ORGANIZATIONAL E-READINESS AND ADOPTION OF E-PROCUREMENT IN UGANDAN ARMED FORCES: A CASE OF UGANDA POLICE FORCE

BY

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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF MASTER OF SCIENCE IN SUPPLYCHAIN MANAGEMENT OF KYAMBOGO UNIVERSITY

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DECLARATION

I, **Barugahare Ismael** hereby declare that this dissertation is my original work and that it does not incorporate without acknowledgement any material previously submitted for a Master's degree or any other academic award in any University; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text to that effect.

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APPROVAL

This is to certify that this dissertation has been prepared and compiled by Barugahare Ismael and that it was done under our supervision. It is now ready for submission to the Graduate School Kyambogo University in partial fulfillment for the requirements of the award of a Degree of Master of Science in Supply Chain Management.

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DEDICATION

This dissertation is dedicated to my beautiful daughters Arishaba Sharifah, Atuhaire Swaburah and to my son Ayesigwa Sudaisi for they have been my motivation to improve again and again.

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LIST OF ABBREVIATIONS

ANOVA	:	Analysis of Variance
B2B	:	Business to Business
BR	:	Business Resource
CVI	:	Content Validity Index
DPCs	:	District Police Commanders
HR	:	Human Resource
ICT	:	Information Communication Technology
IT & IM	:	Information Technology and Information Management
LAN	:	Local Area Network
MDA	:	Ministries Districts and Agencies
MoICT	:	Ministry of Information Communication Technology
NITA	:	National Information Technology Authority
PDU	:	Procuring and Disposing Unit
PEER	:	Perceived External E-Readiness
PERM	:	Perceived E-Readiness Model
POER	:	Perceived Organization E-Readiness
PPDA	:	Public Procurement and Disposal of Public Assets Authority
TR	:	Technological Resource
UPF	:	Uganda Police Force
USA	:	United States of America
WAN	:	Wide Area Network

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ABSTRACT

The general objective of the study was to establish the relationship between organizational e-readiness and adoption of e-procurement in Uganda Police Force. The study specifically examined the extent to which management, technological and staff e-readiness influence adoption of e-procurement in the UPF. The study used a cross sectional design adopting quantitative and qualitative approaches. The study population included 194 respondents consisting of Accounting Officer, Contracts Committee members, procurement and Disposal Unit staff, User Departments, and IT and IM Departmental staff. The study found a moderate positive and significant relationship between management e-readiness and adoption of e-procurement in UPF although it was the least significant predictor of the variance in adoption of e-procurement ($r = 0.478^{**}$, $p = 0.000$, $\beta 1 = 0.198$, $t = 2.246$, Sig. = 0.027). There was a high positive significant relationship between technological e-readiness and e-procurement adoption and it was the most significant predictor of the variance in adoption of e-procurement ($r = 0.576^{**}$, $\beta 1 = 0.389$, $t = 4.573$, sig = 0.000). Staff e-readiness had a positive significant relationship with adoption of e-procurement and it was the second most significant predictor of the variance in adoption e-procurement ($r = 0.498^{**}$, $\beta 1 = 0.228$, $t = 2.575$, Sig. = 0.011). To enhance e-procurement adoption, the study recommends that the management of UPF should review and strengthen the e-procurement vision and communicate it to all procurement levels, develop a budget that supports e-procurement initiatives, commission and communicate an e-procurement steering committee, strengthen the e-procurement policy and guidelines, procure modern procurement software, identify staff training needs and train them in e-procurement operations, and conduct staff change management sessions.

CHAPTER ONE

INTRODUCTION

1.1. Introduction

The global trends indicate increasing adoption of e-procurement in both developed and developing countries albeit different levels of e-readiness with developing countries lagging in the rate of adoption and actual institutionalization of e-procurement (Economist Intelligence Unit, 2009; Hunja, 2014). Molla and Licker (2005) in their celebrated Perceived E-Readiness Model (PERM) attribute the adoption of e-procurement to organizational and external factors which if not well managed may lead to slow or even failure of e-procurement adoption. The Uganda Police Force (UPF) has equally sought the use of e-procurement but there has been no study examining the organisational e-readiness factors which are instrumental for initial adoption and institutionalization of e-procurement in the force. This study set out to examine organisational e-readiness and e-procurement adoption in UPF. Chapter one features the background to the study, problem statement, general and specific objectives of the study, research questions, conceptual framework, study scope, significance and justification of the study. The last section of the chapter presents the study scope and operational definitions of key terms in the context of the study.

1.2. Background to the Study

World over, the adoption of electronic procurement (e-procurement) has largely depended on the external and internal pressures to electronic governance (e-governance) systems for better service delivery associated with the ICT explosion in the 1990s (Mettler & Rohner, 2009;Gunasekaran et al. 2009). The motivation for adoption of e-procurement is for its contribution to reduce procurement costs, simplification of purchasing procedures, improve on efficiency, increase transparency, improve strategic information capture on procurements and ensure better value for money (Croom et al, 2007; Eadie, et al., 2010).

For example, through adoption and use of e-procurement, in 2006 the government of Korea transacted US$ 44bn and saved US$ 4.5 bn. Similarly, Brazil in 2000 to 2006, realized 51% savings in transaction costs and 25.5% in price reductions while India recorded US$ 3.6bn of transactions in 2005 with savings of US$ 238.2M (Hunja, 2014). Various case studies also report that the use of e-procurement could result to 2-4% savings from supply duplication; management of demand for supplies; improved stocking; 2.5-4% savings from consolidated purchasing, paperless order management; 0.5-2% savings from consolidation of supplier base, and improved paperless orders with specifications; 0.5-1.5% savings from automated point-of-service distribution; just-in-time and continuous replenishment strategies (Hunja, 2014).

To this effect, governments in both developed and developing countries have emphasized e-procurement in their procurement operations albeit varying levels of e-readiness which determine the level of integration of e-procurement (Baily, 2008). The Bridges Organization (2005) found out that conducting e-readiness assessment within countries is

useful as it facilitates concrete planning and posters positive changes for a country, which is a useful starting point for developing countries (Dada, 2006).

The Economist Intelligence Unit e-readiness rankings and scores, (2009) based on connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, consumer and business adoption index. For example, Scandinavian countries ranked among the most e-ready countries with Denmark taking the first slot followed by Sweden and Netherlands. USA was ranked 5th while in Asia Singapore and Hong Kong were ranked highest. In Africa, South Africa was ranked heighted although it ranked 41 in the world ranking of top 70 countries. Egypt (57th) and Nigeria (62nd) were also among the top 70 African counties which scored among the top e-ready countries in the world (Economist Intelligence Unit, 2009).

A survey of nine sub Saharan countries on e-readiness in Africa revealed that generally most African countries were not prepared or compared poorly with other economies in the global networked economy. The low level of e-readiness was attributed to economic, social and technological inadequacies which has adversely affected the adoption of other forms of e-service delivery and e-commerce including e-procurement.

There has been a proliferation of models explaining the adoption of e-service delivery at the organization level but the Molla and Licker (2005) model which focuses on internal and external environment is widely used to explain the linkage between e-readiness and adoption of e-procurement in developing countries. The Molla and Licker (2005) model consists of two main constructs that will lead to adoption of E-procurement notably the

Perceived Organization E-Readiness (POER) which contains six factors (as commitment, governance, awareness, human resource, business resource and technology resource) relaying within the organization and that will affect the initial adoption of E-procurement. The second construct is Perceived External E-Readiness (PEER) which consists of three factors (market forces, government and supporting industries) which represent external factors that will influence the adoption of E-procurement.

African countries equally considered the adoption of e-procurement as part of the wider e-government system. South Africa for example adopted the e-procurement in the early 2000 and it has been rolled out in many government agencies, increasing the transaction value worthy R250 each month. Despite increasing interest in the use of e-procurement in South Africa, its use in lower government agencies is still low (Mathaba, et al. 2011).

