FACTORS INFLUENCING IMPLEMENTATION OF E-PROCUREMENT IN IFMIS PROJECTS IN PUBLIC SECTOR: A CASE OF MINISTRY OF WATER AND IRRIGATION IN NAIROBI KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for any award in any other university.

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This research project has been submitted for examination with my approval as the candidate's supervisor.

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DEDICATION

This research project is dedicated to my family; they include my wife Sarah Siwa, my loving children Shawn, Shane and Shannel, parents Mr and Mrs Kigen and my brothers and sisters.

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TABLE OF CONTENTS

DECLARATION ii
DEDICATION iii
ACKNOWLEDGEMENT iv
LIST OF TABLES viii
LIST OF FIGURES ix
LIST OF ACRONYMS AND ABBREVIATION x
ABSTRACT xi
CHAPTER ONE: INTRODUCTION 1
1.1 Background of the Study 1
1.2 Statement of the problem 5
1.3 Purpose of the study 7
1.4 Objectives of the study 7
1.5 Research questions 7
1.6 Significance of study 7
1.7 Delimitation of the study 8
1.8 Limitations of the study 9
1.9 Basic assumption of the study 9
1.10 Definition of significant terms used in the study 10
1.11 Organization of the study 11
CHAPTER TWO: LITERATURE REVIEW 12
2.1 Introduction 12
2.2 Concept of e-procurement implementation 12
2.3 Top Management support and implementation of e-procurement 14
2.4 Information technology infrastructure and implementation of e-procurement 16
2.5 Staff training and implementation of e-procurement 20
2.6 Supplier capacity and implementation of e-procurement 22
2.7 Theoretical framework 24
2.8 Conceptual framework 25
2.9 Summary and research gaps 26

CHAPTER THREE: RESEARCH METHODOLOGY 28
3.1 Introduction 28
3.2 Research design 28
3.3 Target population 28
3.4 Sample size and sampling technique 29
3.5 Research instrument 29
3.5.1 Pilot testing of research instrument 30
3.5.2 Validity of research instruments 30
3.5.3 Reliability of research instruments 30
3.6 Data collection procedures 31
3.7 Data analysis 31
3.8 Ethical considerations 32
3.9 Operational definition of variables 32
CHAPTER FOUR : DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS 36
4.1 Introduction 36
4.2: Response rate 36
4.3 Background information of the respondents 36
4.3.1 Distribution of respondents by departments 36
4.3.2 Respondents position in the Department 37
4.3.3 Level of education of the respondents 38
4.3.4 Respondents work experience 38
4.4 Implementation of e-procurement 39
4.5 Influence of top management commitment on implementation of e-procurement 40
4.6 Influence of information technology infrastructure on implementation of e-procurement 41
4.7 Influence of staff training on implementation of e-procurement 42
4.8 Influence of suppliers capacity on implementation of e-procurement 43
4.9 Inferential statistics 44

CHAPTER FIVE: SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS 48
5.1 Introduction 48
5.2. Summary of the findings 48
5.3 Discussion of the findings 49
5.3.1 Top Management commitment and implementation of e-procurement 49
5.3.2 Information technology infrastructureand implementation of e-procurement 50
5.3.3 Staff training and implementation of e-procurement 51
5.3.4 Suppliers Capacity and Implementation of E-procurement 51
5.4 Conclusions of the study 52
5.5 Recommendations 52
5.6 Recommendation for further research. 53
REFERENCES 54
APPENDICES 61
Appendix I: Introduction Letter 61
APPENDIX II: Research Questionnaire 62
APPENDIX III: Required size for randomly chosen sample 69

LIST OF TABLES

Table 3.1 Sample Size 29

Table 3.2: Reliability Analysis 31

Table 3.3 Operationalization of Variables 33

Table 4. 1: Response rate 36

Table 4. 2: Distribution of Respondents by Departments 37

Table 4. 3: Respondents position in the Department 37

Table 4. 4: Level of Education 38

Table 4. 5: Respondents Work Experience 38

Table 4. 6: Implementation of E-procurement 39

Table 4. 7: Top Management Commitment 40

Table 4. 8: Information Technology Infrastructure 41

Table 4. 9: Staff Training 42

Table 4. 10: Supplier's capacity 43

Table 4. 11: Model Summary 44

Table 4. 12: Summary of One-Way ANOVA results 45

Table 4. 13: Regression Coefficients 46

LIST OF FIGURES

Figure 1: Conceptual Framework……**26**

LIST OF ACRONYMS AND ABBREVIATION

BPO	Business Process Off-shoring
CRA	Commission for Revenue Allocation
EDI	Electronic Data Interchange
EPS	Electronic Procurement Systems
ERP	Enterprise Resource Planning
G2B	Government-to-Business
GDP	Gross Domestic Product
GoK	Government of Kenya
ICT	Information Communication Technology
IFMIS	Integrated Financial Management Information System
KRA	Kenya Revenue Authority
OJEU	Official Journal of the European Union
PFMR	Public Financial Management Reforms
PPDA	Public Procurement and Disposal Act
PPOA	Public Procurement Oversight Authority
TR	Technology Readiness
UK	United Kingdom
USA	United States of America

ABSTRACT

Over the last few years, the internet is changing the way business is done in every industry. e-procurement has dramatically changed the way purchasing is done. Both public and private sector institutions have embraced the benefits accrued from e-procurement practices. The Kenyan government has recognized adoption of ICT in service delivery to the public and citizen in the Constitution. However, even given the potential benefits of e-procurement, most of government ministries have not effectively implemented the e-procurement practices. This study sought to investigate the factors influencing the implementation of e-procurement in the Ministry of Water and Irrigation. The study was guided by the following research objectives, to determine influence of top management commitment, information technology infrastructure, staff training and supplier capacity on implementation of e-procurement in the Ministry of Water and Irrigation. This research problem was studied through the use of a descriptive research design. The target populations of this study were staff working in several departments of the Ministry of Water and Irrigation headquartered in Nairobi. The study employed the stratified random sampling technique to come up with a sample size of 103 respondents from a population of 142. This study relied mostly on primary data that was collected by use of questionnaires. The study generated both qualitative and quantitative data. The quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 21.0) and was analyzed using descriptive and inferential statistics. Qualitative data was presented in tables while the explanation to the same was presented in prose. The study concludes that top management commitment is critical in the implementation of e-procurement in the Ministry of Water and Irrigation, the success in e-procurement implementation also relies on Information technology infrastructure, staff training and supplier capacity the research concludes that that e–Procurement enhances accountability through elimination of corruption, errors and hence ensuring efficiency of procurement systems. e- Procurement ensures that there is technology to monitor and ensure that internal processes are in place and they are function, e- Procurement system enhances coordination of procurement process and hence reduces bureaucracy which enhances efficiency of organizations; e- Procurement system eliminates overlapping or conflicting jobs or duties, and that adoption of e- procurement decreased the level of bureaucracy in the organisation which enhanced the efficiency of procurement process. The research recommends that the Top management should show full commitment throughout the implementation process; this will serve as a motivation to the personnel in the lower levels of management. The government should train its employees to reduce resistance to ICT in the organisation. The government should also lay in the proper infrastructure and ICT platform. Government ministries and Parastatals should consider adoption of ICT in their procurement process. It is very important that the procurement function in the institution is discharged with probity, transparency and accountability in a manner that secures best value for the organisation. Purchasing professionals should take the time to understand the fundamentals of ethical behavior when selecting and managing suppliers as well being aware their own personal responsibilities and demonstrate integrity at all times.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Over one decade, introduction of internet has evolved from being a scientific network only, to a platform that is enabling a new generation of business (Enders, T2010). The internet is changing the way business is done in each industry. The World Wide Web has turned into a wellspring of data, products and ventures. e-obtainment has developed as a standout amongst the most talked about subject in material acquisition. Without uncertainty, it will drastically change the way buying is done soon (Kumar and Agrahari, 2012). Legislatures of both created and developing nations have grasped ICT to enhance the nature of open administration, increment free to data and to empower more cooperation in urban issues. Subsequently, most nations have perceived open support in government offering process by upgrading access to circumstances accessible in the administration powers, for example, acquisition action. In developing nations, e-Business has turned out to be an integral part of regular daily existence in numerous business hovers as countless are included in one type of e-Business or another, for example, e-acquirement.

The accentuation is on the utilization of innovation to substitute or upgrade value-based exercises keeping in mind the end goal to increase working efficiencies (Kapurubandara and Lawson, 2012). Most created and developing nations have understood the significance of the e-acquisition rehearses as a method for enhancing administrations conveyance and powerful inventory network execution. A few nations where e-obtainment activities have been actualized incorporate Singapore, UK, USA, Malaysia, Australia and the European Union. e-Procurement activities are frequently part of a nation's bigger e-Government endeavors to better serve its native and organizations in the computerized economy. For example, Singapore's GeBIZ was executed as one of the projects under its e-Government end-all strategy. This field is populated by two sorts of sellers; enormous endeavor asset arranging (ERP) suppliers who offer e-Procurement as one of their administrations, and the more moderate administration suppliers concentrated

particularly of e-Procurement. As per Aberdeen (2001), an e-Procurement framework oversees tenders through a site. This can be gotten to anyplace universally and has enormously enhanced the availability of tenders.

As indicated by United Nations Conference on Trade and Development (2003), it was accounted for that effective e-acquisition execution in acquiring of products and enterprises in firms brings about funds up to 30 % and decrease in exchange costs up to 25%. A study report by OECD (2011) assessed the estimation of government acquirement showcase at more than 2,000 billion in 1998. This was proportional to 7% of the universes GDP and 30% of the world stock exchange. Kapurubandara and Lawson (2012) pointed that the span of open acquirement differed somewhere around 5 and 8% of GDP in industrialized nations. For Middle East and Africa, the greatness of focal obtainment buys ran somewhere around 9% and 13% of GDP. This obviously demonstrates open acquisition is essential inside both the created and developing economies.

Execution norms when received can give the chiefs in the obtainment office with unprejudiced and target data in regards to the execution of the acquirement work. In Uganda, obtainment and transfer arranging are key to legitimate acquisition administration. Open Procurement and Disposal of Public Assets (PPDA) Regulation 96(1) gives that a client division might set up a multi-yearly, moving work get ready for obtainment in light of the endorsed spending plan, and which is submitted to the acquisition and transfer unit to encourage efficient execution of yearly acquirement arranges. An imperative issue out in the open segment administration today is the expanding interest for straightforwardness, proficiency and adequacy in administration quality (Ngobe 2011). Clients, natives and organizations confronted each day with new inventive e-business and web based business models actualized by the private segment and made conceivable by ICT devices and applications are requiring the same from Government elements. The presentation of Electronic Government is turning out to be

progressively main stream in both the created and developing nations to build the productivity and viability of Government administration conveyance.

