KEY FACTORS INFLUENCING THE IMPLEMENTATION OF E-PROCUREMENT IN PUBLIC INSTITUTIONS IN UGANDA: A CASE OF MINISTRY OF PUBLIC SERVICE, KAMPALA

By

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15/MBA/00/KLA/WKD/0070

A Dissertation Submitted to the School of Management Science in partial fulfillment of the requirements for the Award of the Master's Degree in Business Administration of

Uganda Management Institute

January, 2018

DECLARATION

I, **Charles Alionzi,** declare that this thesis is my own original work and that it has not been presented and will not be presented to any other University for similar or any other degree award

Sign……..

Date…….

APPROVAL

We, the undersigned, certify that we have read and here by recommend for acceptance by Uganda Management Institute a dissertation titled *"the key factors influencing the implementation of e-procurement in Government entities drawing empirical evidence from the Ministry of Public Service, Kampala Uganda."* in partial fulfillment of the requirements for the award of the degree of Masters in Business Administration

Dr. Godfrey Mugurusi

Sign…….

Date……..

Mr. Innocent Baguma

Sign…….

Date……..

DEDICATION

This research work is dedicated to all those who are struggling to fulfill their academic ambitions in Uganda.

ACKNOWLEDGEMENTS

My sincere gratitude goes to Almighty God for his grace, mercy and protection all these years of my educational life. I am also profoundly grateful to my eminent supervisors Dr. Godfrey Mugurusi and Mr. Innocent Baguma for spending substantial part of their time reading my entire manuscript, carefully pointing out errors and enthusiastically offering many useful suggestions for improvement. Above all I want to thank my wife and the rest of my family, who supported and encouraged me in spite of all the time it took me away from them. It was a long and difficult journey for them. My sincere appreciations to the respondents at Ministry of Public Service for accepting to give the data that I relied on to write this report. Thanks to all my friends at Uganda Management Institute who have been more than friends to me. Their company in the institute and during the time of doing the Masters in Business Administration together has been immense.

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LIST OF ABBREVIATIONS

AAA	Analytical and Advisory Assistance
BDS	Business Development Services
BOD	Board of Directors
CSO	Civil Society Organization
CVI	Content Validity Index
EAC	East African Community
GoU	Government of Uganda
HRM	Human Resource Manager
ICT	Information and Communication Technology
KCCA	Kampala Capital City Authority
MDGs	Millennium Development Goals
ME	Monitoring and Evaluation
NGOs	Non-Governmental Organizations
PSR	Public Sector Reform
SMEs	Small and Medium Enterprises
SPSS	Statistical Package for Social Scientists
TTL	Task Team Leader
UBOS	Uganda Bureau of Statistics
VAT	Value Added Tax
WBI	World Bank Institute
WBG	World Bank Group

ABSTRACT

The study examined the factors influencing the implementation of e- procurement in Government entities drawing empirical evidence from the Ministry of Public Service, Kampala Uganda. The study was premised on the following study objectives: to examine the influence of the legal framework on the implementation of e-procurement in the Ministry of Public Service, Uganda, to establish the influence of information technology infrastructure on the implementation of e-procurement in the Ministry of Public Service, Uganda and to examine the influence of employee competence on the implementation of e-procurement in the Ministry of Public Service, Uganda. The study adopted a descriptive cross sectional survey design where both quantitative and qualitative approaches were used. In this study, a total number of 190 respondents were expected but 172 respondents returned the survey instruments representing a response rate of 90.5%. The data was collected using questionnaires and interviews and quantitative data analysis was done using Pearson correlation coefficients. Qualitative analysis was done using content and thematic analysis. Findings revealed that there is a positive significant relationship between legal framework and the implementation of e-procurement at the Ministry of Public Service r=274*, secondly, there is a positive significant relationship between information technology infrastructure and the implementation of e-procurement r=.666* and thirdly, there is a positive relationship between employee competence and the implementation of e-procurement at the Ministry of Public Service r=0.552. In Conclusion: The legal framework being the back bone of any business operation was also found to have a major impediment to the implementation of e-procurement systems. Notably internet connectivity and system integration with those of suppliers were key impediments. It was clear that most of the respondents found the implementation of e-procurement system to be a challenge and its adoption therefore were still below optimum levels. Lack of trained personnel and necessary support hardware were still key impediments just as was in the case of cost consideration. It is recommended that: Government should endeavor to review the legal and regulatory frame of the Procurement Act to include elements of e-procurement in the procurement process so as to start incorporating aspects of technology aided procurement data collection and treatments. Public entities should therefore invest in security systems within their entire IT platform that will give them the ability to minimize their exposure to such risks. Regular training is recommended, users training refers to the process of providing employees with the logic and overall concept of a complex IT application or software that is being introduced within the organization.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study examined the key factors influencing the implementation of e-procurement in public institution in Uganda. Over the last few years, the internet has changed 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 **(**Cagliano, Caniato, and Spina, 2013). The Ugandan government has recognized adoption of ICT in service delivery to the public and its citizens in the Constitution. However, even given the potential benefits of e-procurement, most of the government ministries have not effectively implemented the e-procurement practices. E-procurement is conceived as the independent variable and implementation is the dependent variable. This chapter presents the background of the study, the statement of the problem, the general objectives, the research questions, the hypothesis, the scope of the study, justification of the study and the operational definitions of the terms and concepts.

1.2 Background to the Study

The background is divided into four perspectives the historical, theoretical, conceptual and contextual

1.2.1 Historical Background

The rise of e-business in the late 1990's led to the development of new opportunities related to procurement: e-procurement, spend management, outsourcing and joint product design (Davila, Gupta, and Palmer, 2003). The advent of the Internet as a business systems platform has been a

catalyst for major changes in the operation and status of organizational procurement. From the late 1990s, a raft of new e-commerce technologies emerged which promised to revolutionize working practices, threaten existing businesses and potentially create new business models (De Boer, Harink, and Heijboer, 2002).

Following this growth in use of e-commerce in business-to-business markets, there has been significant adoption of new supply chain-related technology and applications by organizations globally. The procurement function has been particularly affected by this trend with a predicted growth in e-procurement applications covering both transactional buying and strategic sourcing activities (Croom, 2000). One of the factors behind this development has been the evolution of the procurement function towards a more strategic role in supporting both corporate goals and supply chain objectives.

With the emergence of Information and Communication Technology (ICT), organizations have been forced to shift their operation from the traditional style to e-business, e-procurement and e-supply chain philosophy in order to sustain themselves (Lee *et al.*, 2007). In the automation of the supply chain process, e-procurement provides several advantages which every organization should consider adopting. E-procurement is seen as a powerful means of achieving efficiency and this has an indirect effect on cash savings by providing the access to good deals (OGC, 2005, p. 6). It helps suppliers in tendering for contracts by erasing spatial and distance constraints, by speeding up procedures and by reducing administration costs significantly.

Dawe (2004) asserts that, for effective implementation of supply chain management, a comprehensive effort for improvement in all of supply chain functions within a firm should be made, and the focus of supply chain practices should shift from functional and independent to general and integrative. This implies that the performance of each supply chain practice should

be evaluated depending on how the practice has a significant effect on the efficient integration of entire supply chain processes. Thus, the successful achievement of SC integration can be possible by the systematic utilization of various supply chain practices. Bowersox (2009) also has the same perspective as the argument above. He asserts that the process of SC integration should progress from the integration of internal logistics processes to external integration with suppliers and customers, such as adopting e-procurement. This internal integration can be accomplished by the automation and standardization of each internal logistics function, the introduction of new technology, and continuous performance control under formalized and centralized organizational structure (Bowersox, 2009).

With the creation of the Internet, procurement has taken on and continues to take on an even more dynamic role in the late 20th century, engaging in e-commerce transactions (e-procurement). The pace of activity became even faster with improvements in software that have continued to the practice of procurement more thorough and accurate (Hamba, 2010). The internet is changing the way business is done in every industry. The World Wide Web has become a source of information, goods and services. E-procurement has emerged as one of the most discussed topic in material procurement. Without doubt, it will dramatically change the way purchasing is done in the near future (Hashim, 2016). Governments of both developed and developing countries have embraced ICT to improve the quality of public service, increase public access to information and to energize more participation in civic affairs.

Several factors have been identified as influencing the e-procurement success in an organization. Bof and Previtali (2009) have identified these factors to include the availability of managerial and technical competency in the organization as well as adequacy of suppliers with IT solutions and the availability of IT infrastructure. Croom & Brandon on their part noted that the adoption

of e-procurement by an organization will be affected by organizations commitment to the same and the perceived improvement to purchasing tasks. The migration of procurement functions to the Internet had a profound impact on reducing the prevalent corruption in public procurements (Panda & Sahu, 2010). Research has indicated that the cost benefit was the main driver for companies to implement e-procurement

1.2.2 Theoretical Background

This study was underpinned by the Technology Organisation Environment. The TOE framework was developed in 1990 (Khalil, and Pearson, 2012). Technology-organization-environment framework states that a firm's technology adoption/implementation decisions are influenced by three factors: technology, organization and environment. Technology describes the existing and new technologies relevant to the firm, Organizational factors refer to the available resources within the firm and Environmental describes the industry features where a firm is conducting business (Tornatzky and Fleischer, 1990).

It identifies three aspects of an enterprise's context that influence the process by which it adopts and implements a technological innovation: technological context, organizational context, and environmental context. (a) Technological context describes both the internal and external technologies relevant to the firm. This includes current practices and equipment internal to the firm (Khalil, and Pearson, 2012), as well as the set of available technologies external to the firm (Khalil, and Pearson, 2012). (b) Organizational context refers to descriptive measures about the organization such as scope, size, and managerial structure. (c) Environmental context is the arena in which a firm conducts its business its industry, competitors, and dealings with the government (Tornatzky and Fleischer 1990).

Relevance: In relation to this study, the TOE framework has been used and empirically validated in several studies with diverse technology innovations and various contexts to explain technology adoption/diffusion decisions. Based on TOE's solid theoretical foundation and the consistent empirical support presented in earlier research studies, the TOE framework is considered suitable and a good starting point for this study.

TOE framework is designed for analyzing technology adoption within firms in various contexts. Businesses in developed and developing countries are significantly different. Organizations in developed countries have access to more resources and face more competition than organization in developing countries (It is the TOE theory above that underpinned the study and was further explored in chapter two under theoretical review.

1.2.3 Conceptual Background

This sub section explores the key concepts in the proposed study. In other words, Public Procurement is the process by which organizations acquire goods, works and services using public funds (MacManus, 2002). It is a comprehensive process that takes into account proper procurement planning, budgetary allocation, bids invitation, bids evaluation, award of contract, contract management, performance measurement, monitoring, auditing and reporting (Maniam, and Halimah, 2008)

According to Maniam, Halimah, Murali (2015), procurement generally involves making buying decisions under conditions of scarcity. If good data is available, it is good practice to make use of economic analysis methods such as cost benefit analysis or cost utility analysis. E-procurement refers to the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Maniam, and Halimah, 2008). There

are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-Tendering, e-sourcing, e-advertising, e-payment, e-invoicing, e-catalogue. E-A legal framework is a set of laws that have been put in place to regulate an activity, institution or society (Velasco, 2010). The legal framework refers to laws and statutes in existence in Uganda that regulate the control of public finances such as the Uganda Constitution, Anti-Corruption Act, Inspectorate of Government Act, Local Government Act, and the Public Procurement Disposal of Public Assets Act. Procurement is an online system by which companies can be connected directly to suppliers for the purpose of buying products and services at the lowest cost possible. E- Procurement essentially replaces its offline version, called tendering. According to Bialy (2008) E-Procurement is done with a software application that includes features for supplier management and complex auctions. The E-procurement value chain comprises indent management, E-tendering, E-auctioning, vendor management, catalogue management and contract management.

1.2.4 Contextual Background

According to Mastor (2014), the public sector organizations use E-Procurement for contracts to achieve such benefits as increased efficiency and cost savings, faster and cheaper in-government procurement and improved transparency, and to reduce corruption in procurement services by eliminating interaction with suppliers. Implementation of e-procurement has been affected by numerous factors and its only yester years that blue chip organizations started taking full advantage of the value of e-procurement systems. A variety of factors may affect a firm's decision to adopt and implement a particular ICT. Hamba (2016) also showed that the following organizational and environmental factors positively affected the implementation of ICT in SCM: organizational size; staff training, employee competence, decentralized organizational structure;

supply chain strategy integration; transactional climate and supply chain member pressure, and environmental uncertainty. As this study examines the organizational implementation of e-procurement systems, the focus is limited. In the Ministry of Public Service, efficient handling of e-procurement outlays is continually a challenge with many developmental agendas yet to be implemented. There is also continued outcry from the general public and technocrats responsible for implementation of e-procurement that the e-procurement process is widely not known leading to irregular and subjective decisions on e-procurement (Ssebanakita, 2012).

1.3 Statement of the Problem

Governments have been noted to be the single largest purchaser in a national economy and the public procurement systems in low and middle-income countries have typically been characterized by lack of transparency and inefficient public expenditures (Hamba, 2016). Governments procure goods and, in order to preserve accountability and transparency services, use a complex legal and regulatory system designed to protect the public interest (Ssebanakita, 2012). To manage such complex transactions, governments worldwide have adopted e-procurement systems to effectively and efficiently manage the activities in the procurement process (Byaruhanga, 2016). E-procurement systems offer many benefits which include: enhanced transparency and compliance, increased performance and quality. Studies done locally on the implementation of e-procurement have concentrated on the government ministries yet a number of gaps exist in terms of delays, cost increments, PDU have had issues with the procurement cycle (Min and Galle, 2016). In the Ministry of Public Service, efficient handling of e-procurement outlays is continually a challenge with many developmental agendas yet to be implemented (Milaga, 2005). According to the Auditor General's Report (2016) a total of 816 billion Uganda shillings was disbursed to the facilitate government to facilitate their operations.