In East Africa, there has been an equally increased interest to adopt e-procurements although with many challenges. For example the government of Kenya faced with inefficiencies in procurement operations undertook to adopt e-procurement as part of its public sector procurement reforms. In 2004 the government of Kenya adopted an e-procurement strategy in its midterm government objective. However, the implementation system has remained low especially in its local governments (Malela, 2010).

Like its regional counterparts, the government of Uganda undertook to reform its procurement system in the early 2003 which saw the promulgation of the Public Procurement and Disposal of Public Assets (PPDA) Act, 2003. However, the PPDA Act and its attendant Regulations, 2003 were silent on the e-procurement. Only Section 16 of the PPDA Regulations mentions of the Website and notice board of the Authority to

provide related policy and operational information on public procurement. It was until 2014 when the government of Uganda developed e-procurement systems to guide public entities in the management of procurement operations.

It is evident from the global trends that adoption of e-procurement in developing countries is advantageous in enhancing procurement efficiency and effectiveness, procurement cost reduction and reduction of procurement corruption due to automation. Nevertheless, initial adoption and institutionalization of e-procurement in developing countries will depend on organizational e-readiness which will guide the scope for the required intervention.

1.3. Statement of the problem

The government of Uganda adopted an E-procurement strategy in 2014 where it envisioned government Ministries, Departments and Agencies (MDAs) to adopt the use of e-procurement not only to help facilitate procurement efficiency and gaining of value for money but also minimization of procurement corruption (E-procurement strategy, 2014/2019). Further relevance of adopting e-procurement is to use the internet to make it easier, faster and cost effective to source requirements on a timely basis, and in a way that is aligned with organizational goals and objectives (Baily, et al., 2005; Sundarraj & Mok, 2010). However, the adoption of e-procurement in the Uganda Police Force (UPF) has remained relatively low with procurement operations remaining generally manual and vulnerable to corruption and related inefficiencies. For example, the UPF has no procurement web portal where unclassified requirements and specifications can be viewed by prospective local and international suppliers. In minimal cases where

requirements are placed on the UPF website, bidders only reply by emailing their bid documents which are printed by the Force and manually evaluated in the supplier selection process. In relation to contract management, there is no single contract that is managed electronically. This has meant that the UPF acquisition processes are not only manual, but have high overhead costs and in many cases late to the dissatisfaction of the user departments (UPF Procurement and Disposal Unit Report, 2014/15).

Anecdotal Management Reports attribute the low level of adoption of e-procurement in the UPF to organisational e-readiness but there has been no study examining the influence of e-readiness on adoption of e-procurement in UPF (UPF Procurement and Disposal Unit Report, 2014/15). There was also need to establish the status of e-readiness for evidence based interventions for adoption and institutionalization of e-procurement in the UPF and other MDAs faced with the challenge of low adoption of e-procurement. To fill the knowledge and practice gap, this study examined the relationship between e-readiness and adoption of e-procurement in UPF.

1.4 General objective of the study

To establish the relationship between organizational e-readiness and adoption of e-procurement in Uganda Police Force.

1.5. Specific objectives of the study

i. To examine the extent to which management e-readiness influences adoption of e-procurement in Uganda Police Force.

ii. To analyze the extent to which technological e-readiness affects adoption of e-procurement in Uganda Police Force.

iii. To establish the relationship between staff e-readiness and adoption of e-procurement in Uganda Police Force.

1.6. Research questions

i. To what extent does management e-readiness influence adoption of e-procurement in Uganda Police Force?

ii. To what extent does technological e-readiness affect adoption of e-procurement in Uganda Police Force?

iii. What is the relationship between staff e-readiness and adoption of e-procurement in Uganda Police Force?

1.7. Scope of the Study

1.7.1 Content scope

The study concentrated on organizational e-readiness as the independent variable under the dimensions of management e-readiness, technological and staff preconditions for adoption of e-procurement which is the dependent variable of the study. The extraneous variable included market forces, government policies and support industries.

1.7.2 Geographical scope

The study was conducted in Uganda Police Force around Kampala Metropolitan Policing (KMP) area which houses the head offices where strategic and operational procurement

decisions are made. Focus was on the Accounting officer/Under Secretary, Contracts committee, PDU, Users Departments, and a specialized department of IT &IM.

1.7.3 Time scope

The study covered the period 2015-2017 the time UPF was implementing its five year strategic plan which included promotion of e-procurement but was constrained in adoption and institutionalization

1.8 Conceptual Framework

The model below shows the relationship between the organizational e-readiness (independent variable) and adoption of e-procurement (dependent variable) using a many to one approach. The model also acted as the basis for the study objectives.

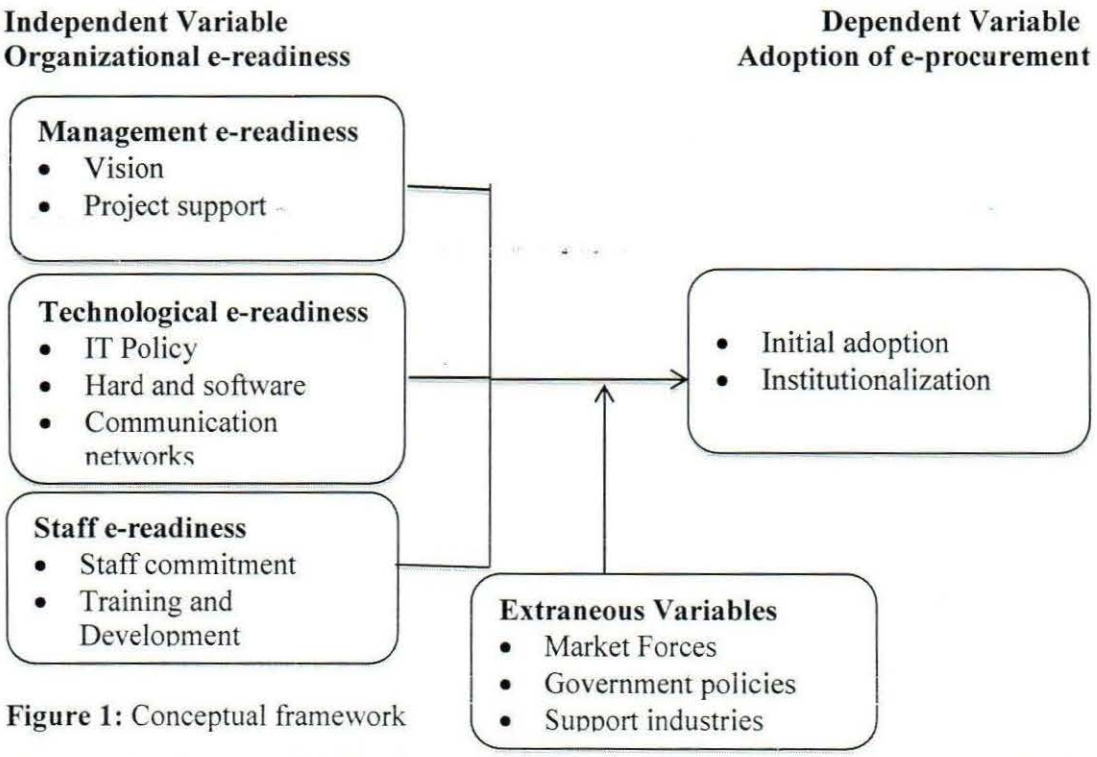

Figure 1: Conceptual framework

Adapted from Perceived E-Readiness Model for assessing the E-commerce adoption by Molla and Licker (2005) and the Technology Acceptance Model by Davis (1989).

The model shows that adoption of e-procurement depends on organizational e-readiness. Organizational e-readiness according to the modified model in this study has three indicators namely, management, technological, and staff e-readiness. Even when the extraneous variables can potentially affect relationships, the study intentionally held them constant and they were for that matter not studied in details. It is therefore hypothesized that a high level of organizational e-readiness facilitates initial adoption and institutionalization of e-procurement in the armed forces of Uganda and in particular the Uganda Police Force. This also explains that a low level of organizational e-readiness constrains the adoption of e-procurement. Each of the concepts are explained below.