In Kenya, the Public Financial Reform Management (PFMR) Strategy Paper 2001-2006 suggested computerization and in addition combination of key government capacities, for example, the HR finance, bookkeeping, acquisition and planning referring to straightforwardness, better budgetary administration and simpler reporting as a portion of the advantages (GoK, 2011). As per the E-government Strategy Paper 2004 e-obtainment was one of the medium term destinations which should be actualized by June 2007, however the execution procedure was seen to be moderate (GoK, 2011). The National Treasury, is the Ministry in Government which is initiating people in general monetary administration changes. Inside the Ministry, there is a division called the Integrated Financial Management Information System (IFMIS) Department which has the command of planning, leading and dealing with the Integrated Financial Management Information System re-building process in all focal government services, district governments and all administration organizations.

Through this division, the Integrated Financial Management Information System (IFMIS) was produced in 1998 and the arrangement of the framework to ten pilot services began in 2003. The organization to the districts began in 2012 after declaration of the new Constitution and as at the date of this study, just nineteen out of forty seven areas have begun utilizing the IFMIS framework. At present the proposed clients of the IFMIS framework at the provinces are being prepared on the same (Imbuye, 2013). The Strategic Plan for GoK IFMIS (2011-2015) sketched out the advancement of the Integrated Financial Management System (IFMIS). Right now, the framework is being re-designed with the point of enhancing the frameworks for administration and reporting of money related information and data for the Government of Kenya.

The IFMIS usage necessity in Kenya started from the Ministry of Finance and Economic Planning ICT Master Plan 2001-2005 that highlighted holes and shortcomings inside the

SIBET framework that was being used (Imbuye, 2013). The end-all strategy proposed improvement of various modules involving: bookkeeping, income administration, resource administration among others and foundation of interfaces with the National Bank Payment Information System, Kenya Revenue Authority (KRA) and the Ministry of Labor for finance and human asset administration modules. The GoK IFMIS is an Oracle based Enterprise Resource Planning (ERP) programming. ERPs are expansive scale PC programming and equipment frameworks that endeavor to coordinate all information and procedures of an association into a bound together framework housed in a brought together database which is gotten to through a protected system (Imbuye, 2013). ERPs have capacities for taking care of big business wide business forms extending from capacities, for example, producing, coordination's, dissemination, stock, sending, invoicing and bookkeeping.

PPOA Interim Report (2013) laid out arrangements to present e-acquirement in all Kenya's open substances as a method for checking debasement and lessening offering delays. As per the report, the program was set to be taken off in 2013 after the finishing of a pilot consider. The framework is tied down on the Integrated Financial Management System (IFMIS). The PPOA Interim Report (2013) highlighted the targets which the Government of Kenya expects to accomplish through the execution of an e-obtainment framework. The destinations incorporate the accompanying: First is to improve straightforwardness out in the open obtainment by making the required data accessible in the web. Second, as indicated by the PPOA Interim Report (2013), cost funds can be looked for through request accumulation and higher rivalry as a consequence of more extensive exposure to Government acquisition openings. Through e-acquirement this can be accomplished through conglomerating Government divisions' request to influence purchasing power with the supply advertise. Thirdly; through e-acquisition, the target of lessened stock expenses can be accomplished through enhanced arranging and administration of stock prompting to lower levels of stock. Fourthly; by utilizing e-obtainment, the goal of interior arbitrage can be accomplished by guaranteeing consistency in merchandise and ventures costs at the best cost over all offices at thing

level. Through the e-acquirement framework, the goal of predictable and practical contract improvement can be accomplished by empowering pre-qualified sellers the chance to get to other government divisions. E-acquisition can empower value-based viability through mechanization and disposing of non-esteem adding ventures inside the acquirement to empower proficient and viable procedures.

1.2 Statement of the problem

With the need to coordinate key capacities, for example, acquisition and accounting and to streamline and improve straightforwardness in administration of open finances and to give a structure to institutionalized reporting, the legislature has embraced the arrangement requiring all legislature obtaining substances to utilize the Integrated Financial Management Information System (IFMIS). As indicated by CRA (2013), in the 2013/2014 monetary year a sum of 210 billion Kenya shillings was dispensed to the districts government to encourage their operations. This brought about a striking accomplishment when the administration services reported a 42.7% drop in their acquisition working cost adding up to Ksh629 million down from KSh1.64billion in the earlier year (GoK, 2014). Concurring PPOA (2013) more than half of acquisition procedures in Kenyas open acquiring elements are completed physically. The manual procedures are expensive, moderate, wasteful and information stockpiling and recovery is poor (Mose, Njihia and Magutu, 2013).

As indicated by the e-government technique paper (2004), e-obtainment was one of the medium term goals which was to be actualized by June 2007, yet the procedure has been moderate and discoveries demonstrate that a large portion of the acquirement forms in broad daylight organizations are still manual with the web just being utilized for messages and web perusing (PPOA, 2013). This moderate execution of e-acquirement in general society segment raises worry in the matter of what elements impact the usage of e-obtainment in the Kenyan open division especially in government services. Osore (2013) pointed that presentation of e-acquirement is gone for presenting an acquisition and installment System (P2P) which completely mechanizes the obtainment and

installment prepare. The procedure may lessens the workload required during the time spent offering, expenses and time required as providers won't need to make a trip long separations to place tenders in various districts or potentially services head workplaces. Government Ministry are required to receive e-obtainment through utilization of IFMIS, however few Ministry have grasped the utilization of the IFMIS in their acquisition because of a few difficulties that influence reception of the e-acquirement. As indicated by GoK (2015) Ministry of water was among the Ministry that were attempting to embrace e-acquisition.

Mose, Njihia and Magutu (2013) led a study on the basic achievement figures and difficulties e-obtainment usage among expansive scale producers in Nairobi, Kenya. The study inferred that the greater part of the huge scale fabricating firms have received e-acquisition. However these studies did not address E-acquirement usage out in the open parts. Odago and Mwajuma (2013) did a study on variables influencing compelling usage of e-acquisition in area governments with an emphasis on Kajiado County, Kenya. The study found that administration support is exceptionally vital in executing e-obtainment in the area governments, best administration is so essential since it goes about as the main thrust behind the entire usage handle. Otieno, Muthoni and Mungai (2013) did a study on elements influencing utilization of e-obtainment: an overview in chose firms in Kisii Town, Kenya. The study inferred that the estimation of e-obtainment influences the utilization of e-acquisition being a main impetus being used of e-acquirement regarding on-time conveyance, diminished cost of acquisition, wide wellspring of providers, enhanced purchaser provider relationship, high benefit and expanded firms' intensity.

Regardless of the Governments incremental endeavors in setting down ICT methodologies in the zone of Public Financial Reforms keeping in mind the end goal to help straightforwardness, proficiency and adequacy; it is still obvious that the usage of e-obtainment is still moderate. Likewise, no study has yet centered around variables influencing usage of e-acquirement out in the open division concentrating on government Ministry. This study therefore seeks to investigate factors influencing implementation of

e-procurement in IFMIS projects in the public sectors focusing on Ministry of Water and Irrigation.

1.3 Purpose of the study

The purpose of this study was to establish the factors influencing implementation of e-procurement in IFMIS projects in public sector: a case of Ministry of Water and Irrigation.

1.4 Objectives of the study

1. To determine the influence of top management commitment on implementation of e-procurement in the Ministry of Water and Irrigation.
2. To establish the influence of information technology infrastructure on implementation of e-procurement in the Ministry of Water and Irrigation.
3. To examine how staff training influences implementation of e-procurement in the Ministry of Water and Irrigation.
4. To determine the influence of supplier capacity on implementation of e-procurement in the Ministry of Water and Irrigation.

1.5 Research questions

1. How does top management commitment influence implementation of e-procurement in the Ministry of Water and Irrigation?
2. How does information technology infrastructure influence implementation of e-procurement in the Ministry of Water and Irrigation?
3. What is the influence of staff training on implementation of e-procurement in the Ministry of Water and Irrigation?
4. How does supplies capacity influence implementation of e-procurement in the Ministry of Water and Irrigation?

1.6 Significance of study

The findings of this study will be of significance to government services and other open securing substances. By utilizing the broke down results, government approach producers

and different officers in the services will be in a superior position to comprehend the elements affecting the usage of e-acquirement practices.

Since the study has drawn information from inside Ministry of Water and Irrigation, the study will draw versatile and imaginative systems which are steady with the ebb and flow financial and aggressive ecological substances. The Ministry through different powers can then encourage improvement of methodologies that will guarantee accomplishment of their objectives regardless of the unusual environment. Promote the Ministry will have the capacity to recognize the elements that should be surveyed to improve e-obtainment usage.

Findings of this study are considered to be of extraordinary significance to different analysts mostly in the area of open segment purchasing. The archived report of this study will be effectively obtained in the college library and it will furnish different learners with more information and aptitudes on variables affecting the execution of e-acquisition in the Ministry of Water and Irrigation. The study will encourage make a commitment to the accessible writing on open area e-acquirement which will be a piece of articles that will be helpful to analysts who need to promote in this study and to other more extensive partners in scholastic circles.

1.7 Delimitation of the study

This study concentrated on the components impacting execution of e-acquirement in the Ministry of Water and Irrigation. This study was constrained to the Ministry of Water and Irrigation where exceptional concentration was on the different divisions, under the Ministry that are headquartered in Nairobi. This included gathering data from the staff from inside the Ministry of Water and Irrigation. This is important in gathering the information required as time is the fundamental constraining variable that may restrain gathering the information from every one of the offices the nation over. The study centered both on the accessible writing on e-acquisition execution and essential information gathered utilizing polls. The study was completed in Ministry of Water and

Irrigation home office. The objective populace of this study contained acquirement officers, ICT officers, HRM and organization staff from the Ministry of Water and Irrigation.

1.8 Limitations of the study

The analyst experienced different restrictions that prevented access to data that the study looked for. The primary restriction of the study was the failure to incorporate all the eighteen Government Ministries in Kenya. This was a case concentrating on the chose Ministry. The study ought to cover all administration services in order to give a more wide based investigation. Be that as it may, time and assets set this confinement.

The scientist likewise experienced different difficulties or impediments, for example, none-participation by staff as they feel the data they give might be utilized to depict a terrible picture to general society which may make an awful observation towards the Ministry henceforth not coming to the focused on test estimate. Notwithstanding, the specialist guaranteed the respondents of exclusive measures that the discoveries would be concurred and guarantee them that the data would be utilized just for scholarly purposes and a duplicate would be benefited to them on their demand.