This resulted in a remarkable achievement when the government ministries reported a 42.7% drop in their procurement operating cost using e-procurement yet more than 50% of procurement processes in Uganda's public procuring entities are carried out manually. A million dollar question is that despite numerous benefits on the use of E-procurement in the government, its implementation has largely been slow given that very few public entities are applying e-procurement (Byaruhanga, 2016). Therefore there exists a gap of knowledge on factors affecting e-procurement implementation in the government ministries. This study is therefore bridged the knowledge gap that sought to examine factors affecting implementation of e-procurement in public institutions.

1.4 Purpose of the Study

The purpose of the study was to examine the factors influencing the implementation of e-procurement in Government entities drawing empirical evidence from the Ministry of Public Service, Kampala Uganda.

1.5 Objectives of the Study

The objectives of this study were:

i. To examine the influence of the legal framework on the implementation of e-procurement in the Ministry of Public Service, Uganda.
ii. To establish the influence of information technology infrastructure on the implementation of e-procurement in the Ministry of Public Service, Uganda.
iii. To examine the influence of employee competence on the implementation of e-procurement in the Ministry of Public Service, Uganda.

1.6 Research Questions

The study answered the following research questions

i. To what extent does the legal framework influence the implementation of e-procurement in the Ministry of Public Service, Uganda?
ii. To what extent does information technology infrastructure influence the implementation of e-procurement in the Ministry of Public Service, Uganda?
iii. To what extent does employee competence influence the implementation of e-procurement in the Ministry of Public Service, Uganda?

1.7 Research Hypotheses

The study tested the following research hypotheses

i. The legal framework positively influences the implementation of e-procurement in the Ministry of Public Service, Uganda?
ii. Information technology infrastructure positively influences the implementation of e-procurement in the Ministry of Public Service, Uganda?
iii. Employee competence positively influences the implementation of e-procurement in the Ministry of Public Service, Uganda?

1.8 Conceptual Framework

This sub section presents the conceptual framework of the study and provides a discussion of the main areas of focus.

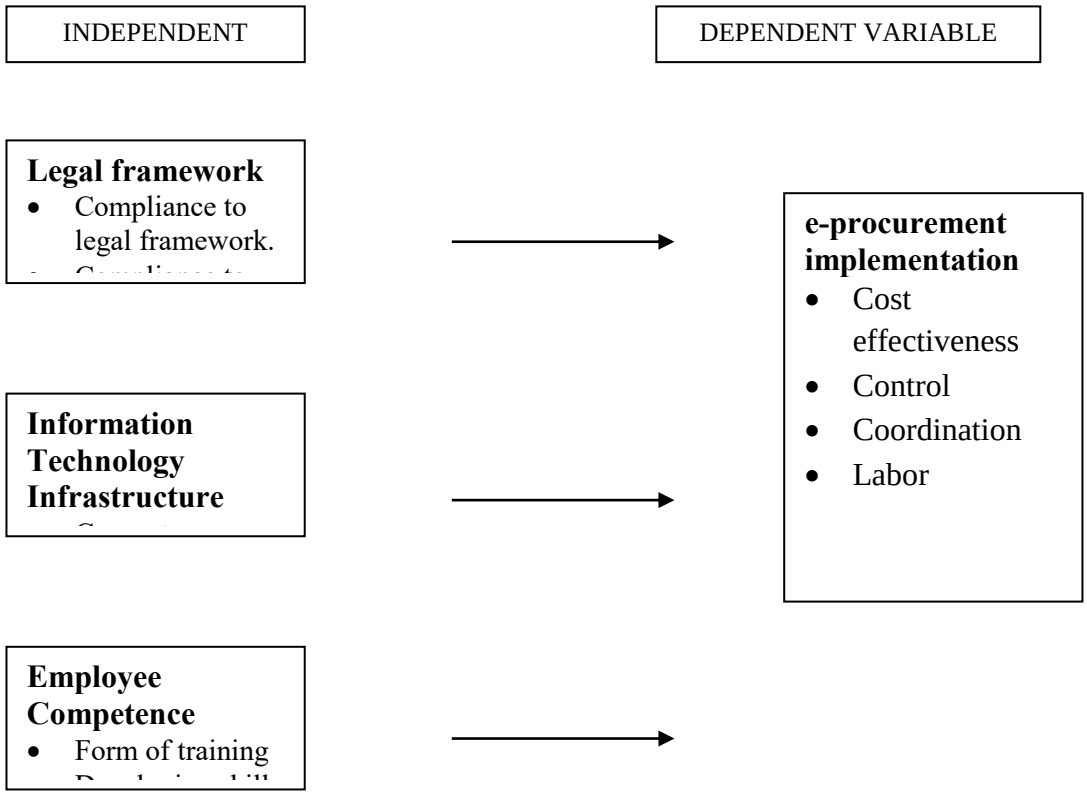

Figure 1: A conceptual framework illustrating the relationship between the study variables
Source: Adopted from Neef, D (2001) and modified by the researcher

The independent variable is factors influencing the implementation of e-procurement and the dependent variable is the implementation of e-procurement. Factors was measured in terms of legal framework, information technology infrastructure and employee competence. Legal framework was measured in terms of compliance to legal framework, compliance to internal policies & procedures and compliance to donor expectations. Information technology infrastructure was measured in terms of computer technologies, interconnectivity and security

risks. Employee competence was measured in terms of form of training, developing skills and competence and changes in job behavior. The dependent variable is implementation which was measured in terms of cost effectiveness, systems in place, control, coordination and labor.

1.9 Significance of the Study.

The research findings will contribute to the current debate on e-procurement performance. The research will serve as a point of focus for the amendment of the laws on procurement. It will assist the government to fill gaps of poor quality, delays, over pricing identified and lead to improvement in e-performance.

The study will hopefully guide government policy makers, agencies and all stakeholders managing the procurement process will get new knowledge that will help promote value for money and promote timely implementation of procurements.

Furthermore the study will fill the gaps left by other researchers and writers on e- procurement. And lastly, the research may act as a foundation to indicating areas of further research to subsequent scholars in the field of e-procurement.

The study will give the researcher a more practical analytical insight relating theory to practice. In this regard, the study will broaden the researcher's knowledge on e-procurement studies and policy analysis. Through the resultant interaction between the researcher and the respondents, the researcher's knowledge, skills and understanding of research may improve.

1.10 Justification of the Study

Government of Uganda to date is calling on government officials to conduct government activities in a business manner emphasizing efficiency and timely delivery of services. Studies done locally on the implementation of e-procurement have concentrated on other sectors other

than the government ministries (Hamba, 2016). In the Ministry of Public Service, efficient handling of e-procurement outlays is continually a challenge with many developmental agendas yet to be implemented. There is also continued outcry from the general public and technocrats responsible for implementation of e-procurement that the e-procurement process is widely not known leading to irregular and subjective decisions on e-procurement (Ssebanakita, 2012). The existing gaps in the implementation of e-procurement make this study urgent.

1.11 Scope of the Study

1.11.1 Geographical Scope: The study was carried out in Kampala at Ministry of Public Service. The key subject was public procurement, lately, procurement has become one of the areas of public sector administration characterized by considerable costs and inefficiency where the adoption of innovative technologies, such as e-procurement, can be deployed to effect significant costs savings. However, there are many barriers to the adoption of such technologies.

1.11.2 Content Scope: The study examined the key factors influencing the implementation of e-procurement in Government entities, a case of Ministry of Public Service. E-procurement is conceived as the independent variable and implementation is the dependent variable.

1.11.3 Time Scope: The study was limited to a period between 2010 to 2017. This is the period when there have been continued outcry from the general public and technocrats responsible for implementation of e-procurement that the e-procurement process is widely not known leading to irregular and subjective decisions on e-procurement.

1.12 Operational Definitions of Key Terms and Concepts

According to PPDA Act (2003), procurement is defined as the acquisition by purchase, rental, lease, hire purchase, license, tenancy, franchise, or any other contractual means, of any type of works, services or supplies or any combination.

Procurement is a process that consists of many steps and the bottom line is that planning is not concerned with future decisions but rather with the future impact of decisions made today (Maniam, Murali and Magiswary, 2009).

According to Osmonbekov, Bello, and Gilliland, (2002), procurement generally involves making buying decisions under conditions of scarcity. **E-procurement** refers to the use of Internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Pavlou, 2003). E-Procurement is an online system by which companies can be connected directly to suppliers for the purpose of buying products and services at the lowest cost possible. E- Procurement essentially replaces its offline version, called tendering.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature reviewed on the basis of the study objectives. The literature was selected, studied and arranged according to the themes relating to the study. The chapter presentation is under three sections; review of various theories and concepts highlighting factors influencing the implementation of e-procurement and synthesis of literature and research gap analysis. Literature sources included books and journals aimed at providing insight in what has already been done within this area of study and also as a guide in answering the research questions.

2.2 Theoretical Review

Technology-organization-environment framework states that a firm's technology adoption/implementation decisions are influenced by three factors: technology, organization and environment. Technology describes the existing and new technologies relevant to the firm, Organizational factors refer to the available resources within the firm and Environmental describes the industry features where a firm is conducting business (Min, and Galle, 2016).

The TOE framework was developed in 1990 (Pikkarainen, Pikkarainen, Karjaluoto, Pahnila, 2004). It identifies three aspects of an enterprise's context that influence the process by which it adopts and implements a technological innovation: technological context, organizational context, and environmental context. (a) Technological context describes both the internal and external technologies relevant to the firm. This includes current practices and equipment internal to the firm (Pushmann, 2005) as well as the set of available technologies external to the firm. (b)

Organizational context refers to descriptive measures about the organization such as scope, size, and managerial structure. (c) Environmental context is the arena in which a firm conducts its business its industry, competitors, and dealings with the government (Pushmann, 2005). The TOE framework has been used and empirically validated in several studies with diverse technology innovations and various contexts to explain technology adoption/diffusion decisions. Based on TOE's solid theoretical foundation and the consistent empirical support presented in earlier research studies, the TOE framework is considered suitable and a good starting point for this study.

TOE framework is designed for analyzing technology adoption within firms in various contexts. Businesses in developed and developing countries are significantly different. Organizations in developed countries have access to more resources and face more competition than organization in developing countries (Milaga, 2005). There are two specific variables that are fundamental determinants of users' attitude toward using information technology and actual use of the system: perceived usefulness and perceived ease of use relatively to new information system design features. Usefulness is defined as the degree to which someone believes that using a system will enhance his performance and ease of use is defined as the degree to which user believes that benefits of systems' use are outweighed the efforts for using it. Before e-procurement adoption, administrators have to assess employees' attitude across to this new information technology, in order to prevent a failure in implementation and waste of resources. Administrators have to provide safe and high quality services under the pressure of limited resources. Computers, information systems and technologies have penetrated to public organizations and enhanced their performance by providing better communication, access to information and knowledge and promoting innovation and efficiency (Milaga, 2005).

A well designed process and policy willing can be essential pre-conditions for e-procurement implementation. However, there is a crucial variable which put at risk the success of the implementation. This variable tends to be users' acceptance of the new process. E-procurement consists of change for the organization and specifically for the employees of the procurement unit (Milaga, 2005). Abolition of the traditional handwritten procedure and its replacement of new procedures based on the use of computer and information technology consist some of the major changes.

Relevance: In relation to this study, the TOE framework has been used and empirically validated in several studies with diverse technology innovations and various contexts to explain technology adoption/diffusion decisions. Based on TOE's solid theoretical foundation and the consistent empirical support presented in earlier research studies, the TOE framework is considered suitable and a good starting point for this study.

TOE framework is designed for analyzing technology adoption within firms in various contexts. Businesses in developed and developing countries are significantly different. Organizations in developed countries have access to more resources and face more competition than organization in developing countries (It is the TOE theory above that underpinned the study and was further expanded in chapter 2 under theoretical review.

2.3 Review of Related Literature

The literature is reviewed on the basis of the study objectives (variables) of the study as laid down in chapter one

2.3.1 Legal Framework and the Implementation of E-Procurement

Legal framework is a basis of any business transaction whether in Public sector or private businesses. It defines the obligations and responsibilities of the partners transacting business with the objectives of fulfilling each other's desired goals. Mastor (2014) found that the laws governing e-commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved. The weakness in this frame work therefore may inhibit the adoption and growth of e-procurement initiatives. Understanding the challenges and limitation of e-procurement adoption in the public sector is important due to complexities of government policies and bureaucracy. Without such understanding, government may not be able to achieve the benefits of e-procurement. This could assist in future planning and adoption of e-procurement.

The audit of compliance consists of verifying that the legal provisions on public procurement have been properly applied, (Hamba, 2016). This monitoring is done by conducting thorough checks or inspections of the legality of the actions undertaken by the PDE on the pre-determined procedure as set in the PPDA law and regulations in respect to legal compliance. PDUs have a general responsibility for maintaining Procurement Dossiers and Contracts Registers, but each PDE must ensure that complete documentation is maintained in respect of all procurement activities and for contracts and agreements entered into.

E-Procurement has gained popularity due to benefits associated with its adoption that include reduction in lead time and cost of procurement and enhanced transparency (Maniam, Halimah, Murali, 2015). From the organizations strategic point of view, e-procurement will help in fraud prevention and company reputation. Further, it is appreciated that a firms' information infrastructures have become increasingly connected and embedded with other infrastructures to initiate the growth of enterprises (Maniam, Halimah, Murali, 2015). Therefore, the usage of information technology in e-procurement systems is considered to be an innovation strategy action that enables purchasers to buy goods and services through the use of internet facilities in a variety of forms.