Management e-readiness in this study refers to the efforts by the UPF management to set up an e-procurement vision and support for the project. The e-procurement vision defines the target to be achieved owing to the mission and objectives set by the organization. It is a statement of intent by the management to prioritize e-procurement and to determine why its initial adoption and institutionalization are essential for the future of the entity. Project support on the other hand denotes the management's commitment, awareness and effort to provide the necessary leadership, allocate resources, manage the transition and make decisions to enable initial adoption and institutionalization of e-procurement in the UPF.

Technological e-readiness in this study has indicators of availability and relevance of the IT policy, communication networks and ICT infrastructure. It relates to the IT base of an organization, the extent of computerization, and the availability of the network-based applications necessary to support e-procurement initial adoption and institutionalization.

The IT policy is a statement of intent involving principles, guidelines and roadmap to IT implementation strategies which are essential for e-procurement adoption in the UPF.

Hardware and software (also called IT Infrastructure) refers to the availability of IT equipment, and the software applications and services. It encompasses all the devices, networks and procedures that are employed to foster interactions between an organization's e-procurement operations stakeholders. It aggregates physical or virtual hardware devices, operating systems, monitoring services, and administrative services for user administration and standard office applications to facilitate interactions within the organization. *Communication networks* are defined by their size and complexity. These can be small networks, Local Area Networks (LAN) and Wide Area Network (WAN), Metropolitan Area Networks (MAN) and the Internet.

Staff e-readiness in this study refers to staff commitment and possession of the requisite e-procurement operations skills and knowledge and staff training and development. Staff commitment includes support by the employees towards the organization's e-procurement innovations effort. Staff commitment, availability and accessibility of staff skills and experiences are critical factors towards the success of e-procurement adoption initiatives. Training and development refers to programs that aim at equipping employees with e-procurement operations skills and experiences to improve performance at their current roles. It develops employees' capabilities and competencies and largely tipped to enhance success of e-procurement adoption efforts.

Adoption of e-procurement in this study, adoption of e-procurement has indicators of initial adoption and institutionalization to use e-procurement modalities for procurement operations in the UPF.

Initial adoption in this study refers to UPF's deployment of one or more of the e-procurement innovations for a part of their purchase, and using the static or interactive websites to do procurement tasks such as bid advertisements and publishing basis UPF procurement information to receive queries, use of e-mails to ease interactions between the UPF and their procurement stakeholders.

Institutionalization in this study refers to the process by which many of the UPF's e-procurement innovations are used to perform e-procurement operations. The established e-procurement innovations are rolled out and embedded within the organization to do among other processes e-tendering and e-contracts management. It looks at integrating e-procurement process activities into the organization's culture. Scott (2008) notes that the process of e-procurement institutionalization can be influenced by regulative, normative or cognitive pressures.

It is therefore hypothesized that management, technological and staff e-readiness significantly affect the extent to which the Uganda Police Force adopts the use of e-procurement.

However, the relationship between organizational e-readiness and adoption of e-procurement may be constrained by some extraneous factors of market forces, government policies and support industries where Molla and Licker (2005) explain support industries to majorly include IT industry, financial industry and the transportation industry. For the purpose of this study, these were treated as constants and thus not studied in detail.

Market Forces in this study refer to the application and use of e-procurement by, including other partners, the international communities, donor organizations, the public,

suppliers, investors and financial intermediaries. The decision for initial adoption and ultimately institutionalization of e-procurement can depend on the pressure from the market forces of the suppliers, clients, the international community and other partners.

Government Polices in this study refers to the role played by the government to enact laws, formulate the National vision, policies and guidelines that impact the initial adoption and institutionalization of e-procurement in Public entities including the UPF.

1.9. Significance of the study

The study may be useful in the following ways:

To the government of Uganda, and PPDA Authority charged with powers to oversee all public procurement- related activities, the study may help them examine organizational e-readiness to adopt e-procurement and develop policy and managerial/operational recommendations to expedite the implementation of the e-procurement strategy adopted by government in 2014.

To the management of Ugandan armed forces that include the UPF and other government Ministries, Departments and Agencies (MDAs), the study may help to highlight the institutional e-procurement gaps and offer managerial interventions for adoption, cascading and integration of e-procurement in their operations.

To the academia, the study may help fill knowledge gaps on the relationship between organizational e-readiness and adoption of e-procurement in the public sector of developing countries that are still reforming their procurement systems and operations.

1.10. Justification of the study

The government of Uganda spends about 55% of its revenue on public procurements (World Bank report, 2012).However, it was ranked 142 out of 174 countries in the 2014 Global Corruption Perception Index by Transparency International rankings attributed to procurement corruption. In the 2014/2019E-procurement strategic plan, the government of Uganda envisaged adoption of e-procurement to mitigate for procurement related corruption but there was no study assessing the level of organizational readiness to adopt e-procurement. The haphazard adoption of e-procurement without assessing the organizational readiness to adopt and implement e-procurement is detrimental as the decisions are not based on empirical evidence leading to slow progress or even failure of the e-procurement project and its institutionalization. This study comes in handy to offer policy and managerial interventions necessary to foster adoption of e-procurement in the armed forces and the public sector of Uganda in the adoption and implementation of the e-procurement strategy.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter presents a review of related literature on organizational e-readiness and adoption of e-procurement based on what scholars have observed, opined and their various viewpoints. It is done with a view of highlighting the theoretical explanations on the study inquiry as well as offer theoretical answers on the study research questions and literature gaps. The first part presents the theoretical underpinnings. This is followed by the conceptual review where the concept of organizational e-readiness and e-procurement adoption are reviewed.

2.2. Theoretical Review

The study was guided by the Molla and Licker (2005) Perceived E-Readiness Model (PERM) initially proposed for assessing the extent to which the SMEs had adopted E-Commerce. The PERM asserts that there are two indicators that determine adoption of e-commerce thus perceived organizational e-readiness (POER) and perceived external e-readiness (PEER). POER contains six factors relaying within the organization and that will affect the initial adoption and institutionalization of e-procurement. The second construct is Perceived External E-Readiness (PEER) which consists of three factors that represent external factors that influence the adoption of e-procurement. In perceived organization e-readiness, the model measures factors within the organization such as commitment, governance, awareness, human resource, business resource and technology

resource that will contribute to initial adoption of E-procurement. On the other hand, perceived external e-readiness consists of three factors which are: market forces, government and supporting industries. Both constructs affect initial adoption of e-procurement as shown in Figure 2.1.

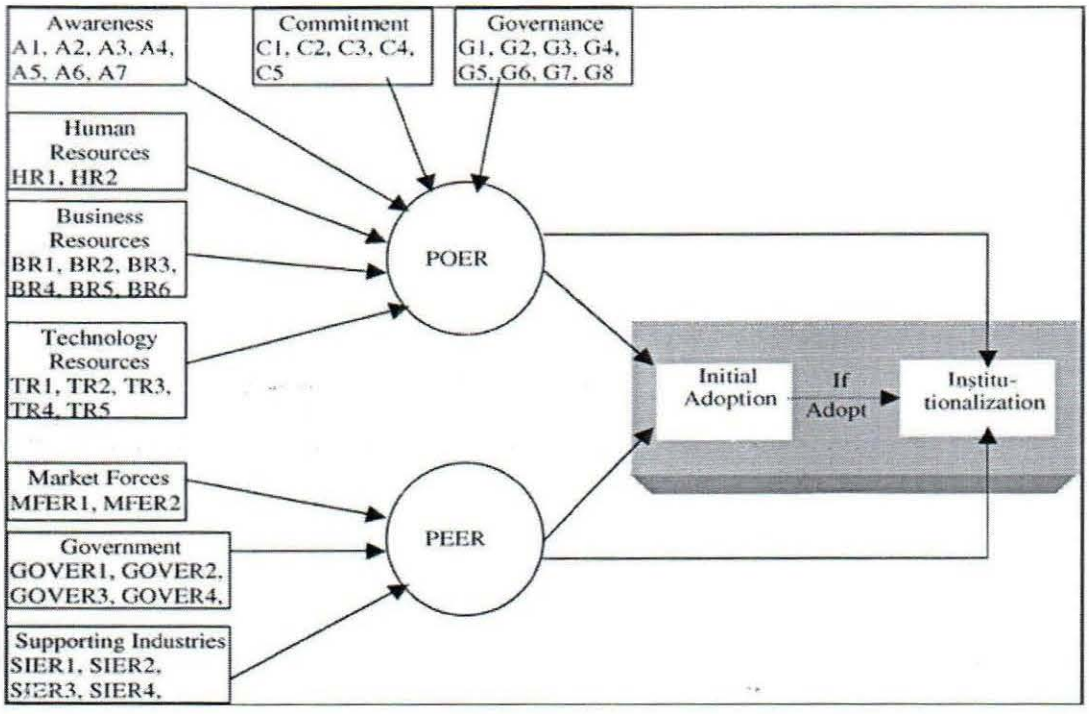

Figure 2: Adopted from the PERM by Molla and Licker (2005).

