers Board of Kenya
13	Export Processing Zones Authority (EPZA)
14	Geothermal Development Company
15	Higher Education Loans Board (HELB)
16	Insurance Regulatory Authority
17	Jomo Kenyatta Foundation (JKF)
18	Kenya Accountants and Secretaries National Examinations Board (KASNEB)
19	Kenya Accreditation Service (KENAS)
20	Kenya Airports Authority (KAA)
21	Kenya Animal Genetics Resource Center
22	Kenya Broadcasting Corporation
23	Kenya Building Research Centre
24	Kenya Bureau of Standards (KEBS)
25	Kenya Civil Aviation Authority (KCAA)
26	Kenya Electricity Generating Company
27	Kenya Electricity Transmission Company
28	Kenya Ferry Services (KFS)
29	Kenya Film Classification Board
30	Kenya Film Commission
31	Kenya Forest Research Institute (KEFRI)
32	Kenya Forest Service (KFS)
33	Kenya Industrial Estates (KIE)
34	Kenya Industrial Property Institute (KIPI)
35	Kenya Industrial Research and Development Institute (KIRDI)
36	Kenya Institute of Curriculum Development (KICD)
37	Kenya Institute of Mass Communication
38	Kenya Institute of Special Education (KISE)
39	Kenya Investment Authority
40	kenya Maritime and Fisheries Research Institute
41	Kenya Maritime Authority (KMA)

42	Kenya Medical Research Institute (KEMRI)
43	Kenya Medical Supplies Agency (KEMSA)
44	Kenya National Assurance Co. (2001)
45	Kenya National Examinations Council(KNEC)
46	Kenya National Highways Authority
47	Kenya National Library Service
48	Kenya National Shipping Line (KNSL)
49	Kenya Nuclear Electricity Board
50	Kenya Ordnance Factories Corporation (KOFC)
51	Kenya Petroleum Refineries
52	Kenya Pipeline Company
53	Kenya Ports Authority (KPA)
54	Kenya Post Office Savings Bank
55	Kenya Power
56	Kenya Reinsurance Corporation
57	Kenya Revenue Authority
58	Kenya Roads Board
59	Kenya Rural Roads Authority
60	Kenya Safari Lodges and Hotels (KSLH)
61	Kenya Tourism Board (KTB)
62	Kenya Tourist Development Corporation (KTDC)
63	Kenya Trade Network Agency
64	Kenya Urban Roads Authority
65	Kenya Utalii College
66	Kenya Veterinary Vaccines Production Institute
67	Kenya Water Towers Agency (KWTA)
68	Kenya Wildlife Service (KWS)
69	Kenya Wine Agencies (KWAL)
70	Kenyatta International Convention Centre (KICC)
71	Kerio Valley Development Authority
72	Konza Technopolis Development Authority
73	Media Council of Kenya
74	Micro and Small Enterprises Authority
75	National Bank Of Kenya
76	National Campaign against Drug Abuse Authority Board
77	National Commission for Science, Technology and Innovation (NACOSTI)
78	National Construction Authority
79	National Council for Children Services
80	National Council for Persons With Disabilities
81	National Development Fund for Persons with Disabilities
82	National Environment Management Authority (NEMA)
83	National Environment Trust Fund
84	National Hospital Insurance Fund (NHIF)

85	National Housing Corporation
86	National Industrial Training Authority
87	National Museums of Kenya
88	National Oil
89	National Social Security Fund
90	National Sports Academy
91	National Sports Fund
92	National Standards Council
93	National Transport and Safety Authority
94	New Kenya Co-operative Creameries (New KCC)
95	Numerical Machining Complex (NMC)
96	Policy Holders Compensation Fund
97	Postal Corporation of Kenya
98	Privatization Commission
99	Productivity Centre of Kenya
100	Public Procurement Oversight Authority
101	Renewable energy Portal
102	Retirements Benefit Authority
103	Rift Valley Water Services Board
104	Rural Electrification Authority
105	Sacco Societies Regulatory Authority (SASRA)
106	Settlement Fund Trustees
107	Social Protection Secretariat
108	Sports Kenya
109	State Corporations Appeals Tribunal
110	Teachers Service Commission (TSC)
111	The Jomo Kenyatta Foundation
112	The Kenya ICT Authority
113	The Kenya Yearbook Editorial Board (KYEB)
114	The National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA)
115	Tourism Fund
116	Tourism Regulatory Authority
117	Uwezo Fund
118	Water Services Trust Fund
119	Women Enterprise Fund Advisory Board

APPENDIX 3: SOME CRITICAL SUCCESS FACTORS ITEM ATTRIBUTES

CSF	Item attributes
End-users Uptake and Training	User involvement, user support/communication, user training
Supplier Adoption	Supplier e-readiness, supplier adoption strategy and communication plan, suppliers education and benefits demonstration, compliance to best practices with content and catalogue management
Business Case and Project Management	Identification of business drivers, business process assessment and requirement, Return on Investment (ROI), Total Cost of Ownership (TCO), risks identification and management, pilot projects
System Integration	Information matching, sending and receiving of real time information to other information systems, electronic commerce with suppliers
Security and Authentication	Infrastructure authentication and authorization, confidentiality and integrity, security requirements
Re-engineering the Process	Transparency improvement, automated invoice payment and reconciliation, compliance with purchasing procedures and standard
Performance Measurement	Goals and targets, Key Performance Indicators (KPIs), baseline measurement, progress monitoring
Top Management Support	Management sponsor, involvement of the steering committee, investment in organizational change
Change Management	Identification and management of key stakeholders, e-Procurement impact

	assessment, potential barriers to implementation, organizational resistance
e-Procurement Implementation Strategy	Sound procurement practices, opportunities for aggregation, a consistent approach to procurement, relationships with industry and small businesses
Technology Standards	Technical standards, content standards, process and procedural standards, compliance with the standards frameworks interoperability

Source: Vaidya, Sajeev and Callendar (2009)