E-Procurement results in profitability, control and simplicity in the process of corporate procurement (Pavlou, 2003). Research also indicates that e-procurement leads to reduction in lead time and cost of procurement and enhanced transparency (Quayle, 2014). Some of the benefits of e-procurement are at the strategic level, such as fraud prevention and company reputation, and are highly intangible, but have a significant impact on an organization and its future (Quayle, 2014). Studies have also underscored the potential of e-reverse auctions to reduce purchasing prices for organizations and especially those with low levels of purchasing volume (Rahim, 2015). Several factors have been identified has influencing the e-procurement success in an organization. Rahim (2015) identified these factors to include the availability of managerial and technical competency in the organization as well as adequacy of suppliers with IT solutions and the availability of IT infrastructure. Croom (2000) on their part noted that the adoption of e-procurement by an organization will be affected by organizations commitment to the same and the perceived improvement to purchasing tasks. The migration of procurement functions to the internet had a profound impact on reducing the prevalent corruption in public procurements (Croom, 2000).

Research has indicated that the cost benefit was the main driver for companies to implement e-procurement.

However, implementing e-procurement within public services requires investments that public sector bodies have to make in a range of technologies, such as internet network providers and software packages. In addition, investments have to be made in creating or developing e-procurement management skills within the public sector, by either delivering training schemes for in-house staff or through recruitment. In addition, successful e-procurement is very dependent on strategies and actions undertaken by public organizations. This is because; purchasing and procurement may have more of a strategic character in both private and public sector. MacManus (2002) underlined four traditional procurement principles governing public spending which are not applicable to the corporate sector: (1) low bid wins, and that is a must; (2) separation between the vendor and user is desirable to avoid claims of favoritism; (3) fixed price and fixed term contracts are best for government; and (4) open access is absolutely imperative in all situations.

Many studies have underlined that ensuring faster adoption of e-procurement requires the considering and addressing of politico-legal structural factors that are specific to a particular political and administrative context. It requires political will power to ensure administrative and legal interventions (Carayannis, 2001). Government of India (GoI) has also realized the importance of Business Process Reengineering (BPR) and change management as perquisites for successful implementation of any e-governance project. Reports outlining the strategies and guidelines to deal with them have been issued by the GoI (DARPG, 2010).

According to Cloete and Courtney (2015), private and public sector organizations have been utilizing information technology (IT) systems to streamline the law and automate their purchasing and other processes over the past years. Hamba (2016) states 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 (PPDA, 2009). The PPDA in 2009 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.

2.3.2 Information Technology Infrastructure and the Implementation of E-Procurement

Issues concerning information systems development and adoption are central to the e-procurement issue. Hashim (2016), identified systems integration as a critical success factor for e-procurement implementation, both with the customer's information infrastructure and in its links to suppliers. In an earlier study, Daud, Mohammad, Azmi, Mohamed (2016)) surveyed the adoption pattern of IOS. It was not surprising that email, web sites, funds transfer and EDI dominated the list. Email and web sites are dominant and ubiquitous systems, whilst major banks provide support for electronic funds transfer which provides a secure, low cost means of payment. EDI on the other hand is only cost effective for high volume transaction and communication between common trading hierarchies. Often, EDI is deployed for the management of direct supply chains, i.e. for components and materials in manufacturing, or saleable products in retailing. The cost per unit is then relatively low, the benefits of high speed transmission and the sunk cost of investment are all factors which are seen as likely to sustain

EDI, or at least integrate it into an Internet- EDI structure for the management of specific high frequency exchange supply chains. A recent commercial report by Hashim (2016), demonstrated that there remained a slow uptake of e-procurement systems, emphasizing that system infrastructure-related issues such as software integration were inhibiting implementation.

Khalil, and Pearson (2012) investigated the adoption of e-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean firms and that significant investment in hardware, software, and personnel training to participate in e-procurement are prohibitive. Technological infrastructure plays a key role in adoption of e-procurement without which integration of public procurement entities will not materialize. Government departments have different levels of technological infrastructure, against this backdrop this study will seek to determine the role and impact of this factor in adoption of e-procurement. Suppliers on the other hand are at different levels of infrastructure development and this play a great role in understanding how this multiple level of technological infrastructure is integrated to facilitate adoption of e-procurement. Understanding of the different levels of infrastructure in public procurement entities and suppliers would help government to quantify the amount of investment in software and hardware to be channeled into adoption 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 (Khu, Husain, Mustaffa, 2012). Failed investments in technology may not only cause financial losses, but also

lead to dissatisfaction among employees (Khu, Husain, Mustaffa, 2012). Hence, explaining and predicting user adoption of new technology is important. New technology adoption by service employees is affected by various factors.

Similarly, drawing attention to the fact that the effects of ICT work in favor of both market and hierarchies, MacManus (2015) 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 MacManus (2015) are supported by Hamba(2016) 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, Pushmann and Alt (2015) found evidence that increased ICT expenditures were correlated with decreasing firm size. Quayle (2014) argue that Internet-based e-procurement systems and 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. Pushmann and Alt (2015) 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. 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 (Pushmann and Alt, 2015). Pushmann and Alt (2015) 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.

Hamba (2016) notes 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. Hamba (2016) indicates 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 (Hamba, 2016). 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 (Hamba, 2016). The move to e-procurement that is supported by internet technologies has been gradual.

According to Milaga, (2005), e-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination of procurement activities. Different actors in supply chains have got different power, legitimacy and urgency to implement e-procurement and e-procurement can have an effect on trust in supply chain relationships. Different industries show different

propensities to e-procurement adoption, related to existing use of information exchange infrastructures prior to the advent of the internet (Milaga, 2005). The greatest benefits of e-procurement occur when its application is fully integrated throughout the supply chain (Hamba, 2016). Some literature has pointed out e-procurement is more likely to be adopted if it is perceived that suppliers have capability to deal with it. The potentials of e-procurement have already been proven in a number of studies (Aberdeen, 2011). According to these studies, e-procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems. A company's procurement function is subdivided into strategic and operational processes since activities and priorities in these two areas are entirely different. Prior to e-procurement, strategic procurement often had to deal with administrative routine work as well, such as individual transactions, converting purchase requests into purchase orders or ensuring the correct allocation of invoices received (Milaga, 2005). Despite the potentials promised by the vendors of such systems, e-procurement got off to a slow start. Although the adoption of e-procurement has rapidly increased in recent years, companies face different challenges associated with the advent and use of e-procurement.

Although Aboelmaged (2010) cautioned that increased use of information technology may not improve the level of trust between buyer and sellers, many scholars have shown that increased use of e-procurement can enhance the buyer-seller relationship. The greater use of e-procurement and inter-organizational systems can enhance trading partners' relationship and the online auction intermediary can be considered one of the trading parties of the e-procurement system (Aboelmaged, 2010).

2.3.3 Employee Competence and the Implementation of E-Procurement

E-procurement platforms; however, there remain a shortage of knowledge of the actual adoption of e-procurement experiences in the public sector (Ann, and Jason, 2016). To derive the accompanying benefits entailed in e-procurement adoption, procurement staff must be competent enough to use the applications of software that offers the organization management skills to manage their activities for example, distribution chain and value addition in a company (Ann, and Jason, 2016). This technology is based on databases, which are easily reached on real time. ERP systems perfectly provide the procurement management and the management itself with the opportunity to produce steadfast, consistent, and timely information necessary for attainment of organizational goals. According to Blackburn and Athayde (2014) many procurement entities do not have competent human resource critical to manage procurement processes. The absence of the right calibre of employees to bring about enforcement of Quality standards, monitor e-procurement processes, determination of specifications, defining requirements, conducting supervisory roles eventually culminate to cause shortages in government budgets. Blackburn and Athayde (2014) argued that skills and knowledge of employees influence the future adoption of a new technology. They further argued that implementing e-procurement necessitates knowledgeable and skilled employees, therefore, the conspicuous lack of such personnel has attributed to delay in e-procurement adoption in most public institutions. Literature has established that there exist a direct correlation between an institution's capacity to explore new technology and its pool of human resources. A feasibility study on implementation of full e-procurement in Tanzania pointed out some key issues including readiness of existing legislative framework, Information and Communication Technologies (ICTs), infrastructure and People (Blackburn, and Athayde, 2014).

For an effective and efficient computer based procurement to be adopted there is the need for the maintenance of employee competence by ensuring that they are trained on related issues so that they can appreciate the legal frameworks and networks of their suppliers in the conduct of their business (Bruner, & Kumar, 2015). In 2003, a note in Harvard Business Review indicated that `despite years of process breakthroughs and elegant technology solutions, an agile, adaptive supply chain remains an elusive goal. Maybe it is the people who are getting in the way' (Bruner, & Kumar, 2015). It is commonly believed that instead of considering the supply chain to be a 50/50 mix of infrastructure and information systems technology, rather any supply chain is more like 45/45/10 mix of human behavior, systems technology and asset infrastructure

Cagliano, Caniato, and Spina (2013), points out 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 (Cagliano, Caniato, and Spina, 2013) . 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 by attending E-trainings.

According to Cloete and Courtney (2015), 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 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 Cloete, and Courtney (2015) 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.

2.3.4 Implementation of e-Procurement

Aberdeen (2011) noted that the slow implementation of e-procurement in the public sector raises concern as to what factors influence the implementation of e-procurement in the Kenyan public sector particularly in government ministries. Aberdeen (2011) pointed that introduction of e-procurement is aimed at introducing a procurement and payment System (P2P) which fully automates the procurement and payment process. The process may reduce the workload involved in the process of tendering, costs and time involved as suppliers will not have to travel long distances to place tenders in different counties and/or ministries head offices. According to Aberdeen (2011) effective e-procurement processes will provide a smoke screen between the supplier and the panels dealing with the respective bids making it hard for one to try and compromise the involved procurement officials.

Njeri (2013) conducted a study on the critical success factors and challenges in e-procurement implementation among large scale manufacturers in Nairobi, Kenya. The study concluded that most of the large scale manufacturing firms have adopted e-procurement. However these studies did not address E-procurement adoption in public sectors. Njeri(2013) did a study on factors affecting effective implementation of e-procurement in county governments with a focus on Kajiado County, Kenya. The study found that management support is very crucial in implementing e-procurement, in filling the gap, this study focused on management in the public sector.

Abgnar (2015) concluded that the value of e-procurement affects the use of e-procurement being a driving force in use of e-procurement in terms of on-time delivery, reduced cost of procurement, wide source of suppliers, improved buyer- supplier relationship, high profitability and increased

firms' competitiveness. Despite the Government's sustained and incremental efforts in laying down ICT strategies in the area of Public Financial Management Reforms in order to boost transparency, efficiency and effectiveness, it is still apparent that the implementation of e-procurement is still very slow. In addition, no study has yet focused on factors influencing implementation of e-procurement in central government ministries in Kenya. This study therefore sought to investigate factors influencing implementation of e-procurement in the national government and particularly in the Ministry of Public service.

In the study on e- procurement adaptation in Hashim (2016) pointed out e- procurement strategy, re- engineering of procurement processes and management of expectations as key success factors in an e-procurement adaptation strategy. Their conclusion was that implementation must be achieved in a manner of "incremental change" where technological solutions apply to regulations and policies. An investigation into the implementation strategy of e- Procurement in the Irish public sector concluded that fundamental changes are required in the public sector procurement environment to achieve the benefits of e- procurement approach (Hashim, 2016). It was found that the key issues could be grouped into a number of areas: procurement framework and practices, organizational arrangement, e-procurement technology framework, and the legal and economic environment.

Hawking, Stein, Wyld and Forster (2004) investigated the barriers to e-procurement implementation in Australia identifying and ranking these in order of importance as inadequate technical infrastructure, lack of skilled personnel, inadequate technological infrastructure of business partners, lack of integration with business partners, implementation costs, company culture, inadequate business processes to support e-procurement, regulatory and legal controls, security, cooperation of business partners, inadequate e-procurement solutions and upper

management support. According to Hamba (2010), e-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination of procurement activities. Different actors in supply chains have got different power, legitimacy and urgency to implement e-procurement and e-procurement can have an effect on trust in supply chain relationships. Different industries show different propensities to e-procurement adoption, related to existing use of information exchange infrastructures prior to the advent of the internet. Some literature has pointed out e-procurement is more likely to be adopted if it is perceived that suppliers have capability to deal with it.

2.4 Summary of the Literature reviewed

The literature review above confirms that different scholars have conducted several studies on the implementation of e-procurement. Most of the studies on the subject are based on developed countries with a well-developed private and public sector yet the current study centred on Uganda. Most studies were qualitative and did not guide us on the relationship between the study variables. Review of the literature enabled the researcher not only to learn various lessons, but also to identify numerous gaps with regard to the subject under study as below.

Legal framework: The need to find best practices in government e-procurement in the public sector in developing countries is becoming more intense, and the demand for transparency and accountability in the public sector is also increasing. Purchasing officials in the public sector have to respond to these pressures. While in developed countries it is easier to concentrate on reform efforts and address issues related to procurement policy, in developing countries there is also growing uneasiness about inefficient delivery systems.

Information Technology Infrastructure: The existing literature concentrates on the environment and technological factors hence ignoring the aspect of IT infrastructure which is essential and relevant for this particular study.

Employee Competence: 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 by attending E-trainings.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in the study. This includes the research design, study population, sample size, and data collection method, sources of data, data reliability, data validity, data processing, analysis and presentation, measurement of variables and limitations of the study.

3.2 Research Design

A descriptive cross sectional survey design was adopted in the current study. This design is used where there is a cross section of respondents and data is collected from them at a single point in time. A cross sectional survey provides a systematic description that is as factual and as accurate as possible (Amin, 2005). The study applied quantitative and qualitative approaches. Quantitative designs therefore helped to describe the current conditions and investigate the established relationships between the identified variables. Quantitative approaches were adopted for sampling, collection of data, data quality control and in data analysis. This study also applied qualitative approaches which involved an in-depth probe and application of subjectively interpreted data (Sekaran, 2003). Qualitative research enabled the researcher to gather indepth information about the study for example unstructured qualitative interviews served this purpose.