However, by the nature of this study, the researcher will largely focus on the POER by exploring the internal readiness factors given some study logistics limitation to equally explore external factors. The concepts of organizational e-readiness and e-procurement are defined in the conceptual review below.

The study was also guided by the Technology Acceptance Model (TAM) by Davis (1989). This model focuses on the attitude explanations of intentions to use a specific technology or service and deals with perceptions as opposed to real usage. The TAM

model suggests that when users are presented with a new technology, one of the factors that determine their decision about how and when they will use it, is perceived usefulness which is the degree to which intended users believe that using a particular system would enhance their job performance. And the second factor is the perceived ease-of-use which is the degree to which a person believes that using a particular system would be free from effort (Davis, 1989). The TAM has been widely used to introducing and adoption of information systems in firms with promising results (Oliveira & Martins 2010b; Zhu & Kraemer 2005). The TAM therefore guided this study in establishing the staff acceptance to adopt the e-procurement innovation in the UPF.

2.3. Conceptual Review

2.3.1. Organizational e-readiness

Organizational e-readiness is defined as the ability of a workgroup, department or organization to embrace and use technology such as e-procurement (Ruikar et al., 2006). The Economist Intelligence Unit (2005) defines organizational e-readiness as the measure of origination in e-business environment, a collection of factors that indicate how emendable a market is to internet based opportunities.

According to Molla and Licker (2005) model above, there are six internal organizational factors that influence adoption of e-procurement and they are considered as proxies for e-readiness. These include;

Awareness (A) that is the comprehension of the surrounding environment of E-procurement. Awareness can be achieved through keen understanding of ministry structure, technologies, requirements, benefits and threats as well as forecast of future trends and their impact.

Commitment (C) that is the organizational strategic support and energy towards E-procurement. Moreover, commitment refers to having a clear vision that is supported by top management. Commitment refers to how will the organization accept and support E-procurement ideas and projects.

Human Resource (HR) that is human resource availability and accessibility of staff and employees that possess certain essential IT skills and knowledge important to carry on with E-procurement initiatives and projects.

Technological Resource (TR) that is a simple enabling mechanism that will decide on how the processes of certain task will be under taken. That is how well the organization is computerized and the level of flexibility of the systems applied, and the departments' experience in network based systems.

Business Resource (BR) that includes all the tangible assets capabilities of the organization and most of it intangibles. Business resources include communication, openness, existing relationships, funding of E-procurement projects as well as risk taking behavior.

Governance (G): That is governance within an institution as tactical and strategic model developing countries put to monitor their activities and E-procurement Initiatives.

However, this study considered three dimensions of management commitment, technological and human resources factors as the basis for assessing organizational e-readiness in the UPF. Under management readiness, the study evaluates UPF's management efforts to set a vision and project support. Under technical e-readiness, this study evaluates the IT policy, ICT hard and software as well as communication networks.

Staff e-readiness evaluates issues of staff commitments, training and development.

2.3.2. E-procurement

There has been no standardized definition of e-procurement as many scholars have strived to define it based on narrower and broader scope. Neupane, Soar, and Vaidya (2014) for example defined e-procurement as the automation of procurement and supply chain processes using internet based applications and technology aimed at facilitating sharing of supply related information. Related to the above definition, Kennedy and Kiarie (2015) simply define e-procurement as business-to-business or business-to-consumer or business-to-government purchase and sale of supplies, works, and services through the Internet as well as other information and networking systems, such as electronic data interchange and enterprise resource planning. However, broader definitions of e-procurement consider e-procurement as a value chain incorporating the work flow in the preparation of bids, e-informing, e-tendering, e-auctioning, vendor management, catalogue management, purchase order integration, order status, ship notice, e-invoicing, e-payment, and contract management (Alaweti et al., 2013).

A related broader definition of e-procurement is by Berger and Gattorna (2001) who conceptualize e-procurement to include three distinctive processes of e-sourcing notably e-contracting and e-auctioning; e-requisitioning and e-intelligence which focused on the collation and analysis of procurement performance management information. To Baily, et al (2005) e-procurement is simply the use of electronic methods in every stage of the procurement process ranging from planning, supplier solicitation and contract management enabled by the internet. Specifically, e-procurement is used to accelerate

and streamline the process of identifying and selecting suppliers of goods and services; placing, receiving and paying for orders; assurance of compliance with procurement procedures; consolidating purchases to achieve leverage; and providing visibility of information between collaborative partners.

Related to the value chain conceptualization, other scholars have preferred to explain e-procurement from a functional perspective to include buyers/suppliers electronic gate ways entailing web-support for user interaction, product cataloging; transactional support in the form of searches and other order-management activities; and features such as auctions/negotiation (Soares-Aguira & Palma-Dos-Reis, 2008; Sundarraj & Mok, 2010).Table 1 below shows a summary of an e-procurement system.

Table 1: Collection of features of an electronic procurement system

Feature	Explanation
e-Catalogues	Database of supplier's products/services
Punch-out	Access to supplier's website directly from buyer's system
E-request for quotes	Buyer's invitation to suppliers for quotes
Approval workflow	Automatic routing of orders to financial/business authorizers
Order dispatch	Creating purchase order automatically and sending to suppliers
E-goods receipt	Record product/service deliveries in the system
E-invoice matching	E-invoice matching, Store invoices electronically/Generate payments automatically
E-marketplace	Third party marketplace where buyers and suppliers transact and/or exchange information
E-tendering	Manage tendering process online
E-auction/negotiation	Suppliers posting competitive bids; buyers/suppliers negotiating online
E-evaluation	Tender evaluation against pre-agreed criteria
E-collaboration	Establish, manage, monitor, renew contracts and collate histories of suppliers

Source: Adopted from Soares-Aguira and Palma-Dos-Reis, 2008

On the basis of the above definitions, this study construed e-procurement to include the use of any forms of ICT hard and software. In the same vein, it construed e-procurement to include the use of all the communication networks as well as the internet in conducting the procurement process activities right from the planning stage through to contract management and evaluation in the public sector of Uganda.

Adoption of E-procurement therefore refers to the ability of procurement entity's personnel to use the internet and internet technologies to support their procurement processes. It comprises of the willingness and level of acceptance by the stakeholders to use e-procurement innovations.

2.3.2.1 Benefits of e-procurement

E-procurement also has compliance benefits by reducing on maverick purchases through tools such as catalogs and standard order processing and approval processes. Compliance will be achieved due to a simple and quick requisition-to-payment process including a user-friendly interface and pre-sourced catalogs tailored to the requirements of the individual user; a simple and quick strategic sourcing process with standard procurement processes and tools, as well as easily accessible information; and the e-procurement system, the only purchasing mechanism available (Baily, et al., 2005; Soares-Aguira & Palma-dos-Reis, 2008; Sundarraj & Mok, 2010).

Following adoption of e-procurement, the organization also benefits by having a Management Information system where key information is hard coded against the user dramatically reduces coding errors and provides highly detailed and easily accessible data. This is essential to maximize the financial benefits of strategic sourcing. A

successful e-procurement implementation will provide high quality, detailed management information and will negate the need for data warehousing or resource-heavy data mining (Baily, et al., 2005).