1.9 Basic assumption of the study

The specialist accepted that the respondents would be straightforward, agreeable, true (objectivity) and reliable in their reaction to the examination instruments and would be accessible to react to the exploration instruments in time. It is additionally the supposition of the specialist that the commanding voices in the Ministry of Water and Irrigation would allow the obliged consent to gather information from representatives. The concentrate promote made the suspicions that there would be no genuine changes in the piece of the objective populace that would influence the viability of the study test.

1.10 Definition of significant terms used in the study

e-procurement	This is the business-to-business or business-to-consumer or business-to-government purchase and sale of supplies, work and services through the internet as well as other information and networking systems
Government	This is the governing body of a nation, state, or community.
ICT	This refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions.
Implementation	This is the act or process of beginning to use something new or different
Management	This is the organization and coordination of the activities of a business in order to achieve defined objectives.
Supplier capacity	This is a supply chain management term that means anyone who provides goods or services to a company or individuals. This is the ability or power to do, experience, or understand something
Staff training	This is the action of teaching a person or animal a particular skill or type of behavior.
IFMIS	Integrated Financial Management Information System

1.11 Organization of the study

This research project is organized in five chapters. Chapter one is the introduction which includes the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, assumption of the study, limitation of the study, delimitations of the study and definition of significant terms. Chapter two of the study consists of the literature review with information from other articles which are relevant to the researcher. Chapter three entails the research methodology used in the research. Chapter four focuses on data analysis and data will be tabulated while chapter five gives a summary of research findings, conclusions, recommendations and area for further study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The chapter provides an extensive literature and research related to factors affecting implementation of e-procurement in the public sectors focusing on Ministry of Water and Irrigation. The chapter is thus structured into theoretical, conceptual and empirical review. The study also presents the research gap the chapter seeks to fulfill.

2.2 Concept of e-procurement implementation

Over the past few years, there has been increasing emphasis on e- procurement from the European Commission and Office of the Government Commerce, starting with the option for online tender submission, followed by online Official Journal of the European Union (OJEU) notices. The impetuses for contracting authorities to utilize techniques incorporate quicker delicate procedures and more streamlined acquirement, especially for clear tenders where up close and personal contact with bidders is non-vital. Today, e-Procurement inside the UK government is perceived as one of the principle zones in the Government-to-Business (G2B) classification (Turban and King, 2006). UK National e-Procurement Project Report (2011) takes note of that e-Procurement as an instrument has upgraded acquirement exercises, including sourcing, requesting, dispatching, receipting and making installments for the entire range of a power's exercises. In the study on e-obtainment adjustment in Greece (Andrea and Margaret, 2011) called attention to that e-acquirement procedure, re-building of acquisition procedures and administration of desires were enter achievement calculates an e-acquirement adjustment methodology. Their decision was that usage must be accomplished as they say change where innovative arrangements apply to controls and strategies.

Lee (2008) did a study concerning the usage of e-acquirement methodology in the Irish open area and found that central changes are required in the general population part obtainment environment to accomplish the advantages of the e-Procurement approach. Lee, likewise found that the key issues can be assembled into various zones, these are: acquisition structure and practices, authoritative plan, E-acquirement innovation system,

and the legitimate and financial environment. Among these issues, a solid and proficient hierarchical perspective can be acknowledged as an extremely basic achievement calculates for productive e-Government acquirement selection. In a nation like Turkey, colossal foundation speculation is a typical practice. Notwithstanding, since these speculations are vigorously influenced by fleeting political concerns and voter impact, ventures work more often than not at imperfect rate. Seldom do you locate an arranged and deliberate approach. All things being equal, as the economy develops and worldwide exchange rises, organizations in Turkey encounter significant worldwide rivalry. This requires presentation of effective instruments like e-Procurement. Such interest in e-Procurement is regularly ceaseless.

Kabaj (2008) states that a proficient open acquisition framework is crucial to the progression of African nations economies and is a solid articulation of their national responsibility to making the most ideal utilization of open assets. Similarly, Kakwezi and Nyeko (2010) contends that the acquisition bureaus of open substances in Uganda are confronted with the issue of not having enough data about the obtainment method, its information sources, yields, asset utilization and comes about, and are in this way not able to decide their proficiency and viability. This infers such an issue requires foundation of clear acquirement rules, methodology and execution benchmarks.

Kenyan government has perceived the appropriation of ICT in administration conveyance to people in general and resident all in all. This has picked up force with the present Government organization. Existing writing uncovers that various associations in Kenya have effectively embraced the utilization of e-acquisition innovation. Gitahi (2011) refered to the case of Nation Media Group which through their advanced stage normally known as N-Soko, has empowered their customers to buy items on the web. There is however developing confirmation of the moderate take-up of the innovation in spite of the advantages that e-acquirement offers (Arasa and Achuora, 2012). In general society area, a few models have been attempted by various open elements to actualize e-

acquirement. These are dealer driven, purchaser driven, e-commercial centers or outsider oversaw models.

The Government of Kenya's financial outline for 2013-2017, notes that the ICT part is imperative to the acknowledgment of the required change in efficiency and strengthening of the citizenry. Subsequently a national ICT strategy has been created to empower and direct the development of the nation's ICT segment and coordinate the division into Kenya's advancement, help in making of employments, enhance efficiency, increment access to proficient and taxpayer driven organizations, particularly for hindered people and groups, and permit groups to settle on educated choices about nearby asset utilize (Government of Kenya, 2011)

2.3 Top Management support and implementation of e-procurement

The executive management team is in charge of setting the vision and objectives, achieving aggregate duty for change in process and hierarchical structures, and planning the arrangements and techniques important to set up an e-Procurement activity (OECD, 2011). In the event that the e-acquirement framework does not have the full support of the top management team, there is each explanation behind it to fall flat. It is critical to ensure that the top management has given full support for the execution of e-acquisition. Extensive consideration and support ought to be given by senior management to guarantee that the acquirement change has been surely known in the office (Basheka, 2011).

Ngobe (2011) utilized the term best management to characterize define convictions about online business activities in firms and cooperation in those activities. The consequences of quantitative research by Ngobe (2011) demonstrate that top administration title emphatically impacts degree of hierarchical absorption of Web innovations in internet business techniques and exercises. Management profitability and key choice guides are characterized in the article of Scupola (2010) as vital considers online business appropriation in associations. Management efficiency alludes to supervisors' discernment

that internet business gives better access to data, helps in the administration of time, and enhances correspondence among directors.

Good management can empower change by imparting and strengthening values through a verbalized vision for the association. Best management support is basic for making a strong atmosphere for the reception of new innovations. Best management bolster hierarchical adjustment and preparing of representatives are cases of issues for the effective usage of association IT framework (Eakin, 2010). Imbuye (2013) found that top management support to be one of the best indicators of association reception of Information System advancements. Beat management can fortify change by conveying and strengthening.

As per Khanapuri, Nayak, Soni, Sharma and Soni (2006) best directors these days constantly stress to adjust to the Internet applications; they regularly encourage representatives to be delicate to contenders' drives as to e-business; best chiefs demand that their workers must bring a greater amount of their business hones online with a specific end goal to meet clients' future needs; they will attempt to give the important assets to actualizing e-business hones; they frequently inform representatives to keep track regarding the most recent advancements in Internet innovation and Internet related business rehearses, and consolidating e-business hones in organization. Best supervisor accentuation on e-business, would encourage execution picks up from e-business reception. Supply chiefs and interior partners can without much of a stretch drive client reception and framework consistence through noteworthy change management endeavors and progressing instruction of end clients. This is a result of the connections made by providers and organizations who they supply to and those that make or supply to them. Providers thusly turn out to be profoundly dynamic inner advertisers of e-obtainment frameworks in view of a few communications particularly on account of open acquisition. Providers if included right on time in e-acquirement activities are in this way ready to assume a dynamic part in the process' refinement and endeavors in change administration (Malela, 2010). Specific advantages of e-acquisition in the general

population area are thought to incorporate more prominent straightforwardness in acquirement through electronic distributing of delicate notification and contract grants. This thusly is probably going to upgrade responsibility and decrease the occurrences of defilement. At the point when building up a business case for embracing e-obtainment, it is imperative to evaluate the gauge advantages and expenses connected with the procedure or procedures to be robotized keeping in mind the end goal to comprehend the likely results of e-acquirement execution or upgrade (Uyarra and Flanagan, 2010).

Senior administrators have generally seen IT as a back office work that is a "vital cost" of working together, with no key ramifications. In the late years senior supervisors are currently looking IT as a vital asset and key empowering agent of development. All through arrangements the acquisition chief can facilitate believably ensure the provider a level of incite installment, which was impractical preceding e-obtainment, (Eakin, 2010).

2.4 Information technology infrastructure and implementation of e-procurement.

Technological resources have been consistently identified as an important factor for successful information systems adoption. Technologies have changed and redefined the way organizations and government corporations operate. Organizations adopt new technologies to improve the efficiency and effectiveness of various work processes. Unfortunately, many technology-based products and services never reach their full potential, and some are simply rejected (Uyarra & Flanagan, 2010). Failed investments in technology may not only cause financial losses, but also lead to dissatisfaction among employees (Arasa & Achuora, 2012). Hence, explaining and predicting user adoption of new technology is important. New technology adoption by service employees is affected by various factors. Some of them include; technology readiness, technology integration and interoperability with the existing IT systems and the IT security applications. Research by Kakwezi and Nyeko (2010) pointed that technology readiness (TR) is a key factor in the adoption of innovative products and services. TR refers to the propensity to adopt and embrace technology in home life or work. It reflects a set of beliefs about technology and is not an indicator of competence. TR is highly predictive of the speed of

technology adoption and level of usage of technology in consumer households and organizations. TR is multifaceted, with some factors being contributors and some factors behind inhibitors.

According to Mose, Njihia and Magutu (2013), private and public sector organizations have been utilizing information technology (IT) systems to streamline and automate their purchasing and other processes over the past years. Chaffey (2009) there have been many attempts to automate the process of procurement for the buyer using electronic procurement systems (EPS), workflow systems and links with suppliers through electronic data interchange (EDI). Further, not all the technology is in place yet to enable the Government to take full advantage of internet commerce (PPOA, 2013). The PPOA in 2013 identified issues in identification of parties in a transaction, synchronization, confidentiality, data integrity and bandwidth as the major considerations that the government had to make before taking full advantage of the benefits of e-procurement.