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3.3 Study Population

A population is the aggregate or totality of objects or individuals having one or more characteristics in common that are of interest to the researcher and where inferences are to be made (Amin, 2005). The starting point in the sampling process was to decide on the target population or the complete set of population elements from which data was collected. The target population provides the relevant source of respondents for the survey (Zikmund, 2003). It is important that the target population be clearly defined to enable proper selection of the sample. This ensures that data collected is relevant to the target population (Zikmund, 2003). The total population for this study is 254 and the researcher focused on respondents from public entities. The breakdown of the study population was as follows: 04 Procurement Professionals from PDEs, 220 Ministry of Public Service, and 30 Officials from PPDA.

3.4 Sample Size and Selection

The study was based on a sample size of 190 that was drawn from a population of 254. The sample size of 90 is sufficient and this is supported by a table by Krejcie & Morgan (1970).

Table 3.1: Population, Sample Size and Sampling Techniques

Category	**Targeted Population**	**Sample Size**	**Sampling Techniques**
Procurement Professionals	04	04	Simple random
Ministry of Public Service Officials	220	158	Simple random
Officials From PPDA	30	28	Simple random
Total	**254**	**190**	

Source: PPDA and Ministry of Public Service HR Manual (2015)

3.5 Sampling Techniques and Procedure

3.5.1 Probability Sampling

Probability sampling, or random sampling, is a sampling technique in which the probability of getting any particular sample may be calculated (Katebire, 2007). The advantage of probability sampling is its lower cost compared to probability sampling. However, one can say much less on the basis of a non-probability sample than on the basis of a probability sample (Sekaran, 2003). Simple random sampling was adopted in sampling Procurement Professionals, Ministry of Public Service Officials and PPDA Officials. According to Creswell (2009), simple sampling ensures that every member has an equal chance of being recruited into the sample. A sample frame was constructed and then the members were randomly sampled. Kothari(2004) advised that the sample size should be large enough to give a confidence interval of the desired width and as such, the size was chosen by some logical process before the sample is taken from the universe and it should be determined while considering the nature of the universe, the number of classes proposed, the nature of the study, the type of sampling, standard of accuracy and acceptable confidence level and availability of finance and other consideration

3.6 Data Collection Methods

Both primary and secondary data was obtained. In the current study, data was collected using two key methods: the questionnaire survey method and the interview method

3.6.1 Questionnaire method

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. A questionnaire was used to collect

quantitative data, it allows to gain firsthand information and more experience over a short period of time (Creswell, 2003). The researcher has chosen to use the questionnaire survey because it is practical, large amounts of information can be collected from a large number of people in a short period of time. The questionnaire is cheap and fast to administer (Kothari, 2004). Questionnaire survey as a method increases the degree of reliability as well enhances the chances of getting valid data (Amin, 2005). Questionnaires was self-administered to Procurement Professionals, Ministry of Public Service Officials and PPDA Officials

3.6.2 Interview Method

An interview is a conversation between people where items are asked by the interviewer to elicit a response or statements from the interviewee (Basheka, Barifaijo and Oonyu, 2010). According to Kothari (2004), interviews are an oral interaction between the interviewee and interviewer on a particular issue, interviews describe the life events and experiences of the respondents with respect to analysis of the significance of the portrayed phenomena. The interviews allows the researcher collect qualitative data. Person to person interviews were conducted with a selected number of respondents. Interviews were used because they have the advantage of ensuring probing for more information, clarification and capturing facial expression of the interviewees (Amin, 2005). In addition they gave an opportunity to the researcher to revisit some of the issues that had been an over-sight in other instruments and yet they are considered vital for the study. Interviews were used to explore in details the study variables. Sekaran(2003) view the interviews as one of the most essential sources of data. Creswell (2003) further emphasized that "with grounded theory the most common form of interviews is the face to face unstructured or more realistically, semi structured, open ended, ethnographic, in depth conversational interview.

3.6.3 Documentary Review Analysis

According to Creswell (2009), the documentary review checklist entails reviewing documentary data. Documentation cannot be underestimated as it provides necessary background and much needed context both of which make re-use a more worthwhile and systematic endeavor. Secondary data was obtained through the use of published and unpublished documents. According to Amin (2005), secondary data can be helpful in the research design of subsequent primary research and can provide a baseline with which the collected primary data results can be compared to other methods. According to Amin(2005), documents can be helpful in the research design of subsequent primary research and can provide a baseline with which the collected primary data results can be compared to other methods.

3.7 Data collection instruments.

The key data collection instruments used were the questionnaires, interview guide and documentary review checklist.

3.7.1 Questionnaire

A questionnaire is a reformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives (Kothari, 2004). Servqual survey is very useful when seeking to gather information from a relatively larger number of respondents. The method allows researchers to obtain large amount of information from a large sample, gives respondents time to answer, allows respondents to remain anonymous and helps reduce interviewer bias (Mangione, 1995). Self-administered questionnaire was adopted to gather data to Procurement Professionals, Ministry of Public Service Officials and PPDA Officials. According to Mugenda & Mugenda(1999), the questionnaire is considered the best way of

collecting data from respondents because it is easy to administer and obtain data within a short time from a large number of respondents. In this study, a self-administered questionnaire was used to gather data regarding the study. The researcher chose the questionnaire as an instrument because the study is virtually descriptive and the tool is an easy method of data collection. The questionnaire consisted of closed ended questions purely structured in nature whose variables were measured on a 5 point Likert scale (5 Strongly Agree, 4 Agree, 3 Not sure, 2 Disagree and 1 Strongly Disagree). The 5 point Likert scale is the most appropriate way to formulate the different questions for measuring different items from different variables.

3.7.2 Interview Guide

An interview guide is an instruments that guides the conversation between people where items are asked by the interviewer to elicit a response or statements from the interviewee (Basheka, Barifaijo and Oonyu, 2010:34). Interviews were face to face conducted with a few selected respondents. Interviews were conducted with 04 Procurement Professionals, 03 Ministry of Public Service Officials and 05 PPDA Officials. Interviews have the advantage of ensuring probing for more information, clarification and capturing facial expression of the interviewees, investigate issues in an in depth way, discover how individuals think and feel about a topic and why they hold certain opinions, investigate the use, effectiveness and usefulness of particular library collections and services (Amin, 2005). Interviews were made of unstructured questions that were written basing on the variables of the study. Interview guides vary from highly scripted to relatively loose, but they all share certain features: Interviews are useful when asking questions i.e in what sequence, how to pose the questions, and how to pose follow-ups. They provide guidance about what to do or say next, after the interviewee has answered the last

question. A copy of the interview guide is appended in the list of appendices labeled appendix (ii).

3.7.3 Documentary Review Check list

The documentary review check list was used for purposes of reviewing documentary data. Documentary data was obtained through the use of published and unpublished documents like PPDA Reports and Ministry of Public Service Procurement Reports. Various publications, magazines, newspapers reports, contract documents, historical documents and other sources of published information from were reviewed by the researcher. Amin (2005) maintains that secondary data can be helpful in the research design of subsequent primary research and can provide a baseline with which the collected primary data results can be compared to other methods. A copy of the documentary review checklist is appended in the list of appendices labeled appendix (iii).

3.8 Quality Control of Data Collection/Pretesting (Validity and Reliability)

Data quality control techniques ensured that data collected was valid and reliable; the instruments were first tested to ensure validity and reliability.

3.8.1 Validity

Validity refers to the truthfulness of findings or the extent to which the instrument is relevant in measuring what it is supposed to measure (Amin, 2005). The validity of the instrument quantitatively was established using the Content Validity Index (CVI). This involved the expert scoring of the relevance of the questions in the instrument in relation to the study variables. The instruments that yielded a CVI above 0.7 were within the accepted ranges. Basing on Amin (2005) that a CVI of more than 0.7 implies that the tool is valid; this finding suggested that all

items used to measure each variable were relevant in measuring what they are supposed to measure hence the instruments were valid if the coefficient of determination was 0.7 or above. Further, the instruments were discussed with the supervisor and experts to ensure construct and content validity. The construct validity of the instrument focused mainly on ensuring that the respondents find the questions simple to understand and answer.

To establish validity **qualitatively**, the instruments were given to the experts (supervisor) to evaluate the relevance of each item in the instrument to the objectives and rate each item on the scale of very relevant (4), quite relevant (3), somewhat relevant (2), and not relevant (1).

3.8.2 Reliability

Qualitatively, reliability of the instruments wa established through a pilot test of the questionnaire to ensure consistency and dependability and its ability to tap data that would answer the objectives of the study. The results of the findings were then subjected to a reliability analysis.

Quantitatively, reliability was established using the Cronbach's Alpha Reliability Coefficient test. Upon performing the test, if the values 0.7 and above, the items in the instrument was regarded reliable. Based on Cronbach's Alpha Coefficient, the scales for the variables were reliable. In the case of psychometric tests, must fall within the range of 0.7 above for the test to be reliable (Katebire, 2007).

3.9 Data Collection Procedure

The researcher through proper channels asked for an introductory letter from Uganda Management Institute which he used for purposes of introduction before the participants when collecting data from the field. The close ended questionnaire was administered in a period of a

week to all categories of respondents and after the instruments were collected and data analysed both quantitatively and qualitatively as presented in sub section 3.7. Interviews were conducted in a period of two weeks with a few selected respondents as explained in sub section 3.7.2.

3.10 Data Analysis Techniques

The researcher used both qualitative and quantitative methods of data analysis. Data Analysis follows an inductive content analysis that permits identification of themes and patterns of explicit word used in raw data and literature reviews (Ragin, 2007:99).

3.10.1 Quantitative Data Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS) method. The study adopted descriptive and inferential statistics to analyse data. Quantitative data obtained from the questionnaires was computed frequencies, percentages, standard deviation and mean was obtained. The researcher adopted inferential statistics that provide for use of bivariate analysis techniques in analyzing data. The techniques to be adopted were Pearson Correlations Coefficients, and Regression analysis. According to Sekaran (2003), a correlation study is most appropriate to conduct the study in the natural environment of an organization with minimum interference by the researcher and no manipulation.

3.10.2 Qualitative Data Analysis

The study adopted content and thematic analysis to analyse qualitative data. Thematic analysis is one of the most common forms of analysis in qualitative research. It emphasizes pinpointing, examining, and recording patterns (or "themes") within data. Themes are patterns across data sets that are important to the description of a phenomenon and are associated to a specific research question. The themes become the categories for analysis. Thematic analysis is performed through

the process of coding in six phases to create established, meaningful patterns (Creswell, 2003). These phases are: familiarization with data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing the final report. Thematic analysis goes beyond simply counting phrases or words in a text and moves on to identifying implicit and explicit ideas within the data (Kothari, 2004). The interpretation of these codes can include comparing theme frequencies, identifying theme co-occurrence, and graphically displaying relationships between different themes. Data was coded and to undertake thematic development and analytical categorization, the researcher reduced the data to manageable levels by use of coding and later transcribing.

3.11 Measurement of Variables

The independent variable and the dependent variable were measured on a five point Likert type scale (1- strongly disagree, 2-Disagree, 3-Not sure, 4- Agree and 5-Strongly agree). The choice of this measurement is that each point on the scale carries a numerical score which is used to measure the respondents' attitude and it is the most frequently used summated scale in the study of social attitude. According to Bill (2011), the Likert scale is able to measure perception, attitudes, values and behaviours of individuals towards a given phenomenon.

3.12 Ethical Considerations

Honesty: There are several reasons why it is important to ensure ethical norms in research. The researcher avoided fabricating, falsifying, or misrepresenting research data promote the truth and avoid error. To avoid plagiarism, works of different authors were acknowledged whenever they are cited.

Informed Consent: The ethics framework is essential as it entails the voluntary informed consent of the participants. This requires giving the participants adequate information about what the study involved and an assurance that their consent to participate would be free and voluntary rather than coerced. According to Sekaran (2003), participant's informed consent was obtained either through a letter or form that clearly specifies what the research involves, includes clearly laid down procedures the respondents can expect to follow and explain the ways in which their confidentiality was assured. In this case, a letter was obtained for this purpose. It may also be important to describe possible risks and benefits of the research (Sekaran, 2003). The signing of the voluntary informed consent by each individual respondent was confirmation that the respondents are not coerced to respondent in the study but are doing so willingly. The researcher explained to the respondents that an audio tape was used to record interviews. The researcher made the respondents aware of their right to opt out of the study if they so wish and that recording would only be done with their approval. In all the interviews, the respondents consented to the use of audio tape. Some respondents required further verbal assurance that the tapes were under no circumstances going to handed over to their supervisors.

Anonymity: Participant's names were withheld to ensure anonymity and confidentiality in terms of any prospects. In order to avoid bias, the researcher interviewed the respondent's one after the other and ensure that he informed them about the extent of his study and on the other hand he gave them reasons as to why he was interviewing them.

Confidentiality: The researcher protected confidential communications, such as publication. Justice and beneficence: The researcher explained to respondent's use of certain gadgets that they do not understand or have little knowledge about e.g camera and tape recorders. Some

respondents required further verbal assurance that the tapes were under no circumstances going to be handed over to their supervisors. Objectivity: The researcher avoided bias in experimental design where objectivity is expected or required. He avoided or minimized bias in the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This Chapter presents the response rate, a description of the background variables, data analysis, and interpretation of the findings. The examined the factors influencing the implementation of e-procurement in Government entities drawing empirical evidence from the Ministry of Public Service, Kampala Uganda. The objectives of this study were: to examine the influence of the legal framework on the implementation of e-procurement in the Ministry of Public Service, Uganda, to establish the influence of information technology infrastructure on the implementation of e-procurement in the Ministry of Public Service, Uganda and to examine the influence of employee competence on the implementation of e-procurement in the Ministry of Public Service, Uganda.