E-procurement comes with price benefits through greater enhanced capture and therefore and reliability of spending information; and increased confidence that spending volumes can be guaranteed from increased compliance with the system, thus allowing volume price breaks and discounts to be achieved (Soares-Aguira & Palma-dos-Reis, 2008).

Last but not least, e-procurement has payment benefits through enabled electronic payment invoices. This includes the ability to better control the business cash flow and to manage the efficient payment of suppliers due to more streamlined procurement processes providing more timely and accurate information to the accounts payable department. Potential benefits include reduced manpower and reduced spending on postage and stationery (Sundarraj & Mok, 2010).

2.4. Empirical Review

2.4.1. Management e-readiness and adoption of e-procurement

The attitude of top management in the organizations has been found to influence strategic decisions on adoption of e-procurement. Some empirical studies such as Almoawi (2011) study on adoption of e-procurement among SMEs in Saudi Arabia found out that adoption of e-commerce system generally and e-procurement inclusive was found to depend on top management orientation to acquisition of modern ICT. Khanapuri, Nayak, Soni, Sharma and Soni (2011) in their study also found out that successful implementation of e-procurement depends on top management support manifested in

providing technology leadership, resource commitment and acting on management reports.

In support of the above, Suleiman (2013) reports that management's need to shift from a manual system to a more efficient electronic system influenced adoption of e-procurement in the public sector of Tanzania. Ali and Alrayes (2014) in their Bahrain study found that management commitment and governance structure in the organization were more significant predictors of institutional adoption than initial adoption of e-procurement in selected ministries, authorities and some private companies. Ali and Alrayes (2014) study recommends that Ministries' managements should be supportive from all aspects to e-procurement initiatives and they have to support their vision and provide leadership to e-procurement ideas and projects. Furthermore, Altayyar and Beaumont-Kerridge (2016) in their Saudi Arabian study found government support as a critical success factor in adoption of e-procurement.

Some studies have specifically pointed out technological challenges to result from low management commitment to adoption of e-procurement. Mose, et al (2013) in their Kenyan study attributed the low level of adoption of e-procurement in manufacturing firms and lack of management's standardized benchmarks and the inability of the system to integrate supply chain stakeholders. The study also attributes the challenges to the immaturity of providers of e-procurement services in the marketplace.

Rahim and As-Saber (2011) Australian study suggest that the council's senior management offered extensive support for the introduction of the e-procurement system. The support is reflected in several ways: the allocation of required resources to help

create customized training programs in close collaboration with the vendor; encouraging employees to participate actively in the planning and testing stages of the system by relieving them from their daily routine activities; preparing some e-catalogues for the convenience of employees dealing with e-procurement.

2.4.2. Technological e-readiness and adoption of e-procurement

Technology as a driver to adoption of e-procurement arises from the fact that the availability of ICT infrastructure serves as an enabling factor in stimulating originations to take it up to enjoy its benefits especially in improving its service delivery (Scupola, 2009). Karnali and Kurnia (2011) found high level of adoption of B2B e-commerce initiatives by the Indonesian grocery industry to be the availability of technology which offered benefits of reduction in transaction errors and transaction costs, improved data accuracy and information quality, and faster application processes. In complement, Hatice and Mehmet (2012), attribute a high adoption rates of e-procurement in Turkey Health Sector to availability of ICT Infrastructure which was compatible with the organization's needs and values.

Ali and Alrayes (2014) in their Bahrain study found that technological resources were more significant predictors of institutional adoption than initial adoption of e-procurement in selected ministries, authorities and some private companies. Ali and Alrayes (2014) recommend that government MDAs should strive to provide a well technological environment that will embrace e-procurement projects. The use of flexible information systems will go a long way in strengthening the adoption of e-procurement in the public sector of Bahrain.

However, some studies have found a low level of adoption that they attribute to a set of challenges. Mose et al (2013) also attribute the low level of management commitment to adopt ICT as a significant challenge in adopting e-procurement among manufacturing firms in Kenya. Korir and Maina (2015) however note that the efforts to use e-procurement has been frustrated by the low resources commitment to acquire, install and maintain an e-procurement system in both the public and private sectors of developing countries.

To expedite e-procurement process in the public sector, (Mose, et al., 2013) recommend that the web content should be personalized, complete, relevant, easy to understand, and secure if one expects buyers or suppliers to initiate transactions via the internet and to return to the site on regular basis.

Furthermore, an effective and efficient e-procurement operation should have a website that provides all the necessary and detailed information required by customers (Oh, Yang, and Kim, 2014). There must be a feedback where customers can find answers to their questions and leave feedback about their experiences with the products. It must allow customers and suppliers to carry out different types of transactions. Suppliers and customers must be able to customize, submit, track and modify their orders. It must give them automatic notifications about the status of different orders. Similarly, the e-procurement application must be aligned with other e-business models and must be fully integrated into the supply chain of the business (Sila et al., 2015).

2.4.3. Staff e-readiness and adoption of e-procurement

Successful implementation of e-procurement relies on availability of skilled and proficient employees, and also providing training programs to them. In this regard, all

employees engaged with e-procurement activities should be familiar with e-procurement concepts (Mohammadi; 2013). In support, Nayak, et al (2011) conclude that successful implementation of e-procurement depends on user acceptance of new information system and staff training. Altayyar and Beaumont-Kerridge (2016) equally attributes successful adoption of e-procurement to providing IT-related educational programs.

Orina (2013) in her study on e-procurement readiness factors in Kenya's Public sector found that resistance to change, lack of enthusiasm, staff skills, and to some extent procurement policies impacted the readiness to adopt e-procurement in public institutions. Furthermore, Ali and Alrayes (2014) in their Bahrain study found that human resources were more significant predictors of institutional adoption than initial adoption of e-procurement in selected ministries, authorities and some private companies.

However, some scholars contend that the adoption of technology and e-procurement too suffer from people related factors such as the resistance to accept the innovations, lack of awareness, limited skills of employees in the organization (Khanapuri, et al., 2011;Mose, et al., 2013). Mose, et al. (2013) specifically point out that failure to drop traditional systems to adopt modern ICT enabled procurement operations has served to constrain adoption of e-procurement in many organizations.

2.4. Summary of Literature review

The review of the existing literature suggests the need for organizational e-readiness to adopt e-procurement in both the public and private sector entities. However, the literature on the organizational e-readiness factor of management commitment was predominantly from developed economies with scanty studies focusing on organizational e-readiness

and adoption of e-procurement in the public sector in Uganda and specifically in the armed forces. Similarly, the literature on technological e-readiness and adoption of e-procurement has largely been foreign based with no local studies carried out in the security sector of Uganda. Moreover, there has been no study examining the staff e-readiness factors affecting adoption of e-procurement in the armed forces of a developing country like Uganda. In line with the raised literature gaps, this study fills the literature and knowledge gaps by examining the relationship between management e-readiness, technological and staff and adoption of e-procurement in the Ugandan armed forces with a special focus on the Ugandan Police Force.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section presents research methods that were used to carry out the study. It covers the research design, target population, sample size and technique, data collection methods and instruments, validity and reliability, measurement of variables and data analysis.

3.2 Research Design

The study used a Cross-Sectional design adopting quantitative and qualitative approaches. The Cross-Sectional design captures a population at one particular point in time (Amin, 2005). It was preferred in order to enable a one point in time investigation on the relationship between organizational e-readiness and adoption of e-procurement in Ugandan Armed Forces and UPF in particular. The quantitative approach is sought to quantify and establish the relationships while the qualitative approach helps gain the in-depth explanations on organizational e-readiness to adopt e-procurement.

3.3. Study Population

According to UPF records, there are 194 key stakeholders who interact with the procurement and disposal function in different categories of Accounting Officer, Contracts Committee, PDU, User Departments, and IT and Information Management department. These were considered for the study because of their personal experiences with UPF internal e-readiness to adopt e-procurement and they are directly involved as

planners, users, adjudicators, coordinators of procurement activities and management of ICT in the force.