Similarly, drawing attention to the fact that the effects of ICT work in favor of both market and hierarchies, Scupola (2010) argue that due to the complexity of business activities and interdependence between various factors determining the organizational form, the final outcome might not depend solely on ICT. However, other studies indicate that ICT leads to a change in firm boundaries and encourages firms to depend less on hierarchies and conduct more transactions at arm's length. The arguments of Malone et al., (1987) are supported by Hitt et al, (1999) who found that, overall, increased use of ICT was associated with substantial decreases in vertical integration. Examining the relationship between firm size and ICT investment, Enders (2010) found evidence that increased ICT expenditures were correlated with decreasing firm size.

Uyarra and Flanagan (2010) argue that Internet-based e-procurement systems and B2B electronic market solutions need to be compatible to the greatest possible extent with the existing technologies, to have a reasonable chance to be widely adopted in the marketplace. Andrea and Margaret (2011) identify internal business risks arguing that

implementing an e-procurement solution not only requires that the system itself successfully performs the purchasing process, but it integrates with the existing information infrastructure, in addition companies are uncertain about having the appropriate resources to successfully implement an e-procurement solution. For E-procurement technologies to succeed, suppliers must be accessible via the Internet and must provide sufficient catalogue choices to satisfy the requirements of their customers. Suppliers, especially in low margin industries, may be hesitator even unable to meet such demands without guarantees of future revenue streams (Arnold & Essig, 2012). Arnold and Essig (2012) also identify technology risks in e-procurement explaining that companies also fear the lack of a widely accepted standard and a clear understanding of which e- procurement technologies best suit the needs of each company. The significance of this risk factor seems to suggest the need for clear and open standards that would facilitate inter-organization e-procurement technologies. Without widely accepted standards for coding, technical, and process specifications, e-procurement technology adoption will be slow and fail to deliver the benefits as excepted.

E-commerce technologies have great potential to influence the direction of the productivity in an organization; however the willingness to adopt is determined by a number of factors, among them, reduction of transaction costs, improvement of customer service quality, defensive reaction to competitor's adoption, requirement by customers that their suppliers link their system as a condition for doing business (Uyarra & Flanagan, 2010). Bailey, Farmer, Crocker, Jessop and Jones (2012) argues that new technologies lower searching and filtering costs and by increasing the number of sourcing options companies can therefore intensify the competition between suppliers and increase their bargaining position. e-procurement can therefore enable a company lower search and evaluation costs as well as increase the number of potential suppliers through e-informing.

E-commerce as one of the innovations provided for by the internet has been widely accepted by different sectors worldwide and is therefore not a new concept. e-

procurement applications focus on creating efficiencies with the goal being to make the traditional purchasing procedures more efficient and cost effective (Davila, Gupta & Palmer, 2013). Bikshapathi and Raghuveer (2011) noted the development and implementation of electronic commerce business models such as a procurement portal in organizations in a challenge that goods beyond mere technological functionality (Davila, et al. 2013). Adopting of a new technology needs skill and knowledge to operate in the organizations and most organizations do not implement because organizations' employees are not familiar with new technology. Empirical evidence identifies that organization whose employees have the necessary skills and technical knowledge are more likely to implement e- Government applications (Lin and Lee, 2005).

Laudon, Laudon and Dass (2011) note that the use of ICT in a business is associated with less vertical integrations meaning that a business is able to conduct more transactions without the need to increasing or invest more in physical capacity. The concept of e-procurement can therefore be used to improve transactions and reduce costs in a business. Puschmann and Alt (2015) indicate that various cost reductions and benefits have been already identified in the use of e-procurement. The concept of e-commerce in which e-procurement has a central function has become an avenue for improving effectiveness through cost savings and productivity improvements in business transactions that involve the purchase of goods, services and works (Archer, 2012). e-procurement solutions have widened the range of Business to Business (B2B) as well as Business to Government (B2G) transactions by introducing innovative processes in public administration based on information and communication technologies (Baily, 2010). The move to e-procurement that is supported by internet technologies has been gradual.

Croom and Johnston (2013) indicates that the public sector undertakes e-procurement initiatives because it is believed that certain cost reductions and benefits including those related to public policy imperatives will arise without the considerations of the implications. The items involved in public procurement range from simple items or services such as office clips or cleaning services to large commercial projects such as the

development of infrastructure including roads, military equipment and airstrips. With government as a service provider, a basic measure of a successful or failed public e-procurement will be manifested through quality and magnitude of the services it provides.

2.5 Staff training and implementation of e-procurement

Armstrong (2000) pointed that training is the formal and systematic modification of behavior through learning which occurs as result of education instruction development and planned experience. The fundamental aim of training is to help the organization achieve its purpose by adding value to its key resources the people it employs. Training means investing in people to enable them to make the best use of their natural abilities. The objectives of training are to develop the skills and competence of employees and improve their performance, help people to grow within the organization in order that as far as possible in new job as appointment transfer or promote and ensure that they become fully competent as quickly and economically as possible. Effective training can minimize learning costs, improve individual, terms and co-operate performance in terms of output, quality speed and overall productivity. To improve operational flexibility by extending the shape of skills possessed by employees (multi-skilling) increases the commitment of employees by encouraging them to identify with the mission and objectives of the organization and to provide high level of services to customer.

According to Dessler (2000) it is important to evaluate training in order to assess its effectiveness in producing the learning outcomes specified when the training intervention was planned and to indicate where improvements or changes are required to make the training eve more effective. It is at the planning stage that the basis upon which each category of training is to be evaluated should be determined. At the same time, it is necessary to consider how the information required evaluating events. Should be obtained and analyzed. The process of evaluating training has been defined by Habun (1974) as "Any attempt to obtain information (feedback) on the effects of a training programme and to assess the value of the training in the light of that information". Evaluation leads to

control which means deciding whether or not the training was worthwhile. Preferably in cost benefit terms) and what improvement are required to make it even more cost effective.

Due to the increase of technological advancement constant training on the skills to handle all kinds of problems in communication to achieve effective communication is essential. For example until recently office switchboard operator all the individual telephone was received and make calls controlled telephone system. But recent microelectronics has been introduced and so increased commercial competition. And so employees have to train to achieve the goal of organization. Training of staff plays quite an important role in the organization. It comprises of monitoring and planning, welcoming change and equipping people to adapt in any organization. Training ensures that an organization has people with the correct mix of attributes which is achieved by the provision of appropriate learning opportunities and enabling them to reform to the highest levels of quality and service (Croom & Johnston, 2013).

According to Davila, Gupta and Palmer (2012) training is the process of increasing knowledge and skills of an employee for doing particular jobs. It is an organized activity designed to create a change in the thinking and behavior of people and to enable them to carry out their jobs in a more efficient manner (Gunasekaran & Ngai, 2010). Training is the acquisition of the technology which permits employees to perform up to standard. Thus training may be defined as an experience, a discipline or a regimen which causes people to acquire new pre-determined behaviors. One of the most powerful benefits of collecting satisfaction data is the ability to analyze service down to the technician level. This gives companies the ability to offer targeted training to employees based on areas needing improvement.

Handling the customer entails everything from setting customer expectations properly to always looking at the situation from the customer's point of view. Companies that collect customer satisfaction data have come up with very creative ways to train and motivate

employees using this information. This relatively effortless act can be a catalyst to train and motivate employees to improve service delivery. Training and awarding top performing service departments with things as simple as a trophy or a fun outing can create enthusiasm and teamwork. Allocating cash bonuses based on customer service satisfaction results achieved through meeting various training targets can naturally increase employee satisfaction levels, suggesting that the higher the satisfaction scores, the bigger the bonuses (Kauffman & Kriebel, 2010).

Employees respond to positive feedback, and sharing positive customer comments and Customer Service Improvement Program satisfaction feedback with employees can enhance employee satisfaction levels. If positioned correctly with rewards for outstanding performance, comparing satisfaction results achieved by various training programs between different groups can create a natural competitiveness among peers and elevate service levels. It can also help employees better understand the importance of their jobs and how their individual performance correlates to higher customer satisfaction levels. To achieve productivity in any sector including the security sector, employees should be analyzed to determine their training needs and the relevant training offered to enable them perform as required (Talluri, Chung & Narasimhan, 2013).

2.6 Supplier capacity and implementation of e-procurement

Given the benefits of e-procurement, there still exist many organizations that have not effectively embraced the practice (Arasa & Achuora, 2012). Kinyanjui and McCormick (2002) note that Kenya has a wide range of organizations struggling to adopt information and communication technology in their procurement functions. According to Wilson (2012), e-procurement is the amalgamation of sales and purchasing business models and calls for differentiation based on application and functions.

The first application is the buy-side procurement which refers to an organization using electronic systems to purchase goods, such as office stationary, from contracted suppliers. These suppliers are also using e-procurement systems for management of all processes

relating to purchase. This is simply coalescing of the corporate procurement portals and business to employees (B2E) applications. The second application is sell-side procurement. This model is used to describe how one supplier sells to a number of buying organizations using electronic systems such as, using e-procurement systems and-commerce technology. Sell-side procurement model is often used extensively in B2C (business to consumers). Well-designed sell-side solution is usually offering a higher level of customizations for each buyer than their B2C retail counterparts. This type of model attracts big supplier firms that have a stronger position in relationship with their buyers. The last application is e-marketplace and trading hubs which is a combination of industry consortium and the trading exchanges. The marketplace model brings together many different buying and selling organizations in one trading community. The most popular e-marketplace function is auction used for variety of product category. This type of model often helps to increase collaboration between companies in a single industry sector or providing the opportunity of e-procurement to companies, who would normally be too small to benefit (Parida & Sophonthummapharn, 2011).

Klakota (2011) indicates that e-purchasing adoption can be influenced by a large firm size and purchasing workforce. The rationale is that a buying firm with a larger purchasing unit is more likely to adopt e-purchasing, as it has greater information processing capacity, needs and organizational power than smaller firms. Moreover, a buying firm with a large purchasing unit is also more likely to possess the financial, skill resources and bargaining power to achieve the economies of scale required. On the other hand, small scale suppliers also lack in ICT knowledge and technical skills. Walczuch, Van Braven and Lundgren (2010) attributed the failure of European small and medium enterprises (SMEs) to utilize e-commerce to their lack of e-commerce and Internet knowledge. Because of the obstacles in developing the necessary skills and technical knowledge, many firms postpone ICT adoption until they gain sufficient internal expertise.