4.1 Response Rate

Presentation of tabulated data according respondents' response rate

Table 4.1: Response Rate

Instrument	Target response	Actual response	Response Rate
Questionnaire	190	172	90.5%
Interview	20	18	80%
	210	190	

Source: Primary data (2017)

From Table 4.2 above, out of the 20 respondents who were expected to be interviewed, actually 16 were finally interviewed making a response rate of 80%. Out of the 190 questionnaires that were distributed, 172 were returned making 90.5% response rate. This response rate was

considered sufficient since according to Mugenda and Mugenda (1999), a response rate of 50% and above is good enough for a study

4.3 Findings on Demographic characteristics of the respondents

The background characteristics of respondents including age, gender, education, and marital status The findings are presented in the next sub-sections

4.3.1 Age of respondents

The age distribution of respondents was observed and findings are presented in Table 4.2 below

Table 4.2: Age of the Respondents

The table below presents the summary statistics on the age of the respondents

	Age	Frequency	Percent
Valid	20-30 years	16	9.3
	30-40 years	102	59.3
	Above 40 years	54	31.4
	Total	172	100.0

Source: Primary (2017) *N= 172*

From the above table, all the respondents that took part in the study were above the age of 20. A total percentage of 9.3 were between the age of 20-30 years, 59.3% were between the age of 30-40 years, above 40 years 31.4%. This indicated that all categories of respondents in reference to different age groups were represented in this study.

4.3.2 Gender characteristics

The variable gender was investigated for this study, and related data presented in Table 4.3.

Table 4.3: Gender of the Respondents

	Gender	Frequency	Percent
Valid	Female	52	30.2
	Male	120	69.8
	Total	172	100.0

Source: Primary (2017) *N= 172*

Table 4.3 shows that the majority of the respondents (120) were males (69.8%) and 52 of them were females (30.2%). Although results show gender variation between the males and females, the study was representative since both males and females provided their views. These results indicated the study was representative of all sexes since both males and female were included in the study.

Table 4.4: Marital Status of the Respondents

The table below presents the summary statistics on the marital status of the respondents

	Marital status	Frequency	Percent
Valid	Married	134	77.9
	Single	32	18.6
	Widow/Widower	6	3.5
	Total	172	100.0

Source: Primary (2016) *N= 172*

The majority of the respondents were married (77.9%) a sign that they were responsible. The results indicated that respondents of different marital status were represented.

Table 4.5: Highest level of education the Respondents

The table below presents the summary statistics on the education of the respondents

Highest level of education

	Education	Frequency	Percent
Valid	Certificate	34	19.8
	Diploma	32	18.6
	Degree	80	46.5
	Others	26	15.1
	Total	172	100.0

Source: Primary (2017) *N=172*

Fewer respondents were degree holders (46.5%) compared to 15.1% belong to the category of others, 18.6% diploma holders and 19.8% certificate holders. These results indicate that the respondents had reasonably good education qualifications and the desired skills and knowledge to deliver. Besides, on the basis of the education levels, the respondents were able to read, understand the questionnaire and gave appropriate responses.

4.4 Presentation of Descriptive Findings

This section gives an insight on the three objectives of the study as laid down in chapter one. The study tools (appendix 1&2) were made up of four sections respectively. These responses ranged from Strongly Agree (SA), Agree (A), Neutral (N) Disagree (DA), to Strongly Disagree (SDA) and the respondents were required to indicate the extent to which they agree or disagree with the statements. The questions were assigned weight on a 5-point scale rated 1 to 5 as follows: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2) and Strongly Disagree (1).The findings were presented on the basis of the study objectives.

4.4.1 Objective One: legal framework and the implementation of e-procurement

The first objective examines the influence of legal framework on the implementation of e-procurement. Findings to address this objective were obtained using surveys. The self-administered questionnaire measured legal framework using ten items on a scale of Likert scale. The ten items on legal framework are presented in Table 4.6. The items were scaled using the five-point Likert scale where code 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. For each of the above items, descriptive statistics that include frequencies, percentages and means are presented in table 4.6

Table 4.6: Descriptive Statistics for Legal framework on the implementation of e-procurement

Item measures for Legal framework	Mean	S Deviation	SA/A	SD/D
Uganda has e-procurement laws in place for the management of public finances	4.448	.7056	90.6%	9.4%
The public is aware of the e-procurement laws	4.106	.6903	86.9%	3.1%
The e-procurement laws in place are effectively utilized	3.888	.666	72.3%	27.6%
The public finance management institutions are effectively implementing the e-procurement laws in place	4.111	.5912	77.7%	22.3%
Uganda has policies in place for e-procurement	1.995	.3775	19.5%	80.5%
The institutions have tried to effectively implement the existing e-procurement policies	4.563	.9305	94.0%	6.0%
The public is aware of the existing policies on e-procurement	3.779	.779	71.1%	18.9%
The e-procurement policies in place are effectively utilized	1.345	.566	20.3	89.7%
The institutions have tried to effectively implement the existing e-procurement policies	1.55	.567	22.7	77.3%
There is effective regulation of e-procurement by the institutions concerned	1.97	.453	25.5	74.5%

Source: Primary Data (2017) N= 172

Generally, the results as presented in the above table 4.6 indicate a high degree of rating of almost all the items that measured legal framework based on the mean scores which were all above 3 on the basis of a maximum score of 5 since the survey instrument had a 5 Likert scale. This position is further supported by the high percentage scores on those who agreed with each of the statements. The quantitative results presented above reflect the perception of the respondents. However, there are findings from interviews and documentary reviews that give the status of legal framework on the implementation of e-procurement.

The legal issues involved were identified as the top most barriers for web-based e-procurement. Legal issues relating to e-procurement in the construction industry could be categorized mainly into; Global Trading, Contract Enforceability, Liability Risks, Security Breaches and Intellectual Properties Protection (IPR). According to Pushmann and Alt (2015), legal difficulties are one of the main barriers to e-procurement. The difficulties highlighted were: lack of specific legal regulation, different national approaches, and validity and enforceability problems.

Basing on survey findings, it was established that Uganda has e-procurement laws in place for the management of public finances and the percentage of the majority who agreed were 90.6%, the mean was 4.448 was established. This indicated that the majority of the respondents agreed with the item.

In contradiction to survey findings, an Assistant Commissioner noted that:

"Uganda has no definite e-procurement laws for the management of public finances"

E-procurement system, therefore, has attracted organizations' attention particularly in the last few years despite the absence of e procurement laws and it has the potential to improve national productivity growth of any countries (Ogwang, 2013).

The respondents were asked to state whether the public is aware of the e-procurement laws. The trend of responses which was more inclined to agreement was further reflected through the mean of 4.106 that indicated that the majority agreed with the item.

A senior procurement officer on the contrary noted that

the public is not aware of the e-procurement laws in the country, the only known law is the PPDA Act which is silent on e-procurement

Survey findings further revealed that the majority 72.3% agreed with the item that stated that the e-procurement laws in place are effectively utilized. The computed test figures reveal that the mean is 3.888 indicated that the e-procurement laws in place are effectively utilized

Survey findings further revealed that the majority 77.7% agreed with the item that stated that the public finance management institutions are effectively implementing the e-procurement laws in place. The computed test figures reveal that the mean is 4.111 indicated that the majority of the respondents agreed with the item implying that the public finance management institutions are effectively implementing the e-procurement laws in place.

The respondents were asked whether Uganda has policies in place for e-procurement indicated that 19.5% disagreed with a mean value of 1.995 which implied that Uganda has no policies in place for e-procurement.

Survey findings further revealed that the majority 94% agreed with the item that stated that the institutions have tried to effectively implement the existing e-procurement policies. The computed test figures reveal that the mean is 4.56 indicated that the majority of the respondents agreed with the item implying that the institutions have tried to effectively implement the existing e-procurement policies.

A Senior Procurement Officer

While there is debate about how e-procurement has emerged, there is no doubt that the use of the Internet in e-procurement provides several advantages over the conventional procurement system and policies.

Procurement technology can increase transparency and procedural efficiency without prejudice to competition Pavlou (2013). He argues further for this not just because of its transparency, but its capacity to improve efficiency. The benefits of e-procurement technology include: an increase in contract compliance, leveraging the procurement spend, increased involvement of staff, and lower processing costs. Technological developments have added a new dimension to potential procurement reforms in both developing and industrial economies, thus e-procurement presents the promise of cutting costs and simplifying administrative procedures. The respondents were asked whether the public is aware of the existing policies on e-procurement indicated that 71.1% disagreed with a mean value of 3.779 which implied that the public is aware of the existing policies on e-procurement.

When the respondents were asked whether the e-procurement policies in place are effectively utilized, 89.7% disagreed indicating a mean of 1.345 that implied that the e-procurement policies in place are effectively utilized.

When the respondents were asked whether the institutions have tried to effectively implement the existing e-procurement policies, 77.3% disagreed indicating that the institutions have tried to effectively implement the existing e-procurement policies.

Survey findings further revealed that the majority 74.5% disagreed with the item that stated that there is effective regulation of e-procurement by the institutions concerned. The computed test figures reveal that the mean is 4.56 indicated that the majority of the respondents agreed with the item implying that there is effective regulation of e-procurement by the institutions concerned.

Findings revealed that in the public procurement context, there are various organizational, technical and governmental challenges on the ground that defies the full integration and adoption of E-procurement in public procurement. Once these challenges are addressed effectively, the country will make good progress towards full application on e-procurement especially in public procurement, the challenges include but not limited to poor technological infrastructure, inadequate funds for capital investment, risks, unsupportive legal framework and shortage of technical knowhow. Also there is shortage of technical support, security of data transaction, poor network infrastructure and unstable power supply. According to Ssebanakitta (2013) suggested that most of government offices are relative weak in computerized procurement related functions. Ssebanakitta (2013) suggested that there is a lack of funds and lack of segregation of duties. While Pikkarainen, et al (2004) find out that there are various organizational, technical and governmental challenges on the ground that defies the full integration and adoption of E-procurement in public procurement.

4.4.1.2 Hypothesis testing one(1):

The hypothesis stated that: there is a significant influence of the legal framework on the implementation of e-procurement. The hypothesis was tested was tested using Pearson Correlation Coefficient and Regression analysis

Table 4.7: Correlation matrix for the relationship between legal framework on the implementation of e-procurement

Correlations			
		Legal framework	Implementation of e-procurement
Legal framework	Pearson Correlation	1	.274*
	Sig. (2-tailed)		.000
	N	172	172
Implementation of e-procurement	Pearson Correlation	.274*	1
	Sig. (2-tailed)	.000	
	N	172	172
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: primary data (2017) *N=172*

The results show that the correlation coefficient is .274* and its significance level 0.000, which was positive with probability value ($p = 0.000$) that is less than $\alpha = 0.01$ level of significance showing a positive significant relationship between the legal framework and implementation of e-procurement in the Ministry of Public Service. Implementation of e-procurement in the Ministry of Public Service is significantly influenced by the legal framework. Therefore an improvement on the legal framework will lead to a significant improvement on implementation of e-procurement in the Ministry of Public Service. From all the results the alternate hypothesis that stated that there is a positive significant relationship between legal framework and the implementation of e-procurement in the Ministry of Public Service is upheld. The correlation coefficient is a numerical way to quantify the relationship between two variables, i.e the independent and dependent and it is denoted by the symbol R. The correlation coefficient is always between -1 and 1, thus $-1 < R < 1$. The hypothesis is rejected if the earlier hypothesis was alternate and the finally tested hypothesis is null and the vice versa. Example if the calculated value is greater than the P value we accept the hypothesis.

4.4.1.3 Regression Analysis

Further analysis using regression analysis technique was made to check the level of influence legal framework on the implementation of e-procurement in the Ministry of Public Service e and results are shown in the table 4.8 below

Table 4.8: Regression analyzing the relationship between legal framework and the implementation of e-procurement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.274[a]	.121	.111	10.98772

a. Predictors: (Constant), Legal framework

Source primary data (2017)

The Adjusted R square value is 0.111; this implied that legal framework explained only 11.1% of implementation of e-procurement. Therefore legal framework predicts implementation of e-procurement in the Ministry of Public Service by 11.1%. From all the results the alternate hypothesis earlier postulated stated that there is a positive significant relationship between legal framework and implementation of e-procurement is therefore upheld.

4.4.2 Objective two: information technology infrastructure and the implementation of e-procurement

The second objective of the study was looked at information technology infrastructure on the implementation of e-procurement in the Ministry of Public Service. Findings to address this objective were obtained using a variety of methods including survey instrument, document analysis, etc. The self-administered questionnaire measured information technology infrastructure using 9 items on a scale of Likert scale. The 9 items measuring senior management are presented in Table 4.9. The items were scaled using the five-point Likert scale where code 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. For each of the above items, descriptive statistics that include frequencies, percentages and means are presented in table 4.9 below:

Table 4.9: Descriptive Statistics for information technology infrastructure

Item Measures for information technology infrastructure	**Mean**	**S.Deviation**	**SA/A**	**SD/D**
e-procurement improve selling efficiency	3.896	.6780	69.1%	31.9%
e-procurement simplifies selling process	2.012	.5002	29.1%	60.9%
e-procurement reduce financial cost	4.009	.432	80.0%	20.0%
e-procurement increase administrative saving	4.201	.7098	75.2%	24.8%
e-procurement increase overall job performance	4.520	.3012	90.3%	0.7%
e-procurement improve information management	2.201	.6071	22.3%	77.7%
e-procurement skill can be acquired easily	4.710	.5012	88.2%	11.8%
I have the resource to use e-procurement technology	4.801	.7032	91.1%	8.9%

Source: Primary data (2017) *N=172*

Generally, the results as presented in the above table 4.11 indicate a high degree of rating of almost all the items that measured information technology infrastructure based on the mean scores which were all above 3 on the basis of a maximum score of 5 since the survey instrument had a 5 Likert scale. This position is further supported by the high percentage scores on those who agreed with each of the statements. The quantitative results presented above reflect the perception of the respondents. However there are findings from interviews and documentary reviews that give the status of information technology infrastructure and the implementation of e-procurement

Survey findings revealed that the majority 69% agreed with the item that stated that e-procurement improve selling efficiency. The computed test figures reveal that the mean is 3.896 indicating that the majority of the respondents agreed with the item implying that e-procurement improve selling efficiency.

> In Agreement a Principal Procurement Officer noted that *e-Procurement improves selling efficiency and this has eased the whole procurement process*.