3.4. Sample Size and Procedure

The study considered a sample size of 156 respondents based on Krejcie and Morgan (1970) sampling guidelines as detailed in table 1 below.

Table 2: Population Category and Sample Size

Category	Population	Sample	Sampling technique
Accounting Officer/Under Secretary	1	1	Census
Contracts Committee	5	5	Census
PDU	8	8	Census
User Depts.	135	102	Simple random
IT and Information Mgt.	45	40	Purposive
Total	**194**	**156**	

Source: UPF Records, June 30th, 2017.

3.5. Sampling Technique

The study used purposive sampling that involves the researcher using own judgment or common sense regarding the participants from whom the information was collected. Thus the selection of the respondents was based on the researcher's experience with the respondents' possession of the required information on organizational e-readiness and e-procurement adoption based on Amin (2005) guidance on purposive sampling. Purposive sampling was used for respondents from the Department of IT & IM. For respondents from the PDU, Contracts Committee and the Accounting officer, the study used Census

Sampling where every unit in the population was selected as recommended by Kukutai., (2014).

This study also used simple random sampling that is a sample obtained from the population in such a way that samples of the same size have equal chances of being selected (Amin, 2005). Simple random sampling was used for User Departments.

3.6. Data Collection Methods

The study used a survey approach where both quantitative and qualitative data was collected using questionnaire and interview.

3.6.1. Questionnaire Survey Method

The questionnaire was used to collect quantifiable primary data from the selected respondents by personally delivering them to the respondents. The questionnaire was issued to all the 156 respondents in their different categories where the respondents recorded their answers within closely defined alternatives. The choice of the questionnaire was on the basis that it could collect vast amounts of data in short time with less resources (Sekeran, 2009). The questionnaire was also useful in collecting information on perceptions since the variables of organizational e-readiness and intent to adopt e-procurement cannot be observed or reliably reviewed from secondary data (Amin, 2005).

3.6.2. Interview method

An interview guide was used to enable gaining of in-depth information from the targeted respondents through forms of face to face conversations and probing of the respondent's responses to gain detailed explanations on the force's e-readiness and the resultant

adoption of e-procurement as suggested by Sekeran (2009). The researcher interviewed three senior officers as respondents of which two were got from the Police PDU and the other from the Department of IT& IM. The decision to choose the second respondent from the PDU was made after failing to secure an interview with the Accounting Officer and a member of a User Departments.

3.7. Data Collection Instruments

3.7.1. Self-administered Questionnaire

The study used a close-ended self-administered questionnaire divided into sections of background information, organizational e-readiness, and adoption of e-procurement (See Appendix I). The questionnaire was scored on a five point Likert scale of 5- Strongly Agree; 4- Agree; 3- Not Sure; 2- Disagree; and 1- Strongly Disagree. This was used to get quantifiable primary data from individual respondents. Table 3 below shows the summary of the questionnaire by variable and items.

Table 3: Indicators and corresponding questions

Section	Factor	Indicator	Question No.
Background information (Bio-data)			1-5
Organizational e-readiness	Management e-readiness	Vision	1, 2
		Project support	3, 4, 5, 6
	Technological e-readiness	IT Policy	1, 2
		Hardware and Software	3, 4, 5
		Communication Networks	6, 7, 8, 9
	Staff e-readiness	Staff commitment	1, 2, 3
		Training & Development	4, 5, 6
Adoption of EP	Initial Adoption	Partly adopted	1-8
	Institutionalization	Fully adopted	1-6

Source: Adapted from Molla and Licker (2005)

3.7.2. Interview Guide

The interview schedule used semi structured questions focusing on areas of organizational e-readiness dimensions of management e-readiness, technological and staff e-readiness to adopt e-procurement in the UPF (See Appendix II).

3.8 Measurement of variables

The organizational e-readiness dimensions of management e-readiness, technological and staff e-readiness were measured based on standardized items developed by Molla and Licker (2005). E-Procurement adoption was measured using the items developed by Davis (1989) on technology acceptance determinants of perceived usefulness and perceived ease of use. These were channeled into observable and measureable elements to enable the development of an index of the concept. A five point Likert scale namely: 5-Strongly agree; 4- Agree; 3- Not sure; 2- Disagree; and 1- Strongly disagree was used to measure both the independent and dependent variables.

3.9. Data collection procedure

After successful defense of the proposal, an introductory letter from the Graduate School-Kyambogo University was used to seek permission to conduct the study in the UPF (See Appendix IV).The management of UPF through the Department of ICT Research Development and Innovation also granted permission to that effect to collect data (See Appendix V).Anonymity and confidentiality of the respondents was observed by not asking the respondents to put their names on the questionnaires. Collected data was checked for its completeness and there after entered into SPSS in preparation for analysis.

3.10. Validity and Reliability

3.10.1. Validity

The validity of the instruments was tested using the Content Validity Index. This involved judges scoring the relevance of the questions in the instruments in relation to the study variables and a consensus judgment given on each variable taking only variables scoring above 0.70. (See Table 4 below).The Content Validity Index (CVI) was arrived at using Nunnally and Bernstein (1994) formula:

$$CVI = \frac{\text{Total number of items declared valid}}{\text{Total number of item}}$$

3.10.2. Reliability

The study questionnaire was pretested for its reliability on a sample of 10 same targeted respondents to examine individual questions as well as the whole questionnaire very carefully (Nunnally and Bernstein, 1994). Reliability measures the consistence of the instrument in measuring what it is supposed to measure (Nunnally and Bernstein, 1994). The study used the Cronbach's alpha coefficient test to show how reliable the data was by using the Software Package for Social Sciences (SPSS) taking only variables scoring above 0.70 as suggested by Nunnally and Bernstein (1994) and the findings are presented in Table 4 below.

Table 4: Validity and Reliability Results

Variable	CVI	Cronbach's Alpha	No. of Items
Organizational e-readiness	.810	.813	21
Adoption of e-procurement	.786	.778	14

Source: SPSS dataset and Expert Judgment

Table 4 shows that all variables scored above 0.70 suggesting a high CVI and Cronbach's alpha. Thus the items used to measure each variable were relevant and consistent and therefore valid and reliable in measuring organizational e-readiness and adoption of e-procurement.

3.11. Data Analysis

3.11.1. Quantitative Analysis

Quantitative data was analyzed using descriptive statistics of frequencies, percentages, mean and standard deviation for each of the variables used in the study to show the distribution of responses on the Uganda Police Force's e-readiness and e-procurement adoption. Pearson's correlation statistics was used to test the relationships at 99 and 95 confidence limits. A positive correlation indicates a direct positive relationship between the variables while a negative correlation indicates an inverse, negative relationship between the two variables. A multiple regression analysis using ANOVA statistics of adjusted R^2 values, beta, t-values and significance values as suggested by Amin (2005) was used to determine the extent to which the force's e-readiness predicts e-procurement acceptance and continual use.

3.11.2. Qualitative Analysis

The study used the content analysis technique to analyze qualitative data where themes identified in the respondent's narratives on organizational e-readiness were analyzed for their implications, inferences and conclusions. Further qualitative analysis involved comparing the qualitative data with the quantitative data findings.

3.12. Ethical Considerations

As part of the ethical considerations, the researcher used an introductory letter from Kyambogo University to seek permission to conduct the study. The respondents were asked for their consent and not to indicate their names on the questionnaire. The final report was defended at Viva before a panel constituted by Kyambogo University Graduate School. The report was further presented for approval and adoption of recommendations by the relevant UPF Directorate and the PDU.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1. Introduction

This chapter presents, analyses and interprets the study findings of organizational e-readiness and adoption of e-procurement in the UPF based on the information obtained from the study questionnaire and interviews. It presents the response rate, background information about the respondents and empirical findings on organizational e-readiness and adoption of e-procurement. A multiple regression analysis is also presented.

4.2. Response Rate

A total of 156 questionnaires were issued but 109 usable questionnaires were returned in time for consideration in the study giving a response rate of 70% which is high since 7 in every 10 questionnaires issued were returned. A total of three interviews were targeted and were successfully conducted. The results are therefore a good representation of the population from which the sample was selected.