Khanapuri (2011) assert that there are a number of requirements relating to the implementation of e-procurement system. They include technology, objectives, information, staffing and skills. The requirements make the adoption process to face a number of challenges such as Compatibility, Integration, Adoption and regular use by employees and lack of capacity by small suppliers. Companies require investing in a good IT system with access to the web and integration to the customers. In addition the staff handling the system will require to be empowered. According to World Bank (2013) the cost of purchasing e-procurement software can be huge and may be prohibitively expensive for smaller organizations. They must consider not only the price of the software itself but other costs associated with the system and its implementation. Those additional costs include networking infrastructure, information technology hardware and software, application design, development and implementation, training, and maintenance of equipment. There is also the time required for employees to learn the new system.

2.7 Theoretical framework

Diffusion of Innovation (DOI) theory, developed by Rogers in 1962, is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously (i.e., purchase or use a new product, acquire and perform a new behavior, etc.). The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible.

Adoption of new idea, behavior or product (innovation) does not happen simultaneously in a social system rather it is a process whereby some people are more apt to adopt the innovation than others. Rogers (1962) stated that the diffusion of innovation is done through five stages: awareness building, attitude formation, adoption, adaptation, and appropriation. He also divided the adopters of any new technology to five categories, that

is, innovators, early adopters, early majority, late majority, and laggards. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. while the majority of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population. When promoting an innovation, there are different strategies used to appeal to the different adopter categories. One intermediary is the change agent, someone who encourages an opinion leader to adopt or reject an innovation (Wu, 2009).

The Innovation diffusion theory is a model grounded in business study. Since 1940's the social scientists coined the terms diffusion and diffusion theory (Dean, 2004). This theory provides a frame work with which one can make predictions for the time period that is necessary for a technology to be accepted. Constructs are the characteristics of the new technology, the communication networks and the characteristics of the adopters. Innovation diffusion is seen as a set of four basic elements: the innovation, the time, the communication process and the social system. The concept of a new idea is passed from one member of a social system to another Klakota (2010) redefined a number of constructs for use to examine individual technology acceptance such as relative advantage, ease of use, image, compatibility and results demonstrability.

2.8 Conceptual framework

Mugenda, (2008) defines conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to Young (2009) conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables. In this study, the dependent variable is e-procurement implementation while the independent variables are top management commitment, information technology infrastructure, staff training and suppliers' capacity.

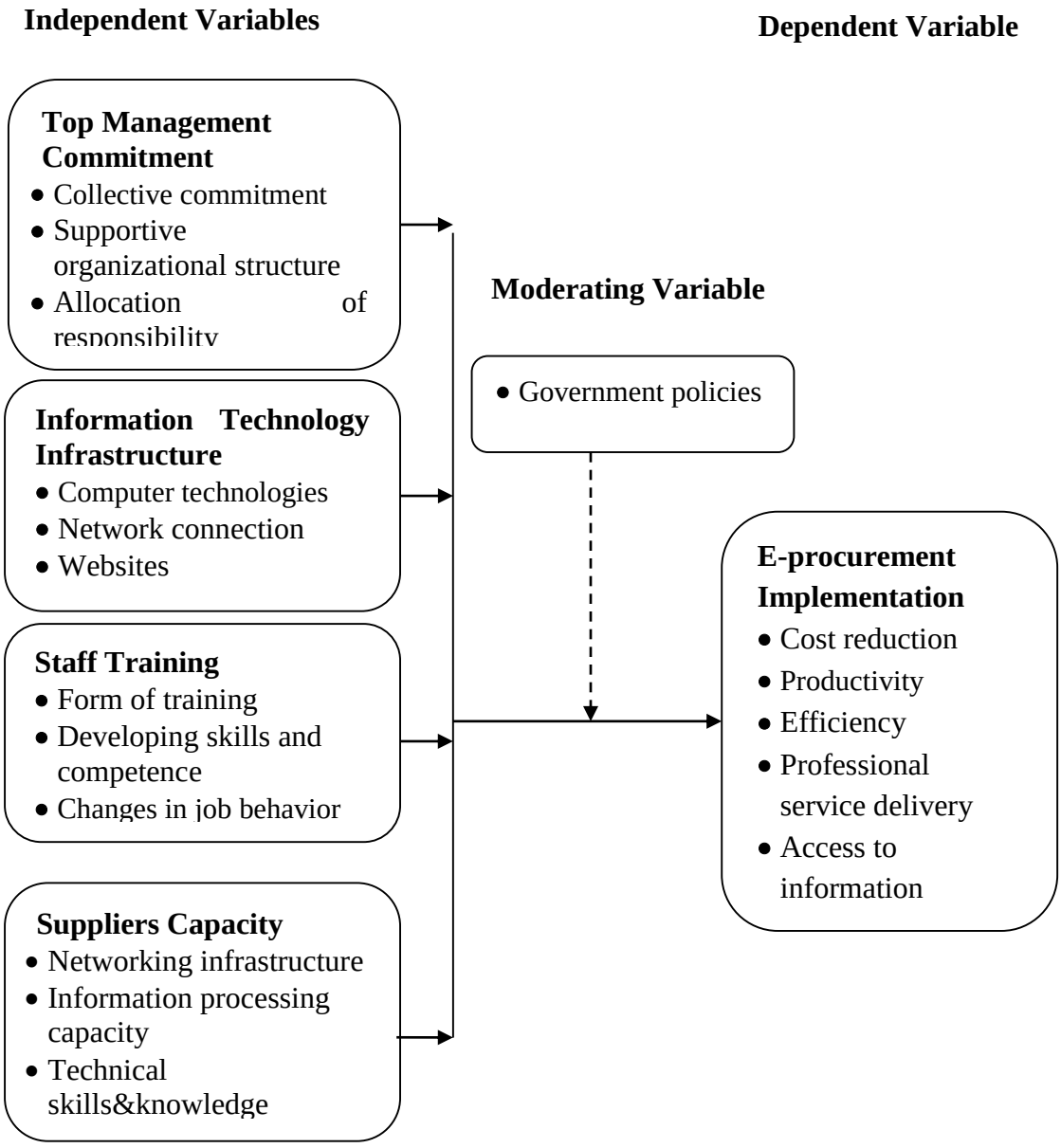

Figure 1: Conceptual framework

2.9 Summary and research gaps

There have been various developments in public procurement and disposal which had for long been challenged by a lack of a clear legal framework and inefficiencies in the entire process of procurement. A process of continuous reforms in the sector since the late 90's has resulted in a better regulated public process through the Public Procurement and Disposal Act (2005), The Public Procurement and Disposal Regulations (2013) and the

Suppliers Practitioners Management Act (2007). The regulations have created several autonomous bodies that also form part of the developments of the public procurement system in Kenya over the years. Part of the developments in the government procurement system has been the adoption of the Integrated Financial Management Information System (IFMIS) since the year 2005 as its sole accounting and resource management system. The government uses IFMIS for several initiatives including Electronic Payment System, e-Government Receipt Accounting System, State Public Procurement Portal and Integrated Human Resource Management system among others.

According to Government of Kenya (2011), e-procurement was one of the medium term objectives which was to be implemented by June 2007, but the process has been very slow and Findings show that most of the procurement processes in public sector are still manual with the internet only being used for e-mails and web browsing (PPOA, 2013). This slowed adoption of e procurement in the public sector raises concern as to what challenges face adoption of e procurement in Kenya. If a country is weak in one or some of these infrastructures, then e-Procurement activities are destined to fail. Regardless of the recognition of value of e- procurement, it is clear from the study by Bikshapathi and Raghuveer (2011) that the adoption of e- procurement is still very low. It is against this background that the study seeks to find out factors affecting implementation of e-procurement in the public sectors focusing on Ministry of Water and Irrigation.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter presents the methodology, which was used to carry out the study. It further describes the type and source of data, the target population and sampling methods and the techniques that was used to select the sample size. It also describes how data will be collected and analyzed. The suitable methodology gave the guidelines for information gathering, analysis and presentation.

3.2 Research design
Orodho (2003) defines a research design as the scheme, outline or plan that is used to generate answers to research problems. This research problem was studied through the use of a descriptive research design. According to Cooper and Schindler (2003) a descriptive study is concerned with finding out the what, where and how of a phenomenon. This study therefore was able to generalize the findings to all departments in the Ministry involved in procurement practices. Thus, this approach is suitable for this study, since the study intended to collect comprehensive information through descriptions which was helpful for identifying variables (Mellenbergh, 2008).

3.3 Target population
According to Mugenda and Mugenda (2003) population refers to an entire group of individuals, events or objects having a common observable characteristic. The population in this study was the Ministry of Water and Irrigation. The target population of this study was the 142 e-procurement users in various departments under the Ministry of Water and Irrigation headquartered in Nairobi (Ministry of Water and Irrigation records, 2016). Mugenda and Mugenda (2003) explained that the target population should have observable characteristics to which the researcher intends to generalize the result of the study. This definition assumes that the population is not homogeneous.

3.4 Sample size and sampling technique

The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample was selected (Cooper & Schindler, 2003). Basing the determination of sample size with Krejcie and Morgan (1970) table (appendix III), a sample size of 103 respondents was targeted. The study employed stratified random sampling technique to select a sample size of 103 respondents from a total of 142 from the specific departments within the Ministry headquartered in Nairobi. Mugenda and Mugenda (2003) states that for descriptive studies 10%-40% of the accessible population is a representative sample.

Table 3.1 Sample size

	Frequency	**Sampling ratio**	**Sample size**
Procurement Officers	67	0.73	49
ICT Officers	36	0.73	26
HRM	21	0.73	15
Administrators	18	0.73	13
Total	**142**		**103**

3.5 Research instrument

The study employed a questionnaire to collect primary data. Questionnaires are appropriate for the study since they collect information that was not directly be observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals (Mellenbergh, 2008). The questionnaire comprised of both open and close-ended questions. Franker (2006) stated that a questionnaire is useful in obtaining objective data because participants are not manipulated in any way by the researcher. Further, a questionnaire has the added advantage of being less costly and using less time as an instrument of data collection. The data instrument addressed the four research objectives while it was sub-divided into two sections. The first section of the questionnaire enquired general information about the respondents, while the next

sections sought to answer the four objectives, that is, top management commitment, information technology infrastructure, staff training and suppliers' capacity.

3.5.1 Pilot testing of research instrument

Cooper and Schindler (2003) indicated that a pilot test is conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample. The pilot testing was conducted using the questionnaire on 10 staff in the same institution. The rule of thumb is that 10% of the sample should constitute the pilot test (Cooper & Schilder, 2003). The proposed pilot test was within the recommendation. The pilot testing group was selected through random sampling. The purpose of the pilot testing was to establish the validity and reliability of the research instruments and hence enhance face validity (Joppe, 2000).