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 (Ogwang, 2013). As a result, cost savings can be obtained through lower transaction cost, increased procurement process quality (accuracy), shorter cycle time, better inventory management, while relationships with trading partners can be enhanced, risk can be better controlled and strategic sourcing can be exploited (Neff, 2001).

It was established from the respondents that the majority of the respondents 29% agreed with the item that stated that e-procurement simplifies selling process. The statistical tabulation revealed a mean of 2.001 which indicated that e-procurement simplifies selling process.

A senior administrative secretary noted *"e-Procurement has simplified the selling process in all the entities involved in this process using various forms"*

PPDA Annual performance report (2016) noted that there are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-tendering, e-sourcing, e-advertising, e-payment, e-invoicing, e-catalogue. Njeri (2013) noted that As a result, cost saving can be obtained through lower transaction cost, increase procurement process quality (accuracy), shorter cycle time, better inventory management while relationships with trading partners can be enhanced, risks can be better controlled and strategic sourcing can be exploited (Milaga, 2005)

Basing on survey findings, it was established from the respondents in relation to item three that e-P reduces financial cost. The majority 80% agreed with the statement scoring a mean of 4.00 corresponding to agree.

A Records Officer noted *e-procurement reduces financial cost that may be involved in the process of procurement.*

When costs reduce, it is a remarkable achievement for example the government ministries reported a 42.7% drop in their procurement operating cost using e-procurement yet more than 50% of procurement processes in Uganda's public procuring entities are carried out manually(OAG Report, 2015). A million dollar question is that despite numerous benefits on the

use of E-procurement in the government, its implementation has largely been slow given that very few public entities are applying e-procurement (Byaruhanga, 2016).

It was established the majority of the respondents 75.2% agreed with the item that stated that e-procurement increase administrative saving. The statistical tabulation revealed a mean of 4.201 indicating that e-procurement increase administrative saving

A Senior procurement officer noted

> *that e-procurement increase administrative saving since it is done electronically and not manually.*

In contradiction documentary evidence, Ministry of Finance and Planning Report (2015) noted that efficient handling of e-procurement outlays is continually a challenge with many developmental agendas yet to be implemented. There is also continued outcry from the general public and technocrats responsible for implementation of e-procurement that the e-procurement process is widely not known leading to irregular and subjective decisions on e-procurement hence reducing administrative savings

In connection to the item which stated that e-procurement increase overall job performance, the majority 90.3% agreed with the statement. A mean value of 4.520 and a standard deviation of .2445 were observed. This implied that e-P increase overall job performance.

> A Senior Human Resource official noted that *e procurement may not necessarily increase the overall job performance*.

According to Min and Galle (2016), companies implementing e-procurement need to clearly understand the purpose of launching such a system. It involves careful analysis about how e-

procurement will affect a company and its strategy and in which area it will obtain financial and non-financial benefits and enhance job performance.

Survey findings revealed that the majority 77.7% agreed with the item that stated that e-P improve information management. The computed test figures reveal that the mean is 2.201. This indicated that the e-p improve information management.

A records officer noted that *there is need to move procurement managers from transactional to strategic activities to foster productivity of purchasing personnel.*

Njeri(2013) in many cases the benefits from implementing an e-procurement solution are intangible and non-financial therefore some traditional accounting based-methods

Basing on survey findings, it was established from the respondents in relation to the item that stated that e-procurement skill can be acquired easily. The majority 88.2% agreed with the statement hence a mean of 4.710 implied that e-P skill can be acquired easily.

A senior HRM noted that *"E-procurement allows on time interaction and communication between all sourcing project resources and knowledge and suggestion sharing from the previous participants of sourcing project. Therefore, we can simply say that e-procurement creates improved process transparency, efficiency and compliance"*

Documentary evidence, Milaga(2005) noted that any organization can attain numerous benefits and advantages through the proper utilization of e-procurement, for instance, transactional benefits, compliance benefits, management information benefits, price benefits, payment benefits and so on. It is merit mentioning that such benefits will definitely contribute hugely in improving profitability, productivity and efficiency. E-procurement increases efficiency in the supply chain process through time management which means the accomplishment of the needed order in time

not too early and not too late. This can help avoiding inventory storage and costs associated with it and also prevent from affecting production process in case of too late delivery

An assistant Commissioner noted that "*e-procurement skills can be acquired easily*.

Mastor(2014) found that e-procurement can have a major impact on compliance on many different levels of the procurement process: it supports managerial budgetary control; reduces data entering failures; offers greater transparency and accessibility to corporate wide spending; improves system reliability; and improves the access to managerial information.

It was established that the majority of the respondents 91.1% agreed with the question that stated that they have the resource to use e-procurement technology. The statistical tabulation revealed a mean of 4.801, the majority of the respondents agreed with the question implying that they have the resource to use e-procurement technology.

A senior records officer noted that *"-Save time and energy, quick and accurate bid analysis, remove the wiggle room of traditional bidding, consolidate the supply base and e-auction contributes lots of benefits*

Macmanus(2015) noted that an organization can achieve compliance due to a simple and quick requisition to payment process which has a user friendly interface and pre sourced catalogues customized to fulfill the requirements of each user, a simple strategic sourcing process having standard tools and procurement processes in addition to having easily accessible information, and the electronic procurement system, which is the only available purchasing mechanism. Chain integration activities enhance product quality and customer service performance

One Commissioner noted that *" the resource to use e-procurement technology improved financial performance* Njeri(2013) noted that control, elimination of paperwork, improved auditing and better, security, shortened delivery time, elimination of time zone, obstacles,

reduced inventory levels, maximize labor and enhanced efficiency. Companies have grasped the tangible and intangible benefits of e-procurement and know the importance of e-procurement solutions in terms of value creations. It is quite clear that benefits of e-procurement are far more than its risks. When it comes to the risks related to adopting e-procurement, these risks can be dealt with if everything is carried out according to master plan of a company prior to adoption and implementation.

Findings revealed that Government e-procurement projects have been notoriously unsuccessful and that development and implementation of e-Procurement has not been as easy, nor has it necessarily brought the anticipated savings. Furthermore, engaging suppliers in the process - especially smaller organizations - is also proving to be difficult given the level of investment expected in terms of providing catalogue information to buyers, and marketplaces using different technologies, platforms and business languages. Lack of computers and related hardware to facilitate the enablement of suppliers through the use of e-procurement was seen by 11.1% of the respondents as a very high, high and average challenge to implementation of e-procurement

4.10 Hypothesis Two Testing: There is a significant influence of information technology infrastructure on the implementation of e-procurement in the Ministry of Public Service

The hypothesis was tested using the Pearson correlation coefficient and the regression analysis, the results of the hypothesis are given table 4.10 below.

Table 4.10: Correlation matrix for between information technology infrastructure and the implementation of e-procurement

Correlations			
		Information technology infrastructure	Implementation of e-procurement
Information technology infrastructure	Pearson Correlation	1	.666*
	Sig. (2-tailed)		.000
	N	172	172
Implementation of e-procurement	Pearson Correlation	.666*	1
	Sig. (2-tailed)	.000	
	N	172	172
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary Data (2016) *N=172*

The results show that the correlation coefficient is .666* and its significance level 0.000, which was positive with probability value ($p = 0.000$) that is less than $\alpha = 0.01$ level of significance showing a positive significant relationship between information technology infrastructure and the implementation of e-procurement in the Ministry of Public Service. Therefore an improvement on information technology infrastructure will lead to a significant improvement on the implementation of e-procurement in the Ministry of Public Service. From all the results the alternate hypothesis that stated that there is a positive significant relationship between information technology infrastructure and the implementation of e-procurement in the Ministry of Public Service is upheld. The correlation coefficient is a numerical way to quantify the relationship between two variables, i.e the independent and dependent and it is denoted by the symbol R. The correlation coefficient is always between -1 and 1, thus $-1 < R < 1$. The hypothesis is rejected if the earlier hypothesis was alternate and the finally tested hypothesis is null and the vice versa. Example if the calculated value is greater than the P value we accept the hypothesis.

4.11 Regression Analysis

Further analysis using regression analysis technique was made to check the level of influence of information technology infrastructure and the implementation of e-procurement in the Ministry of Public Service and results are shown in the table 4.11 below

Table 411: Regression analyzing the relationship between information technology infrastructure and the implementation of e-procurement in the Ministry of Public Service

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.666[a]	.183	.174	9.69020

a. Predictors: (Constant), Information technology infrastructure

Source Primary Data (2017)

The coefficient of determination (Adjusted R square) value is 0.174; this implied that information technology infrastructure explained only 17.4% of the implementation of e-procurement in the Ministry of Public Service. Therefore information technology infrastructure predicts the implementation of e-procurement in the Ministry of Public Service by 17.4%. From all the results the alternate hypothesis earlier stated in chapter four that there is a significant relationship between information technology infrastructure and the implementation of e-procurement in the Ministry of Public Service is therefore upheld.

4.12 Objective three: The relationship between Employee competence and implementation of E-procurement

The items on the relationship between employee competence and e-procurement were derived from the third of objective of the study. Question items measuring employee competence were put to the respondents. The items were scaled using the five-point Likert scale where code 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. Descriptive data is as presented in Table 4.12.

Item measures for Employee competence	Mean	SD	Agreement
Employees have skills on e-procurement	4.810	.5001	96.5%
Employees are trained on e-procurement	4.520	.3012	90.3%
Employees are aware of the current trend of e-procurement globally	4.045	.7034	90.9%
Employees update themselves on e-procurement every passing day	2.666	.5567	44.8%
The government has created awareness on the existing law on e-procurement to its employees	4.520	.3012	90.3%
E- procurement has influenced change in job behavior	3.666	.5567	67.8%

Source: Primary (2017) *N= 172*

Basing on survey findings, it was established from the respondents in relation to item 1, employees have skills on e-procurement, cumulatively the majority percentage (58.3%) of the respondents disagreed with 96.5% agreed. The mean = 4.810 which on the five-point Likert scale (from a minimum of 1 for the worst case scenario strongly disagree to a maximum of 5, which is the best case scenario strongly agree) that was used to measure responses was close to 5 which corresponded to agree. This suggested that employees have skills on e-procurement

As to whether employees are trained on e-procurement, cumulatively the majority percentage (90.3%) of the respondents agreed. The mean = 4.520 was close to five, meaning that agreement, therefore, employees are trained on e-procurement.

Employee training was found to have a very high deterrent effect on implementation of e-procurement by 33.3% of the respondents while 44.4%and 11.1% rated as high, average and low respectively. Equipment maintenance was rated by 55.6% of the respondents as very high, 33.3% gave it a rating of high and average respectively.

An Assistant Commissioner noted that employees are not trained on the significance of e-procurement yet procurement stimulates investment. As observed by Heywood (2002), e-procurement will result in large investments of time and money, without absolute certainty that its full potential will be achieved every time. These views are supported by a number of cases reported.

Whether employees are aware of the current trend of e-procurement globally, cumulatively the majority percentage (90.9%) of the respondents agreed. The mean = 4.045 was close to five meaning that the respondents agreed with the item. This implied that employees are aware of the current trend of e-procurement globally.

A Commissioner in Public Service noted that *"some of our employees are not aware of the current trend of e-procurement globally"* McConnell, (2009), therefore posited that e-procurement can act as both a driver to improve procurement and as a tool to enable organizations to do so. It acts as a catalyst and provides the information and control to encourage better procurement. The changes and improvements come from people who purchase better. Inevitably, making improvement will require many people to change the way they work and may lead to changes to existing supplier–customer relationship, leading to resistance and dissatisfaction

As to whether employees update themselves on e-procurement every passing day, cumulatively the majority percentage (44.8%) of the respondents disagreed with the item. The mean = 2.666 was close to two meaning that the majority of the respondents disagreed with the item hence this suggested that employees don't update themselves on e-procurement every passing day.

Basing on survey findings, it was established from the respondents in relation to item 5, E-procurement has influenced change in job behavior, cumulatively the majority percentage

(90.3%) of the respondents agreed. The mean = 4.520 which on the five-point Likert scale (from a minimum of 1 for the worst case scenario strongly disagree to a maximum of 5, which is the best case scenario strongly agree) that was used to measure responses was close to 5 which corresponded to agree. This suggested that E- procurement has influenced change in job behavior.

> *" There is need for training, on the other hand training helps employees to know about the features of the software and thus help in developing a familiarity with the system, by facilitating their learning of the interface and appropriate use of the system process. Also adequate knowledge should be provided to staffs and suppliers developing a clear framework for e-procurement and proving enforcement and monitoring on such usage of e-procurement* system".

Malaga (2005) noted that training support is an important factor because a trainer plays a crucial role in shaping the ultimate success of any IT application by facilitating users' acceptance and knowledge.

4.13 The Dependent variable (Implementation of e-procurement)

The items on dependent variable (implementation of e-procurement) are six (6) in total showing either agreement or disagreement. Question items measuring responsive services were put to the respondents. The items were scaled using the five-point Likert scale where code 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. Descriptive data is as presented in Table 4.13.

Table 4.13: Descriptive Statistics for Implementation of e-procurement

Item measures for Implementation of e-procurement	Mean	SD	Agreement
E-procurement has made the procurement process cost effective	4.807	.7092	94.3%
E-Procurement has made the system in place efficient	4.201	.9701	88.3%
E-Procurement has made the system in place effective	3.603	.5.301	67.4%
There is growing control of the e-procurement process in the MoPS due to e-procurement	3.746	.6034	68.5%
There is growing coordination of the e-procurement process in the MoPS due to e-procurement	4.520	.3012	90.3%
E-procurement process has progressed given that it is automatic and labor saving due to labor	3.666	.5567	67.8%

Source: Primary (2017) *N= 172*

Generally, the results as presented in the above table 4.13 indicate a high degree of rating of almost all the items that measured implementation of e-procurement based on the mean scores which were all above 3 on the basis of a maximum score of 5 since the survey instrument had a 5 Likert scale. This position is further supported by the high percentage scores on those who agreed with each of the statements. The quantitative results presented above reflect the perception of the respondents. However there are findings from interviews and documentary reviews that give the status of implementation of e-procurement.