4.3. Background Information about the Respondents

This sub section presents the characteristics of the respondents used in the study in relation to the their gender, age group, level of education, department/unit in UPF and time worked in the position with the force as these are key determinants of perceptions of organizational e-readiness and adoption of e-procurement in the force.

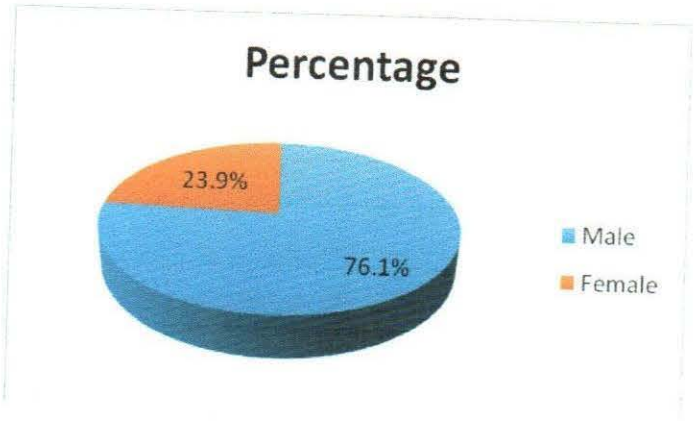

Figure 3: Gender of the respondents (Primary data)

Figure 3 shows that the majority of the respondents (76.1%) were male while the female constituted of only 23.9% of the total number of respondents. The implication was that given the nature of its work, the force relied more on male staff to deliver its mandate.

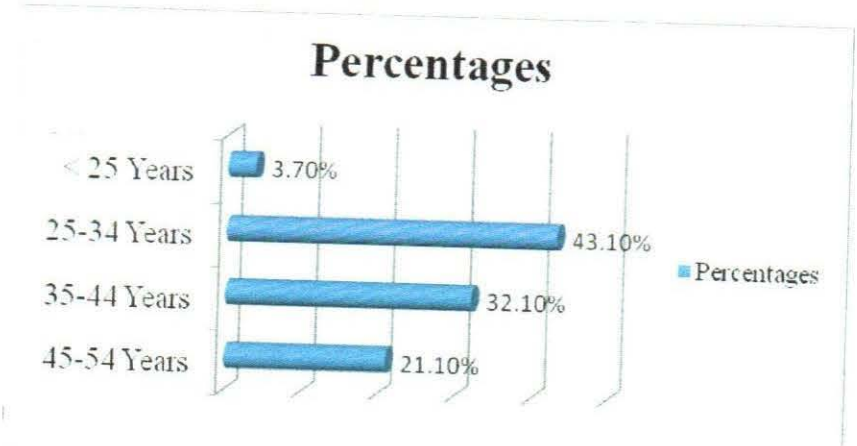

Figure 4: The age group of the respondents (Primary data)

Figure 4 above shows that most officers in the UPF were still youthful (25-34 years) with 43.1% and therefore easily trainable to encourage them to use the e-procurement platforms. However there was a reasonable number of them (21.1%) who were fairly old

and nearing the retirement age of 60 years. Their training to get ICT skills was therefore in doubt given their advanced age.

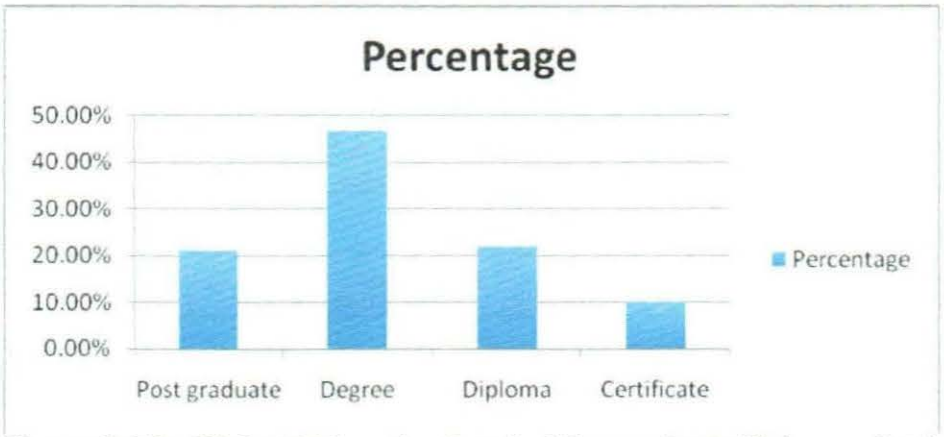

Figure 5: The Highest Education Level of Respondents (Primary data)

Figure 5 above shows that most staff in the force had higher qualifications since about 7 in every 10 had attained a degree level of education and above. There were however those who had low education qualifications a factor which might constrain their abilities to use the e-procurement innovation for lack of prior training in ICT.

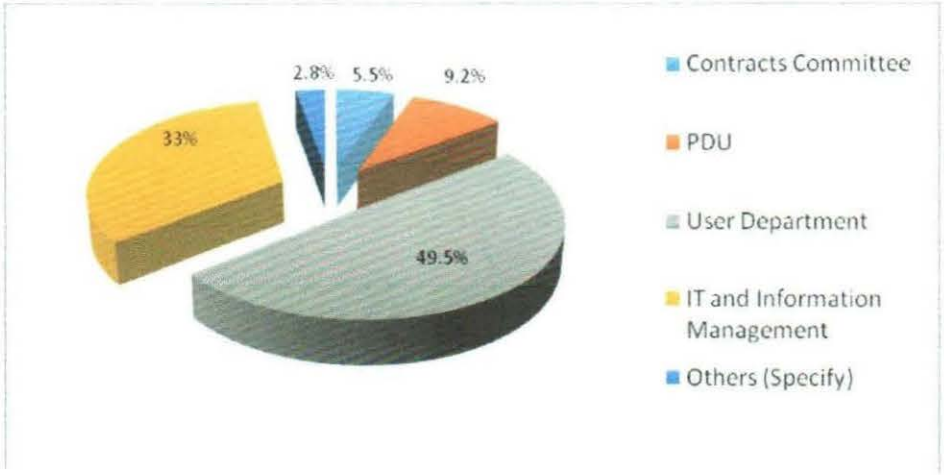

Figure 6: Department of the respondent (Primary data)

Table 6 above shows that most respondents were users with 49.5% followed by the IT

and IM staff with 33%.Key procurement stakeholders notably contracts committee, PDU, User department and IT&IM in the e-procurement were accessed in the study. The findings were therefore representative of key stakeholders in the procurement function within the Uganda Police Force.

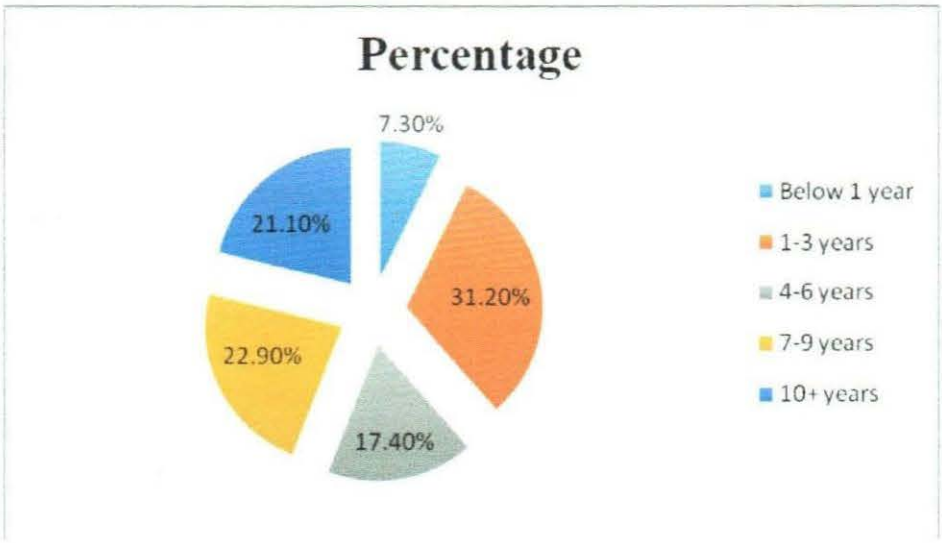

Figure 7: Time worked in the position (Primary data)

Figure 7 above shows that most respondents had adequate experience with handling procurement related tasks having worked in their respective positions for at least a year and above including 21.1% with 10 + years. Only 7.3% has worked in the force for less than one year.