3.5.2 Validity of research instruments

Validity of the Research instrument is the quality of a data gathering instrument, which enables it to measure what it is supposed to measure. Creswell (2008) notes that validity is about whether one can draw meaningful and useful inferences from scores on the instrument. To ensure content validity, the instrument was reviewed by the research supervisors and other research experts. Content validity yields a logical judgment as to whether the instrument covers what it is supposed to cover. Content validity ensures that all respondents understand the items on the questionnaire similarly to avoid misunderstanding.

3.5.3 Reliability of research instruments

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trial. Reliability answers the question "Are scores stable over time when the instrument is administered a second time" (Creswell, 2003). To ensure reliability, the researcher used split-half technique to calculate reliability coefficient (Spearman-Brown coefficient formulae) which was within the recommended reliability coefficient of between 0.7-1 (Nachmias & Nachmias 1996).

$$\text{Reliabity of the overall test } = \frac{2 \text{ x reliability of } ½ \text{ tests}}{1 + \text{ reliabity of } ½ \text{ tests}}$$

This involved scoring two-halves of the tests separately for each person and then calculating a correlation coefficient for the two sets of scores. The responses were split into the odd numbers for one set and the even numbers for the other set of items. The reliability analysis is presented in Table 3.2.

Table 3.2: Reliability Analysis

Variable	Reliability coefficient	Comments
Top Management Support	0.889	Reliable
Information Technology Infrastructure	0.830	Reliable
Staff Training	0.905	Reliable
Suppliers Capacity	0.832	Reliable

The table shows that staff training had the highest reliability (α= 0.905), followed by top management support (α=0.889), suppliers capacity (α=0.832) and finally information technology infrastructure (α=0.830) this illustrates that all the variables were reliable as their reliability values exceeded the prescribed threshold of 0.7.

3.6 Data collection procedures

After consent was given by the University to collect data, the researcher coordinated the data collection process after seeking permission from the Ministry. The researcher engaged three research assistants who assisted in data collection. The research assistants were taken through training to clearly understand the research instruments, purpose of the study and ethics of research. The researcher and research assistants administered the questionnaires to the respondents face to face.

3.7 Data analysis

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The study generated both qualitative and quantitative data. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 21.0) and analyzed using descriptive statistics. As Martin

and Acuna (2002) observed SPSS is able to handle large amounts of data, and given its wide spectrum of statistical procedures purposefully designed for social sciences, it is also quite efficient. Qualitative data was analyzed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories. In addition, the researcher used multiple regression analysis to establish the strength of the relationship between the dependent and independent variables. The regression equation is:

$Y= \beta 0+\beta_1 Tmc_1+\beta_2 ITi_2+\beta_3 St_3+\beta_4 Sc_4+\alpha$

Where: **Y** is the dependent variable (implementation of e-procurement),

$\beta 0$ is the regression coefficient,

β_1, β_2 β_3 and $\beta 4$ are the slopes of the regression equation,

Tmc_1 is the Top management support

ITi_2 is the Information technology infrastructure,

St_3 is staff training,

$Sc_4$is Suppliers capacity

α is an error term normally distributed about a mean of 0 and for purpose of computation, the α is assumed to be 0.

3.8 Ethical considerations

While conducting the study, the researcher ensured that research ethics are observed. Participation in the study was voluntary. Privacy and confidentiality was observed. The objectives of the study were explained to the respondents with an assurance that the data provided was used for academic purpose only.

3.9 Operational definition of variables

The operationalization of variables is as shown in table 3 below;

Table 3.3 Operationalization of variables

Objectives	**Independent Variables**	**Indicators**	**Measurement Scale**	**Type of analysis**	**Tools of analysis**
To influence of top management commitment on implementation of e-procurement in the Ministry of Water and Irrigation	Top management commitment	Collective commitment	Ordinal	Descriptive Regression	Frequency distribution tables, Tabulation & percentages
		Supportive organizational structure	Ordinal		
		Allocation of responsibility	Ordinal		
		Monitoring processes	Ordinal		
		Set goals, strategies and baseline	Ordinal		
Objectives	**Independent Variables**	**Indicators**	**Measurement Scale**	**Type of analysis**	**Tools of analysis**
To scrutinize the the influence of information technology infrastructure on implementation of e-	Information technology infrastructure	Computer technologies	Ordinal	Regression	Frequency distribution tables, Tabulation & percentages
		Information security risks	Ordinal		
		Rapid technology changes	Ordinal		
		Networking infrastructure	Ordinal		

procurement in the Ministry of Water and Irrigation					
Objectives	**Independent Variables**	**Indicators**	**Measurement Scale**	**Type of analysis**	**Tools of analysis**
To assess how staff training influences implementation of e-procurement in the Ministry of Water and Irrigation	Staff training	Operational flexibility	Ordinal	Regression	Frequency distribution tables & percentages
		Monitoring and planning	Ordinal		
		Changes in job behavior	Ordinal		
		Developing skills and competence	Ordinal		
		Form of training	Ordinal		
Objectives	**Independent Variables**	**Indicators**	**Measurement Scale**	**Type of analysis**	**Tools of analysis**
To determine the influence of supplier capacity on implementation of e-procurement in the	Supplier capacity	Adoption of ICT	Nominal	Regression	Frequency distribution tables, Tabulation & percentages
		Supplier Involvement	Nominal		
		Purchasing Workforce	Nominal		
		Information Processing Capacity	Nominal		
		Technical Skills & Knowledge	Ordinal		

Ministry of Water and Irrigation		Networking Infrastructure	Ordinal		
Objectives	**dependent Variable**	**Indicators**	**Measurement Scale**	**Type of analysis**	**Tools of analysis**
	Implementation of e-procurement	Cost reduction	Ordinal	Regression	Frequency distribution tables, Tabulation & percentages
		Improved efficiency	Ordinal		
		Improve productivity	Ordinal		
		• Cost reduction	Ordinal		
		• Productivity	Nominal		
		• Efficiency	Ordinal		
		• Professional service delivery	Ordinal		
		• Access to information	Ordinal		

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATIONS

4.1 Introduction

This chapter presents data analysis, presentation and interpretation. The chapter presents the background information of the respondents, findings of the analysis based on the objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study.

4.2: Response rate

The response rate is presented in Table 4.1

Table 4.1: Response rate

	Questionnaires Administered	Questionnaires filled & Returned	Percentage
Respondents	103	89	86.4

The study targeted a sample size of 103 respondents from which 89 filled in and returned the questionnaires making a response rate of 86.4%. This response rate was satisfactory to make conclusions for the study as it acted as a representative. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting.

4.3 Background information of the respondents

This section investigates on responders work department, Position, level of education and period of service.

4.3.1 Distribution of respondents by departments

Respondents were requested to indicate their department they are working in. Results are analysed in Table 4.2

Table 4.2: Distribution of respondents by departments

Department	Frequency	Percentage
Procurement	44	49.4
Human Resource	23	25.8
ICT	12	13.5
Administration	10	11.2
Total	**89**	**100**

Results presented in Table 4.2 show that 49.4% of the respondents worked in procurement department as procurement officers 25.8% of the respondents worked as human resource officers in HR department 13.5% of the respondents worked as ICT officers in ICT department while 11.2% of the respondents worked as administrators in administration department. This implies that respondents of various departments were fairly engaged in this study.

4.3.2 Respondents position in the Department

The study sought to establish the respondents position in the department, results are analysed in table 4. 3

Table 4.3: Respondents position in the Department

Job designation	Frequency	Percentage
Unit Head	5	5.6
Departmental Head	4	4.5
Officers	80	89.9
Total	**89**	**100**

Results presented in Table 4.3. show that 89.9% of the respondents worked as officers in respective departments, 5.6% of the respondents worked as unit heads while 4.5 % of the respondents worked as departmental heads, this implies that respondents held various position including positions of departmental head and unit head.

4.3.3 Level of education of the respondents

The study sought to establish the respondent's highest level of education attained and therefore requested the respondents to indicate their highest level of education achieved. The findings on respondents' level of education are as shown in Table 4.4.

Table 4.4: Level of education

Level of education	Frequency	Percentage
Post Graduate	34	38.2
Undergraduate	44	49.4
Diploma	11	12.4
Total	**89**	**100**

The study revealed that most of the respondents as shown by 49.4% of the respondents held bachelor's degree, 38.2% of the respondents were holders of post graduate degrees while 12.4 % of the respondents held college diploma certificates. This implies that, respondents were well educated which means that they were in a position to respond to research questions with ease.

4.3.4 Respondents work experience

The study sought to determine the period which the respondent has served for. The findings on respondent's period of service are as shown in Table 4.5

Table 4.5 : Respondents work experience

Period of service	Frequency	Percentage
1 to 5 years	8	9.0
6 to 10 years	12	13.5
11 to 15 years	45	50.6
16 years and above	24	27.0
Total	**89**	**100**

The study sought to determine the period of time which the respondent had worked in the Ministry, from the research findings, 50.6 % of the respondent indicate to have worked in

the Ministry for a period of 11 to 15 years , 27.0 % of the respondent indicate to have worked in the Ministry for a period 16 years and above, 13.5% of the respondent indicate to have worked in the Ministry for a period of 6 to 10 years whereas 9.0% of the respondent indicate to have worked in the Ministry for a period of 1 to 5 years. This is an indication majority of the respondents had been in the working in the Ministry for a considerable period of time and thus they were in a position to give credible information relating to this study.

4.4 Implementation of e-procurement

The study sought to determine the extent to which implementation of e-procurement influence the performance in the Ministry of Water and Irrigation. The respondents were asked to rate their level of agreement to extent to which implementation of e-procurement influences the performance. Result are analysed in Table 4.6.

Table 4.6: Implementation of e-procurement

Statements on Implementation of e-procurement	Mean	Std deviation
Implementation of e-procurement promote cost reduction in the Ministry	4.07	0.97
Implementation of e-Procurement promotes improved efficiency in the Ministry	4.24	0.91
Implementation of e-Procurement promotes improve productivity in the Ministry	4.33	0.64
Implementation of e-Procurement promotes access to information in the Ministry	3.97	0.94
Implementation of e-Procurement influences professional services delivery in the Ministry	3.64	0.48

From the research findings majority of the respondents agreed to a great extent that; Implementation of e-procurement promotes improve productivity in the Ministry (mean = 4.33, std deviation = 0.64), implementation of e-procurement promotes improved efficiency in the Ministry (mean = 4.24, std deviation =0.91) implementation of e-procurement promote cost reduction in the Ministry (mean = 4.07, std deviation = 0.97) implementation of e-procurement promotes access to information in the Ministry (mean

=3.97, std deviation =0.94) and that implementation of e-procurement influence professional services delivery in the Ministry(mean =3.64, std deviation =0.48).