Basing on survey findings, it was established from the respondents in relation to item 1 that stated that e-procurement has made the procurement process cost effective, a mean of 4.807 and this showed that the majority of the respondents agreed with the item implying that the e-procurement has made the procurement process cost effective.

A Senior Human Resource Officer noted that:

“ e-procurement has eliminated non-value added activities, improved order processing, improved procurement process, improved supplier searching, improved control, elimination of exceptions, reduced problems with suppliers and elimination of paperwork”

In support another respondent noted that:

“e procurement has not only reduced costs but also led to price reduction, improved contract compliance, shortened cycle times, reduced administration costs, enhanced inventory management, improved visibility and enhanced decision making”

When the respondents were asked to state whether e-Procurement has made the system in place efficient. The total number of respondents was 172, a mean of 4.201 indicated the majority of respondents agreed with the question implying that e-Procurement has made the system in place efficient.

An I.T officer noted that -*Procurement has made the system in place efficient* The process of e-procurement (Podlogar 2006) from the beginning starts, via internet based protocol, facilitated with the function of creating requisition, approving and managing the purchase order, and accounting or financial process. When procurement takes place online, it can reach marketplaces that cannot be reached with traditional procurement systems. Organizations communicate, transact and interact smoothly and faster being enable to speed up the cycle time in order to perform tasks and run projects properly.

In relation to item three, the respondents were required to state whether e-procurement has made the system in place effective. The computed test figures reveal that the mean is 3.603. This indicated that the majority of the respondents agreed with the item implying that e-procurement has made the system in place effective.

A key informant noted that *procurement has made the system in place effective*. Strategic role of procurement is to speed up innovation and drive step changes in cost and performance level. Tactically, procurement contributes to basic value drivers like price competitiveness and service levels. Operationally, procurement makes sure the supply of goods and services in the focal firm to enable it to fulfill its goal in satisfying the needs of the end customer (Harrison & Hoak 2011). The respondents were further asked to state whether there is growing control of the e-procurement process in the MoPS due to e-procurement. The statistical tabulation indicated a mean of 3.746 indicating that the majority of respondents agreed with the item implying that there is growing control of the e-procurement process in the MoPS due to e-procurement

A respondent noted that

> "*The process of collecting and distributing purchasing information is made with the help of e-informing from both external and internal parties with the internet technology. For instance, internal clients and suppliers can access the published purchasing management information on an extranet, so this is called the way of e-informing*. "

In connection to the item that there is growing coordination of the e-procurement process in the MoPS due to e-procurement. A mean value of 4.520 indicated that the majority of the respondents of the respondents agreed with the item implying that there is growing coordination of the e-procurement process in the MoPS due to e-procurement

In relation to the survey findings, the respondents revealed that e-procurement process has progressed given that it is automatic and labor saving due to labor. The computed test figures reveal that the mean is 3.666 suggests that the majority of the respondents agreed with the item

implying that e-procurement process has progressed given that it is automatic and labor saving due to labor.

Generally, e-procurements are susceptible to alteration by procurement entities due to the fact that procurement documents are at the convenience of spending officers, a situation that infringes on professionalism. On account of this, a majority of respondents opined that e-procurement solutions would instill some level of professionalism among spending officers since e-procurement solutions have in bedded security features that make it difficult for some level of human manipulation. Adopting e-procurement as alternative to the current system will require substantial changes in procurement policies, procedures, processes and systems. Such changes will inevitably engineer re-training and continuous training, since e-procurement is technology based (a system that changes very fast); and training requirements to meet such initial and continuous changes will be problematic in the views of respondents.

4.15 Hypothesis testing three (3):

The hypothesis stated that: there is a significant influence of Employee competence on implementation of E-procurement. The hypothesis was tested using the Pearson correlation coefficient and the regression analysis and the results of the hypothesis are given below in table 4.14

Table 4.14: Correlation Matrix for Employee competence and implementation of E-procurement

Correlations			
		Employee competence	Implementation of E-procurement
Employee competence	Pearson Correlation	1	.552
	Sig. (2-tailed)		.000
	N	172	172
Implementation of E-procurement	Pearson Correlation	.552	1
	Sig. (2-tailed)	.000	
	N	172	172
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary Data (2016) *N=172*

The results show that the correlation coefficient is 0.552 and its significance level 0.000, which was positive with probability value ($p = 0.000$) that is less than $\alpha = 0.01$ level of significance showing a significant influence of employee competence on the implementation of E-procurement in the Ministry of Public Service. Employee competence influences or predicts the implementation of E-procurement in the Ministry of Public Service. The earlier postulated hypothesis is now upheld. From all the results the alternate hypothesis that stated there is a positive significant between employee competence and the implementation of E-procurement**.**

4.17 Regression Analysis

Further analysis using regression analysis technique was made to check on the influence of employee competence and the implementation of E-procurement in the Ministry of Public Service results are shown in the table 4.15 below

Table 4.15: Regression Analysis for employee competence and the implementation of E-procurement

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.552[a]	.121	.111	10.98772

a. Predictors: (Constant), Employee competence

Source primary data (2017)

The Adjusted R square value is 0.111; this implied that employee competence explained only 11.1% of the implementation of E-procurement in the Ministry of Public Service. Therefore employee competence predicts the implementation of E-procurement in the Ministry of Public Service by 11.1%. From all the results the alternate hypothesis earlier postulated stated that there is a positive significant relationship between employee competence and the implementation of E-procurement in the Ministry of Public Service is therefore upheld.

Conclusion: This Chapter focused on presenting the findings, interpretation and analysis, the next chapter focuses on the summary of findings, discussion of the findings, conclusions, recommendations and areas for further research. The researcher now turns to chapter five to present the summary of findings, discussion of the findings, conclusions and recommendations.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, discussion of the study findings as presented in chapter four, conclusions and recommendations plus areas for further research.

5.2 Summary of Findings

5.2.1 Legal framework and the Implementation of e-procurement

Pearson's Correlation Coefficient for legal framework on the implementation of e-procurement is .274* indicating a positive significant relationship between legal framework and the implementation of e-procurement at the Ministry of Public Service at the one percent level of significance. Therefore, the implementation of e-procurement at the Ministry of Public Service is significantly influenced by legal framework. In addition, the regression analysis results that there is a positive relationship between legal framework and the implementation of e-procurement at the Ministry of Public Service. Therefore legal framework influences the implementation of e-procurement at the Ministry of Public Service. The alternative hypothesis earlier postulated in chapter one was upheld

5.2.2 Information technology infrastructure and the implementation of e-procurement

Pearson's Correlation Coefficient for information technology infrastructure and the implementation of e-procurement positive is .666* showing a positive significant relationship between information technology infrastructure and the implementation of e-procurement at the one percent level of significance. Therefore, the implementation of e-procurement is significantly influenced by information technology infrastructure. In addition, the regression

analysis results that there is a positive relationship between information technology infrastructure and the implementation of e-procurement at the Ministry of Public Service. Therefore information technology infrastructure influences the implementation of e-procurement

5.2.3 Employee competence and the implementation of e-procurement

Pearson's Correlation Coefficient for employee competence and the implementation of e-procurement is 0.552 indicating a positive relationship between employee competence and the implementation of e-procurement at the Ministry of Public Service at the one percent level of significance. Therefore, the implementation of e-procurement is significantly influenced by employee competence at the Ministry of Public Service. In addition, the regression analysis results showed that there is a positive relationship between employee competence and the implementation of e-procurement at the Ministry of Public Service. Therefore employee competence influences the implementation of e-procurement. The alternative hypothesis earlier postulated in chapter one was upheld

5.3 Discussions

This subsection presents the discussion of the findings which is done according to the respective research objectives.

5.3.1 Legal framework and the Implementation of e-procurement

Findings revealed that there is a significant positive relationship between legal framework and the implementation of e-procurement at the Ministry of Public Service. The legal issues involved were identified as the top most barriers for web-based e-procurement. Legal issues relating to e-procurement in the construction industry could be categorized mainly into; Global Trading, Contract Enforceability, Liability Risks, Security Breaches and Intellectual Properties Protection (IPR). According to Pushmann and Alt (2015), legal difficulties are one of the main barriers to e-

procurement. The difficulties highlighted were: lack of specific legal regulation, different national approaches, and validity and enforceability problems.

Uganda has no definite e-procurement laws for the management of public finances. E-procurement system, therefore, has attracted organizations' attention particularly in the last few years despite the absence of e procurement laws and it has the potential to improve national productivity growth of any countries (Ogwang, 2013).

While there is debate about how e-procurement has emerged, there is no doubt that the use of the Internet in e-procurement provides several advantages over the conventional procurement system and policies. Procurement technology can increase transparency and procedural efficiency without prejudice to competition Pavlou (2013). He argues further for this not just because of its transparency, but its capacity to improve efficiency. The benefits of e-procurement technology include: an increase in contract compliance, leveraging the procurement spend, increased involvement of staff, and lower processing costs. Technological developments have added a new dimension to potential procurement reforms in both developing and industrial economies, thus e-procurement presents the promise of cutting costs and simplifying administrative procedures. There is shortage of technical support, no laws security of data transaction, poor network infrastructure and unstable power supply. According to Ssebanakitta (2013) suggested that most of government offices are relative weak in computerized procurement related functions. Ssebanakitta (2013) suggested that there is a lack of funds and lack of segregation of duties. While Pikkarainen, Pikkarainen, Karjaluoto, Pahnila (2004) find out that there are various organizational, technical and governmental challenges on the ground that defies the full integration and adoption of E-procurement in public procurement.

5.3.2 Information technology infrastructure and the implementation of e-procurement

Findings revealed that there is a significant positive relationship between Information technology infrastructure and the implementation of e-procurement at the Ministry of Public Service.

It was observed that e-P improve selling efficiency and this has eased the whole procurement process. 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 (Ogwang, 2013). As a result, cost savings can be obtained through lower transaction cost, increased procurement process quality (accuracy), shorter cycle time, better inventory management, while relationships with trading partners can be enhanced, risk can be better controlled and strategic sourcing can be exploited (Neff, 2001).

It was observed that e-procurement has simplified the selling process in all the entities involved in this process using various forms. PPDA Annual performance report(2016) noted that there are various forms of e-Procurement that concentrate on one or many stages of the procurement process such as e-tendering, e-sourcing, e-advertising, e-payment, e-invoicing, e-catalogue. Njeri(2013) noted that As a result, cost saving can be obtained through lower transaction cost, increase procurement process quality (accuracy), shorter cycle time, better inventory management while relationships with trading partners can be enhanced, risks can be better controlled and strategic sourcing can be exploited (Milaga, 2005)

Findings revealed that e-procurement reduces financial cost that may be involved in the process of procurement. When costs reduce, it is a remarkable achievement for example the government ministries reported a 42.7% drop in their procurement operating cost using e-procurement yet more than 50% of procurement processes in Uganda’s public procuring entities are carried out manually(OAG Report, 2015). A million dollar question is that despite numerous benefits on the

use of E-procurement in the government, its implementation has largely been slow given that very few public entities are applying e-procurement (Byaruhanga, 2016).

It was observed that e-procurement increase administrative saving since it is done electronically and not manually. In contradiction documentary evidence, Ministry of Finance and Planning Report (2015) noted that efficient handling of e-procurement outlays is continually a challenge with many developmental agendas yet to be implemented. There is also continued outcry from the general public and technocrats responsible for implementation of e-procurement that the e-procurement process is widely not known leading to irregular and subjective decisions on e-procurement hence reducing administrative savings

Findings revealed that the e procurement may not necessarily increase the overall job performance. According to Min and Galle (2016), companies implementing e-procurement need to clearly understand the purpose of launching such a system. It involves careful analysis about how e-procurement will affect a company and its strategy and in which area it will obtain financial and non-financial benefits and enhance job performance.

It was revealed that there is need to move procurement managers from transactional to strategic activities to foster productivity of purchasing personnel. Njeri (2013) in many cases the benefits from implementing an e-procurement solution are intangible and non-financial therefore some traditional accounting based-methods

It was observed that e-procurement allows on time interaction and communication between all sourcing project resources and knowledge and suggestion sharing from the previous participants of sourcing project. Therefore, we can simply say that e-procurement creates improved process transparency, efficiency and compliance. “

Milaga(2005) noted that any organization can attain numerous benefits and advantages through the proper utilization of e-procurement, for instance, transactional benefits, compliance benefits, management information benefits, price benefits, payment benefits and so on.

Findings revealed that e-procurement skills can be acquired easily. Mastor(2014) found that e-procurement can have a major impact on compliance on many different levels of the procurement process: it supports managerial budgetary control; reduces data entering failures; offers greater transparency and accessibility to corporate wide spending; improves system reliability; and improves the access to managerial information.

It was observed that e-procurement noted that e-procurement save time and energy, quick and accurate bid analysis, remove the wiggle room of traditional bidding, consolidate the supply base and e-auction contributes lots of benefits. Macmanus (2015) noted that an organization can achieve compliance due to a simple and quick requisition to payment process which has a user friendly interface and pre sourced catalogues customized to fulfill the requirements of each user, a simple strategic sourcing process having standard tools and procurement processes in addition to having easily accessible information, and the electronic procurement system, which is the only available purchasing mechanism. Chain integration activities enhance product quality and customer service performance

It was revealed that the resource to use e-procurement technology improved financial performance Njeri(2013) noted that control, elimination of paperwork, improved auditing and better, security, shortened delivery time, elimination of time zone, obstacles, reduced inventory levels, maximize labor and enhanced efficiency. Companies have grasped the tangible and intangible benefits of e-procurement and know the importance of e-procurement solutions in

terms of value creations. It is quite clear that benefits of e-procurement are far more than its risks. When it comes to the risks related to adopting e-procurement, these risks can be dealt with if everything is carried out according to master plan of a company prior to adoption and implementation.

5.3.3 Employee competence and the implementation of e-procurement

Findings revealed that there is a significant positive relationship between employee competence and the implementation of e-procurement at the Ministry of Public Service. Findings revealed that employees are not trained on the significance of e-procurement yet procurement stimulates investment. As observed by Heywood (2002), e-procurement will result in large investments of time and money, without absolute certainty that its full potential will be achieved every time. These views are supported by a number of cases reported.

Findings some of the Ministry of Public service employees are not aware of the current trend of e-procurement globally. McConnell, (2009), therefore posited that e-procurement can act as both a driver to improve procurement and as a tool to enable organizations to do so. It acts as a catalyst and provides the information and control to encourage better procurement. The changes and improvements come from people who purchase better. Inevitably, making improvement will require many people to change the way they work and may lead to changes to existing supplier–customer relationship, leading to resistance and dissatisfaction

Interview findings revealed that there is need for training, on the other hand training helps employees to know about the features of the software and thus help in developing a familiarity with the system, by facilitating their learning of the interface and appropriate use of the system process. Also adequate knowledge should be provided to staffs and suppliers developing a clear

framework for e-procurement and proving enforcement and monitoring on such usage of e-procurement system. Malaga (2005) noted that training support is an important factor because a trainer plays a crucial role in shaping the ultimate success of any IT application by facilitating users' acceptance and knowledge.

5.4 Conclusion

The conclusions were made in line with the research objectives as below

5.4.1 Legal framework and the Implementation of e-procurement

Findings revealed that there is a significant positive relationship between legal framework and the implementation of e-procurement at the Ministry of Public Service. The legal framework being the back bone of any business operation was also found to have a major impediment to the implementation of e-procurement systems. Legal protection of confidential information and the ability to authenticate and enforce electronic contracts were clearly the most cited challenges. Lack of support from the existing legal infrastructure and means for protecting and safeguarding business interest legally while using electronic platform was also seen to be a key challenge. This is clearly corroborated by the fact that currently the ICT policy in existence has not fully created a supportive legal framework where related issues are addressed E-procurement is a technology based system with comprehensive processes; has its own inherent adoption, implementation and application challenges.

5.4.2 Information technology infrastructure and the implementation of e-procurement

From the findings, the researcher concluded that there is a significant positive relationship between information technology infrastructure and the implementation of e-procurement at the Ministry of Public Service. Notably internet connectivity and system integration with those of suppliers were key impediments. It was clear that most of the respondents found the

implementation of e-procurement system to be a challenge and its adoption therefore were still below optimum levels. The entire four variables that were identified for analysis namely; cost, legal infrastructure, security and supplier enablement were found to be key impediments to the implementation of e-procurement among the firms involved in the study Security seems to be the highest impediment to the implementation of e-procurement system within the selected firms, this was evident from their response where majority saw exposure of their valuable information becoming exposed to unauthorized

5.4.3 Employee competence and the implementation of e-procurement

Findings revealed that there is a significant positive relationship between employee competence and the implementation of e-procurement at the Ministry of Public Service. Lack of trained personnel and necessary support hardware were still key impediments just as was in the case of cost consideration. Within the cost variable initial hardware acquisition was identified to be the key followed by staff training, this outcome is clearly in line with what is perceived to be the general pattern within the Ministry of Public Service despite the governments initiative of lowering relevant taxes on IT units imported into the country. The above challenge is further compounded by the fact most of the firms are not being allocated sufficient budgetary allocation to support its implementation.

5.5 Recommendations

The recommendations were made in line with the research objectives as below

5.5.1 Legal framework and the Implementation of e-procurement

Government should endeavor to review the legal and regulatory frame of the Procurement Act to include elements of e-procurement in the procurement process so as to start incorporating aspects of technology aided procurement data collection and treatments. This will reduce the level of

data/technology, process and procedure circumvention and legal compliance related problems afflicting the paper based procurement system currently practiced.

5.5.2 Information technology infrastructure and the implementation of e-procurement

It is also suggested that procurement entities should be independent in discharging their duties without any form of political influence that could impede the entities performance. In many instances, procurement process delays when there is change of government or policy directive of the

This results in waste of public resources in terms of money, materials and time of which if the projects were to be completed timely, could yield the expected output and impact. It is therefore Public entities should therefore invest in security systems within their entire IT platform that will give them the ability to minimize their exposure to such risks.

5.5.3 Employee competence and the implementation of e-procurement

Regular training is recommended, users training refers to the process of providing employees with the logic and overall concept of a complex IT application or software that is being introduced within the organization. Training helps employees in two distinct ways; it helps in the transfer of knowledge from vendor consultant to employees about why IT system is needed and how it should improve their work, this in turn address courage to employees about the IT system and the software and thus create their confidence on using the system. Supplier enablement may be a component that requires both the firms and its suppliers to work together and create a system that is efficient and mutually integrated. More so each party must solicit the support of the other either by sharing related costs, IT platform and resources. Despite internet connectivity being currently a challenge

5.6 Limitations of the study

Some Limitation might be related to collecting and interpreting our results. A first limitation might be the omission of certain variables in the study on contractor selection and contractor monitoring. For example, the competence of directors could have provided useful information to understanding the study subject. Another potential limitation in our study could be common method bias. The researcher used one single questionnaire to measure all constructs included, so perhaps, the strength of the relationships could have been altered since the findings point to the important contribution of values which relate to individuals and groups. The confidence in the results could be strengthened with access to behavioral findings. The use of findings from the questionnaire which was close ended also could have missed important information which could have been obtained through interviews and other qualitative methodologies. These recognised limitations could inspire researchers to define their future research agendas. As a Ugandan, I am fluent in both speaking and writing English. Therefore the researcher did not need the assistance of any interpreter during the interviews. The ability to speak English helped in disguising my identity as a returnee or non-local, as the researcher easily used English when communicating with respondents. The researcher employed feedback mechanism to prevent personal bias and affirmed such ideas from the respondents. The researcher also shared some of the observation with participants before writing it in the field notes.

5.8 Areas for further research

The research was carried out in a public entity, there is need to carry out a similar research in a private entity. There is need to do research on the Use of E-Procurement in the Procurement of Goods in the Private Sector: There is also need to do research on the impact of E procurement in Auditing Procurement Spend Data in the Public Sector:

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APPENDICES

APPENDIX (i)

QUESTIONNAIRE FOR PROCUREMENT PROFESSIONALS, MINISTRY OF PUBLIC SERVICE OFFICIALS AND OFFICIALS FROM PPDA

Dear Respondent

I am Alionzi Charles a Master in Business Administration student of Uganda Management Institute carrying out a study titled *the key factors influencing the implementation of e- procurement in Government entities, a case of Ministry of Public Service.* You have been sampled to participate in this study and the information you give will be used strictly for academic purposes and will never be used against you or your office. You are also requested not to write your name on this questionnaire. After filling out the questionnaire, put in the provided envelop and seal it and return to me. The information obtained from you will be kept highly confidential. Taking part in this study is completely voluntary. If you choose not to be in the study you can withdraw at any time without consent of any kind. You can choose to skip any questions, participate in only some tasks as appropriate to the study. Participating in this study does not mean that you are giving up on any of your legal rights. The records of this study will be kept private and will never be used against you or your office. The records will be destroyed after transcription and data kept on a personal computer. If you have any questions about whether you have been treated in an illegal or unethical way contact UMI.

I have read the above information and have received answers to any questions. I am above the age of 18 and therefore consent to take part in the research study.

Participant's Signature…….. Date……..

Thank you for your cooperation.

SECTION A: Background Information

(Tick the best option)

1. Gender of Respondents

Gender	Tick	
Male		1
Female		**2**

2. Age Groups of Respondents

Age group	***Tick***	
10 - 19 Years		1
20- 29Years		2
30- 39Years		3
40-49 Years		
Over 50 Years		4

3. Highest Level of Education

Education Level	**Tick**	
Certificate and Below		1
Diploma		2
Degree		3
Post Graduate Qualifications		4

5 **Respondents Marital Status**

Marital Status	Tick	Measure
Married		1
Single		2
Divorced		3
Separated		4
Widow		5
Others		6

SECTION B:

PART I- Please fill in appropriately, by ranking the questions provided under each section, according to the scores provided; *(5, 4, 3, 2 and 1)*

		SCORES				
		Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
		5	4	3	2	1
Section B1: Legal framework						
	Laws					
1	Uganda has e-procurement laws in place for the management of public finances	**5**	**4**	**3**	**2**	**1**
2	The public is aware of the e-procurement laws	**5**	**4**	**3**	**2**	**1**
3	The e-procurement laws in place are effectively utilized	**5**	**4**	**3**	**2**	**1**
4	The public finance management institutions are effectively implementing the e-procurement laws in place	**5**	**4**	**3**	**2**	**1**
	Policies					
5	Uganda has policies in place for e-procurement	**5**	**4**	**3**	**2**	**1**
6	The public is aware of the existing policies on e-procurement	**5**	**4**	**3**	**2**	**1**
7	The e-procurement policies in place are effectively utilized	**5**	**4**	**3**	**2**	**1**
8	The institutions have tried to effectively implement the existing e-procurement policies	**5**	**4**	**3**	**2**	**1**
9	There is good policy implementation in relation to e-procurement	**5**	**4**	**3**	**2**	**1**
	Regulations					
10	There is effective regulation of e-procurement by the institutions concerned	**5**	**4**	**3**	**2**	**1**
11	The regulatory framework for e-procurement has loopholes	**5**	**4**	**3**	**2**	**1**
12	The regulations for e-procurement in place needs to be revised	**5**	**4**	**3**	**2**	**1**
13	The general public is not aware of the existing regulatory framework in the country	**5**	**4**	**3**	**2**	**1**
14	Regulations on e-procurement that are currently used in Uganda are not duly followed by the public institutions	**5**	**4**	**3**	**2**	**1**
Section B2: ICT Infrastructure						

15	e-Procurement is useful	**5**	**4**	**3**	**2**	**1**
16	e-p support selling requirement	**5**	**4**	**3**	**2**	**1**
17	e-P improve selling efficiency	**5**	**4**	**3**	**2**	**1**
18	e-P simplifies selling process	**5**	**4**	**3**	**2**	**1**
19	e-P reduce financial cost	**5**	**4**	**3**	**2**	**1**
20	e-P increase administrative saving					
21	e-P increase overall job performance	**5**	**4**	**3**	**2**	**1**
22	The public budgetary process is done according to principle	**5**	**4**	**3**	**2**	**1**
23	e-P improve information management	**5**	**4**	**3**	**2**	**1**
24	e-P is easy to use	**5**	**4**	**3**	**2**	**1**
25	e-P is easy to learn	**5**	**4**	**3**	**2**	**1**
26	e-P is user friendly	**5**	**4**	**3**	**2**	**1**
27	e-P can be easily understood					
28	e-P skill can be acquired easily	**5**	**4**	**3**	**2**	**1**
29	I have the resource to use e-P technology					
30	Using e-P technology for handling my procurement task is something I would do	**5**	**4**	**3**	**2**	**1**
31	I would see myself using e-P technology for handling my procurement task	**5**	**4**	**3**	**2**	**1**
Section B3: Employee Competence						
32	Employees have skills on e-procurement	**5**	**4**	**3**	**2**	**1**
33	Employees are trained on e-procurement	**5**	**4**	**3**	**2**	**1**
34	Employees are aware of the current trend of e-procurement globally	**5**	**4**	**3**	**2**	**1**
35	Employees update themselves on e-procurement every passing day	**5**	**4**	**3**	**2**	**1**
36	The government has created awareness on the existing law on e-procurement to its employees	**5**	**4**	**3**	**2**	**1**
37	E- procurement has influenced change in job behavior	**5**	**4**	**3**	**2**	**1**
		SCORES				

		Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
		5	4	3	2	1
Section B3: Implementation of E-Procurement						
38	E-procurement has made the procurement process cost effective	**5**	**4**	**3**	**2**	**1**
39	E-Procurement has made the system in place efficient					
40	E-Procurement has made the system in place effective	**5**	**4**	**3**	**2**	**1**
41	There is growing control of the e-procurement process in the MoPS due to e-procurement	**5**	**4**	**3**	**2**	**1**
42	There is growing coordination of the e-procurement process in the MoPS due to e-procurement	**5**	**4**	**3**	**2**	**1**
43	E-procurement process has progressed given that it is automatic and labor saving due to labor					

APPENDIX (ii)

INTERVIEW GUIDE

The interview guide will seek to establish:

1. What current position in the organization do you hold?
2. For how long have you been holding the current position?
3. Your highest level of education and professional qualification?
4. How would you rate the organizations information gathering process and how it influences the e-procurement practices? What form does your market analysis take?
5. How does the organization contact bidders in the procurement process, eg, requests for quotes, proposals and bids take place?
6. In the contracting phase, does MoPS contracting process involve human intervention or it is only the system that does all the transaction? How is the present system performance?
7. How has the organizational change and cultural values impacted in the implementation of the e-procurement system at the organization.
8. Would you explain please how the ICT infrastructure affected the implementation of the e-procurement system at MoPS?
9. Does employee risk aversion to technology affect the level of implementation and usage of the e-procurement system? Please expound.

APPENDIX (iii)

DOCUMENTARY REVIEW CHEKLIST

The researcher will review the following documents

1. Ministerial Policy Statement for Ministry of Public Service
2. Ministerial Policy Statement for PPDA
3. Annual Audit Reports by OAG
4. MoPS performance reports issued by the World Bank missions
5. Report by Tribunal investigating the MoPS performance
6. Annual Audit Reports of the Office of the Audit General on Ministry of Public Service
7. Procurement Audit reports on MoPS by PPDA
8. PPDA Act of 2003 and PPDA Regulations of 2014
9. Procurement Performance Management System (PPMS) reports by PPDA

APPENDIX iv

DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION BY SMALL SAMPLE TECHNIQUE FOR SELECTION OF SAMPLE

N	***S***	***N***	***S***	***N***	***S***
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364