4.5 Influence of top management commitment on implementation of e-procurement

The study sought to determine the extent to which top management commitment influence e-procurement implementation in the government Ministry. The respondents were asked to rate their level of agreement with the 6 items which were indicators of top management commitment to implementation of e-procurement. Result are analysed in Table 4.7

Table 4.7: Top Management commitment

Statements on top management commitment	Mean	Std deviation
Collective commitment influence implementation of e-procurement in Ministry	4.40	0.49
Supportive organizational structure influence implementation of e-procurement in the Ministry	4.39	0.47
Allocation of responsibility influence implementation of e-procurement in the Ministry	4.15	0.20
Monitoring processes influence implementation of e-procurement in Ministry	4.30	0.58
Set goals, strategies and baseline influence implementation of e-procurement in the Ministry	4.48	0.50
Coordination of activities influence implementation of e-procurement in the Ministry	4.27	0.55

From the research findings majority of the respondents agreed to a great extent that; collective commitment by top management influence implementation ofe-procurement in Ministry (mean =4.40, std deviation = 0.49), supportive organizational structure influence implementation of e-procurement in Ministry(mean =4.39, std deviation =0.47), monitoring processes influence implementation of e-procurement in the Ministry (mean = 4.30, std deviation = 0.58) coordination of activities influence implementation ofe-

procurement in the Ministry(mean = 4.27, std deviation = 0.55), allocation of responsibility influence implementation ofe-procurement in the Ministry (mean = 4.15, std deviation = 0.20), top management support influence e-procurement implementation(mean = 4.04, std deviation = 0.88). This implies that top management commitment greatly influence implementation of e-procurement in the Ministry.

4.6 Influence of information technology infrastructure on implementation of e-procurement

The study sought to determine the extent to which Information Technology Infrastructure influence implementation ofe-procurement in the Ministry. The respondents were asked to rate their level of agreement with the 4 items which were indicators of Information Technology Infrastructure influence implementation of e-procurement. Result are analysed in Table 4.8:

Table 4.8: Information technology infrastructure

Statements on information technology infrastructure	Mean	Std deviation
Computer technologies influence implementation of e-procurement in the Ministry	4.28	0.55
Information security risks influence implementation of e-procurement in the Ministry	4.25	0.68
Rapid technology changes influence implementation of e-procurement in the Ministry	4.27	0.24
Networking infrastructure influence implementation of e-procurement in the Ministry	4.34	0.62

From the research findings majority of the respondents agreed to a great extent that; networking infrastructure influence implementation of e-procurement in the Ministry (mean =4.34, std deviation =0.62), information technology infrastructure influence implementation ofe-procurement Ministry (mean =4.28, std deviation = 0.60) rapid technology changes influence implementation of e-procurement in the Ministry (mean =4.27, std deviation =0.24) and that information security risks influence implementation

of e-procurement in the Ministry (mean =4.27, std deviation =0.68). This depicts that information technology infrastructure greatly influence implementation of e-procurement in the Ministry.

4.7 Influence of staff training on implementation of e-procurement

The study sought to determine the extent to which staff training influence implementation of e-procurement in the Ministry. The respondents were asked to rate their level of agreement with the 4 items which were indicators to which staff training influence implementation of e-procurement. Result are analysed in table 4.9.

Table 4.9: Staff training

Statements on staff training	Mean	Std deviation
Staff training influence implementation of e- procurement and operational flexibility in the Ministry	4.34	0.62
Staff training on implementation of e- procurement which promotes monitoring and planning inthe Ministry	4.46	0.78
Staff training on implementation of e- procurement promotes positive change in job behavior in the Ministry	4.13	0.95
Staff training on implementation of e- procurement helps employees to develop prerequisite skills and competence	3.87	0.22

From the research findings majority of the respondents agreed to a great extent that; staff training influence implementation ofe-procurement in the Ministry(mean = 4.50, std deviation =0.50), staff training on implementation ofe- procurement promotes monitoring and planningthe in the Ministry(mean =4.46, std deviation =0.78) staff training influence implementation of e- procurement adoption and operational flexibility inthe Ministry (mean = 4.34, std deviation =0.62) staff training on implementation of e-procurement promotes positive change in job behavior (mean = 4.13, std deviation = 0.95) and that staff training on implementation ofe- procurement helps employees to develop prerequisite skills and competence(mean =3.87, std deviation =0.22). This shows

that staff training has a great influence on the implementation of e-procurement in the Ministry.

4.8 Influence of suppliers capacity on implementation of e-procurement

The study sought to determine the extent to which supplier's capacity influence implementation of e-procurement in the Ministry. The respondents were asked to rate their level of agreement to which supplier's capacity influence implementation of e-procurement. Result are analysed in table 4.10.

Table 4.10: Supplier's capacity

Statements on supplier's capacity	Mean	Std deviation
Supplier Involvement influence implementation of e-procurement in the Ministry	3.96	0.88
Information Processing Capacity influence implementation of e-procurement in the Ministry	4.41	0.19
Technical Skills & Knowledge influence implementation of e-procurement in the Ministry	4.07	0.39
Networking Infrastructure influence implementation of e-procurement in the Ministry	3.94	0.81

From the research findings majority of the respondents agreed to a great extent that; suppliers capacity influence implementation ofe-procurement in the Ministry(mean =4.37, std deviation =0.57), technical skills & knowledge influence implementation of e-procurement in the Ministry(mean =4.07, std deviation =0.39) information processing capacity influence implementation ofe-procurement in the Ministry(mean =4.41, std deviation =0.19) supplier involvement influence implementation ofe-procurement in the Ministry(mean =3.96, std deviation =0.88) and that networking infrastructure influence implementation of e-procurement in the Ministry(mean =3.94, std deviation =0.81). This depicts that supplier's capacity has a great influence on the implementation of e-procurement in the Ministry.

4.9 Inferential statistics

In this study, a multiple regression analysis was conducted to test the influence of the four predictor variables on implementation of E-procurement. The research used statistical package for social sciences (SPSS Version 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary for the regression is presented in the Table 4.11.

Table 4. 1: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781	.610	.601	.4156

The study used coefficient of determination to evaluate the model fit. The adjusted $R^{2,}$ also called the coefficient of multiple determinations, is the percent of the variance in the dependent explained uniquely or jointly by the independent variables. The model had an average adjusted coefficient of determination (R^2) of 0.601 and which implied that 60.1% of the variations in Implementation of e-procurement in government ministries are explained by the independent variables understudy (top management commitment, information technology infrastructure, staff training and suppliers capacity).

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in Table 4.12.

Table 4. 2: Summary of One-Way ANOVA results

Model		Sum of squares	df	Mean Square	F	Sig.
1	Regression	13.696	4	3.424	37.765	.000[b]
	Residual	7.616	84	0.091		
	Total	21.312	88			

Critical value =2.5252

From the ANOVA statics, the study established the regression model had a significance level of 0.00% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (37.765>2.5252) an indication that top management commitment, information technology infrastructure, staff training and suppliers' capacity all have a significant effects on Implementation of e-procurement in government ministries. The significance value was less than 0.05 indicating that the model was significant.

In addition, the study used the coefficient table to determine the influence of each of the study variables on implementation of e-procurement. The findings are presented in the Table 4.13.

Table 4. 3: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.271	0.317		4.009	.007
	Top management commitment X_1	0.467	0.076	0.397	6.145	.001
	Information technology infrastructure X_2	0.696	0.139	0.670	5.007	.000
	Staff training X_3	0.662	0.148	0.394	4.473	.003
	Suppliers capacity X_4	0.587	0.139	0.413	4.223	.001

Source: Research data, 2016

As per the SPSS generated output as presented in Table 4.13, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$) becomes:

$Y = 1.271 + 0.467X_1 + 0.696X_2 + 0.662X_3 + 0.587X_4$

From the regression model obtained above, a unit change in top management commitment holding the other factors constant would positively change in Implementation of e-procurement in government ministries by a factor of 0.467, a unit change in Information technology infrastructure while holding the other factors constant would positively change Implementation of e-procurement in government ministries by a factor of 0.696, a unit change in staff training while holding the other factors constant would positively change Implementation of e-procurement in government ministries by a factor of 0.662, while a unit change in availability in Suppliers capacity while holding the other factors constant would positively change Implementation of e-procurement in government ministries by a factor of 0.587.

This implied that Information technology infrastructure had the highest influence on Implementation of e-procurement in government ministries followed by staff training

then Suppliers capacity and finally Top management commitment. it was an implication that top management commitment, information technology infrastructure, staff training and suppliers capacity promoted Implementation of e-procurement in government ministries and vice versa. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and α=0.05. If the probability value was less than α, then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than α=0.05.

CHAPTER FIVE
SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to, the conclusions and recommendations drawn were focused on addressing the objective of the study the researcher had intended to determine influence of top management commitment on implementation of e-procurement in the Ministry of Water and Irrigation. to establish the influence of information technology infrastructure on implementation of e-procurement in the Ministry of Water and Irrigation, to examine how staff training influences implementation of e-procurement in the Ministry of Water and Irrigation, to determine the influence of supplier capacity on implementation of e-procurement in the Ministry of Water and Irrigation.

5.2. Summary of the findings

In line with the objective one, the study found that a unit change in top management commitment would positively result to a positive change in Implementation of e-procurement in government ministries. The study also found that a unit change in Information technology infrastructure would positively result to a positive change in implementation of e-procurement in government ministries, results also show that networking infrastructure influence implementation of e-procurement in the government ministries, rapid technology changes influence e-procurement implementation in the government ministries, and that information security risks influence e-procurement implementation in the government ministries the study findings concur with studies by Aberdeen (2007) cited at Thomas (2005) believes that by implementing e-procurement, operational process will be decentralized whereas strategic procurement process will be centralized which results in higher supply chain transparency,

The study revealed that a unit change in staff training while holding the other factors constant would positively change Implementation of e-procurement in government ministries by a factor of 0.662, descriptive results show that staff training influences implementation ofe-procurement in the Ministry, staff training on implementation ofe-procurement will promotemonitoring and planning in the Ministry. Staff training on implementation of e- procurement promotes operational flexibility inthe Ministry, staff training on e- procurement system promotes positive change in job behavior and that staff training on implementation of e- procurement will helps employees to develop prerequisite skills and competence.

The study established that supplier's capacity influence implementation ofe-procurement to a great extent that; Supplier's skills & knowledge influence the implementation of e-procurement in the government ministries, information processing capacity influence e-procurement implementation in the government ministries, supplier involvement influence e-procurement implementation in the government ministries and that networking infrastructure influence e-procurement implementation in the government ministries.

The study revealed that e-procurement implementation influencesthe performance of government ministries to a great extent.Implementation of e-procurement promotes improve productivity in the Ministry, e-procurement implementation will promotes improved efficiency in the Ministry, e-procurement implementation would promote cost reduction in the Ministry, e-procurement procurement adoption will promotes access to information in the Ministry and that e-procurement procurement adoption influence professional services delivery in the Ministry.

5.3 Discussion of the findings

The following are the discussion of the findings

5.3.1 Top Management commitment and implementation of e-procurement

In line with the objective one, the study found that a unit change in top management commitment would positively result to a positive change in Implementation of e-

procurement in government ministries. The findings above conform to findings by March (2011), that top management support is directly related to project outcome. The results also show that collective commitment influence e-procurement implementation in government ministries, supportive organizational structure influence implementation of e-procurement in government ministries, monitoring processes influence e-procurement implementation in government ministries, coordination of activities influence e-procurement implementation, allocation of responsibility influence e-procurement implementation in government ministries and that top management commitment influence e-procurement implementation in the government ministries. The findings are in support with OECD (2011) that over the past 10 to 15 years, governments around the world have utilised information and communication technologies, particularly digital technology which has significantly changed the ways in which governments do business with citizens

5.3.2 Information technology infrastructureand implementation of e-procurement

The study found that a unit change in Information technology infrastructure would positively result to a positive change in implementation of e-procurement in government ministries. The findings concur with Franks and Curswoth, (2003) who found out that Information technology infrastructure is positive relationship with I.T Implementation in an organisation. The results also show that networking infrastructure influence e-procurement implementation in the government ministries, information technology infrastructure influence e-procurement implementation in government ministries, rapid technology changes influence e-procurement implementation in the government ministries, and that information security risks influence e-procurement implementation in the government ministries. The findings concur with Dooley and Purchase (2006) adoption of ICT has shown suppliers‘ participation, internal managerial support and the perceived benefits gained through implementation all influence e-procurement intentions.

5.3.3 Staff training and implementation of e-procurement

The study revealed that a unit change in staff training while holding the other factors constant would positively change Implementation of e-procurement in government ministries by a factor of 0.662. This correlates with Dessler (2000) who opined that due to the increase of technological advancement constant training on the skills to handle all kinds of problems in communication to achieve effective communication is essential. The study also deduced that staff training on e- procurement implementation which promotes monitoring and planning staff training influence e- procurement adoption and operational flexibilitythe organisation staff training on e- procurement system promotes positive change in job behavior and that staff training on e- procurement system helps employees to develop prerequisite skills and competence. The findings are supported by the studies of Grant, (2012) and Sarrazin et al., (2012) that for training and development to have significant impact on organizational performance, employees need to be motivated during training programs.

5.3.4 Suppliers Capacity and Implementation of E-procurement

The study established that supplier's capacity influence implementation of e-procurement in the government ministries to a great extent. In line with this, Walczuch, Van Braven and Lundgren (2010) attributed the failure of European small and medium enterprises (SMEs) to utilize e-commerce to their lack of e-commerce and Internet knowledge. Because of the obstacles in developing the necessary skills and technical knowledge, many firms postpone ICT adoption until they gain sufficient internal expertise. It was clear that technical skills & knowledge influence e-procurement implementation in the government Ministries , information processing capacity influence e-procurement implementation in the government ministries, supplier involvement influence e-procurement implementation in the government ministries and that networking infrastructure influence e-procurement implementation in the government ministries. the findings concur with Banfield and Kay, (2008) that E-sourcing can reduce purchase prices, save time, streamline the bidding process, and enable suppliers from anywhere in the world to compete for a buyer's business, to attain the greatest benefits,

5.4 Conclusions of the study

The study concludes that top management commitment is critical in the implementation of e-procurement in the Ministry of Water and Irrigation, the success in e-procurement implementation also relies on Information technology infrastructure, staff training and supplier capacity the research concludes that that e–procurement enhances accountability through elimination of corruption, errors and hence ensuring efficiency of procurement systems. e- procurement ensures that there is technology to monitor and ensure that internal processes are in place and they are function, e- procurement system enhances coordination of procurement process and hence reduces bureaucracy which enhances efficiency of organisations; e- procurement system eliminates overlapping or conflicting jobs or duties, and that adoption of e- procurement decreased the level of bureaucracy in the organisation which enhanced the efficiency of procurement process.

5.5 Recommendations

i. In order to ensure successful implementation of e-procurement in the Ministry of Water and Irrigation, the top management should show full commitment throughout the implementation process; this will serve as a motivation to the personnel in the lower levels of management.

ii. The government should train its employees to reduce resistance to ICT in the organisation.

iii. The government should also lay in proper infrastructure and ICT platform. The government must also train suppliers on e-procurement to enable them participate in the tendering process and benefit form government opportunities.

iv. Government ministries and Parastatals should consider adoption of ICT in their procurement process, as this was found to enhance accountability levels, removal of bureaucracy, enhancement of process innovation and efficiency.

v. It is very important that the procurement function in the institution is discharged with probity, transparency and accountability in a manner that secures best value for the organisation.

vi. Purchasing professionals should take the time to understand the fundamentals of ethical behavior when selecting and managing suppliers as well being aware their own personal responsibilities and demonstrate integrity at all times

5.6 Recommendation for further research.

The purpose of this study was to investigate the factors affecting implementation of e-procurement in IFMIS projects in the public sectors focusing on Ministry of Water and Irrigation. The study recommends that a similar study needs to be done on effects of e-procurement on stock management at the government Parastatals, there is also need to assess on effect of budgeting on procurement process at the government Parastatals and ministries and finally there is need to assess on effects of procurement ethics on procurement process at government Parastatals and ministries.

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APPENDICES

Appendix I: Introduction Letter

Dear Sir/Madam,

REF: REQUEST TO CARRY OUT DATA COLLECTION.

I am a Master of Arts student at the University of Nairobi and in my final year of study. As part of the requirement for the award of the degree of Master of Arts in Project Planning and Management, I'm undertaking a research project on "FACTORS INFLUENCING IMPLEMENTATION OF e-PROCUREMENT IN IFMIS PROJECTS IN PUBLIC SECTOR: A CASE OF MINISTRY OF WATER AND IRRIGATION". In this regard, I'm kindly requesting for your support in terms of time, and by responding to the attached questionnaire. Your accuracy and candid response will be critical in ensuring objective research.

Any assistance accorded to me in my noble cause and information given shall be treated as confidential and will be used purely for the purpose of this research and a final copy of the document shall be availed to you upon request. Your cooperation will be highly appreciated and thank you in anticipation.

Yours Faithfully,

Shadrack Rutto
L50/76087/2014

APPENDIX II: RESEARCH QUESTIONNAIRE

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

SECTION A: GENERAL INFORMATION

1. Which department are you working in?

Procurement	[ ]	HR	[ ]
ICT	[ ]	Administration	[ ]

Other……

2. Which position do you hold in the department?

Unit Head	[ ]	Departmental Head	[ ]
Procurement/HR/ICT/Administration Officer			[ ]

Other (please specify).....

3. What is your highest level of education?

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

4. How long have you worked in the organization?

1 to 5 years	[ ]	6 to 10years	[ ]
11 o 15	[ ]	16 years and above	[ ]

5. Does the Ministry embrace e-procurement in its procurement practices?

Yes	[ ]	No	[ ]

SECTION II: Determinants of e-procurement implementation

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

PART A. Top management commitment

6. To what extent do you think top management support influence e-procurement implementation in this Ministry?

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

7. To what extent do the following aspects of top management commitment influence e-procurement implementation in this Ministry?

Collective commitment

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Supportive organizational structure

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Allocation of responsibility

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Monitoring processes

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Set goals, strategies and baseline

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Coordination of activities

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

PART B. Information technology infrastructure

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

8. To what extent do you think information technology infrastructure influence e-procurement implementation in this Ministry?

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

9. To what extent do the following aspects of information technology infrastructure influence e- procurement adoption in this Ministry?

Computer technologies

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Information security risks

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Rapid technology changes

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]

To a very great extent [ ]

Networking infrastructure

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

PART C. Staff training

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

10. To what extent do you think staff training influence e-procurement implementation in this Ministry?

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

11. To what extent do the following aspects of Staff Training influence e- procurement adoption in this Ministry?

Operational flexibility

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Monitoring and planning

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Changes in job behavior

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Developing skills and competence

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Form of training

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Part D. Suppliers capacity

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

12. To what extent do you think suppliers capacity influence e-procurement implementation in this Ministry?

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

13. To what extent do the following aspects of suppliers' capacity influence e-procurement adoption in this Ministry?

Supplier involvement

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Information processing capacity

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Technical skills & knowledge

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

Networking infrastructure

To a very low extent [ ] to a low extent [ ]

To a moderate extent [ ] to a great extent [ ]

To a very great extent [ ]

14. In your own opinion what would you recommend to be done in your organization in order to enhance e-procurement?

……

……

……

Part E. e-procurement implementation

Please tick the appropriate box or write your answer for the questions below on the spaces provided.

15. To what extent does e-procurement implementation influence the following in your organization?

Cost reduction

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Improved efficiency

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Improve productivity

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Access to information

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

Professional services delivery

To a very low extent	[ ]	to a low extent	[ ]
To a moderate extent	[ ]	to a great extent	[ ]
To a very great extent	[ ]		

THANK YOU FOR YOUR TIME AND PARTICIPATION

APPENDIX III: Required size for randomly chosen sample

N	S	N	S	N	S	N	S
10	10	140	103	550	226	4500	354
15	14	150	108	600	234	5000	357
20	19	160	113	650	241	6000	361
25	24	220	140	700	248	7000	364
30	28	230	144	750	254	8000	367
35	32	240	148	800	260	9000	368
40	36	250	152	1200	291	10000	370
45	40	260	155	1300	297	15000	375
50	44	270	159	1400	302	20000	377
55	48	280	160	1500	306	30000	380
60	52	290	165	1600	310	50000	381
65	56	300	169	1700	313	100000	384
70	59	320	175	1800	317		
75	63	340	181	1900	320		
80	66	360	186	2000	322		
85	70	380	191	2200	327		
90	73	400	196	2400	331		
95	76	420	201	2600	335		
100	80	440	205	2800	338		
110	86	460	210	3000	341		
120	92	480	214	3500	346		
130	97	500	217	4000	351		

N=Population size S=Sample size

Source: Krejcie and Morgan (1970).