4.4. Management e-readiness and adoption of e-procurement in UPF

The first objective of the study was to examine the extent to which management e-readiness influences adoption of e-procurement in the UPF. Two variables are identified in this object namely management e-readiness (one of the dimensions of organizational e-readiness) and adoption of e-procurement (a dependent variable). Each of the variables was measured using items scored on a five point Likert scale ranging from 5= Strongly

Agree, 4= Agree, 3= Not Sure, 2= Disagree, and 1= Strongly Disagree. A mean result below 3.5 suggests low e-procurement acceptance while a mean result of ≥3.5 suggests a high level of acceptance of e-procurement on a particular item of the variable.

Table 5: Descriptive results for adoption of e-procurement

	SDA	DA	NS	A	SA	Mean	Std. Dev
	Percentages						
1. Adopting e-procurement enhances achievement of procurement related targets	3.7	17.4	11	34.9	33	3.76	1.193
2. Embracing the use of e-procurement enhances quality of procurement related outputs	2.8	17.4	14.7	33	32.1	3.74	1.166
3. Embracing the use of e-procurement enhances quantity of procurement output	1.8	21.1	11	32.1	33.9	3.75	1.188
4. Embracing the use of e-procurement enhances timely accomplishment of procurement tasks	0.9	18.3	7.3	33.9	39.4	3.93	1.136
5. Adoption of e-procurement shall make management of procurement easier	2.8	16.5	11.9	33.9	34.9	3.82	1.164
6. It is easier for me to learn how to use e-procurement platforms	2.8	14.7	14.7	38.5	29.4	3.77	1.111
7. It is easier for me to use e-procurement applications	3.7	19.3	13.8	37.6	25.7	3.62	1.169
8. I am flexible in adopting the use of e-procurement applications to accomplish procurement tasks	3.7	9.3	9.3	47.2	30.6	3.92	1.051
9. I will continuously use e-procurement platforms to perform my procurement operations	6.4	22	30.3	29.4	11.9	3.18	1.107
10. All UPF staff are to use e-procurement platforms in conducting all procurement activities	4.6	25.7	39.4	22	8.3	3.04	.999

11. All suppliers are encouraged to use e-procurement platforms	16.5	20.2	30.3	26.6	6.4	2.86	1.174
12. E-procurement has been rolled out in UPF	11	46.8	16.5	20.2	5.5	2.62	1.095
13. Using e-procurement is part of the organizational culture in the UPF	12.8	39.4	19.3	22	6.4	2.70	1.143
14. The use of e-procurement has been embedded in the UPF	17.4	25.7	27.5	23.9	5.5	2.74	1.166

Source: Primary data

Table 5 above shows that 67.9% of the respondents agreed (mean =3.76) that adopting e-procurement enhances achievement of procurement related target while 65.1% of the respondents agreed (mean = 3.74) that embracing the use of e-procurement enhances quality of procurement related outputs. Furthermore, a total of 66% of the respondents agreed (mean = 3.75) that embracing the use of e-procurement enhances quantity of procurement output. The findings suggest a high level of perceived usefulness of the e-procurement innovation since about 7 in every 10 staff appreciate the usefulness of e-procurement in improving their performance in procurement target, quality and quantity of procurement outputs. However, 3 in every 10 staff would not adopt e-procurement because of low perceived usefulness in improving on procurement target, quality and quantity of procurement outputs.

Furthermore, a total of 73.3% of the respondents agreed (mean = 3.93) that embracing the use of e-procurement enhances timely accomplishment of procurement tasks while another 68.8% agreed that adoption of e-procurement make management of procurement easier (mean = 3.82). The implication was that about 7 in every 10 respondents agreed to a high level of perceived usefulness of the e-procurement innovation for it enabled them to promptly and easily accomplish procurement tasks and would always use it whenever

appropriate. However, 3 in every 10 staff would not adopt e-procurement because of low perceived usefulness in timeliness and ease of accomplishing procurement tasks.

Table 5 further shows that majority of 67.9% of the respondents agreed (mean = 3.77) that it is easier for them to learn how to use e-procurement platforms, 63.3% indicated that it is easier for them to use e-procurement applications (mean = 3.62) while 77.8% that they were flexible in adopting the use of e-procurement applications to accomplish procurement tasks (mean = 3.92). These findings reveal a high level of perceived ease of use as about 7 in every 10 staff perceived the e-procurement system to be easy to learn and therefore embrace it. However, 30% of the staff felt the e-procurement system was difficult to learn, a factor that constrains their utilization of the e-procurement innovation.

The findings in table 5 however reveal a low level of institutionalization of the e-procurement in the force as the staff disagreed that; - they would continuously use e-procurement platforms (mean = 3.18), all UPF staff are to use e-procurement platforms in conducting all procurement activities (mean = 3.04), all suppliers have been encouraged to use e-procurement platforms in conducting procurement business with UPF (mean = 2.86). Furthermore, the respondents disagreed with the use of e-procurement has been rolled out to all procurement management levels in UPF (mean = 2.62) while they also disagreed that using e-procurement was part of the organizational culture in the UPF (mean = 2.70). The management of UPF needs to promote the use of e-procurement innovations in as many operations as possible for its expeditious institutionalization.

Management e-readiness

Management e-readiness was one of the dimensions of organizational e-readiness and was measured using 6 items scored on a 5-point Likert scale. A mean result below 3.5 suggests low management e-readiness while a mean result of ≥3.5 suggests a high level of management e-readiness on that particular item.

Table 6: Descriptive results for management e-readiness

	SDA	DA	NS	A	SA	Mean	Std. Dev
1. The management of UPF has set a vision on e-procurement	6.4	15.6	21.1	33	23.9	3.52	1.199
2. The e-procurement vision is clear to guide e-procurement adoption	20.4	32.4	17.6	23.1	6.5	2.63	1.227
3. The management is aware of challenges to attaining the e-procurement vision	3.7	13.8	10.1	45.9	26.6	3.78	1.100
4. UPF management demonstrates financial resource commitment for adoption of e-procurement	9.2	23.9	28.4	30.3	8.3	3.05	1.117
5. The UPF has set up a steering committee to oversee e-procurement adoption	3.7	26.6	36.7	28.4	4.6	3.04	.942
6. The management of UPF is committed to address staff challenges that may arise as a result of adoption of e-procurement	12.8	35.8	21.1	26.6	3.7	2.72	1.104

Source: Primary data

Table 6 above shows that 56.9% of the respondents agreed (mean = 3.52) that the management of UPF has set a vision on e-procurement while 21.1% were not sure and 22% disagreed. The implication was that although there existed an e-procurement vision, some key procurement related staff were not aware of it probably because it had not been adequately communicated.

This was verified in the interview of which the one interviewee from PDU noted:

"There could be some effort to develop the vision but not sure whether the vision exists".

Another interview from PDU had this to say:

UPF is awaiting a National decision through the National Information Technology Authority (NITA), Public Procurement and Disposal of Public Assets Authority (PPDA) and MoFPED to pronounce themselves on the vision for e-procurement adoption

However one interviewee from the IT&IM clarified on the issue of vision and had this to say:

At the moment, all government entities are guided by the e-procurement vision formulated by government of Uganda and there's effort by the UPF management to implement a National e-procurement vision. So UPF operates within the broader National vision on e-procurement. As a precursor to e-procurement adoption, government entities have been engaged with the Planned Based System (PBS) as a planning stage for the adoption of e-procurement.

A reflection of the quantitative and qualitative findings reveals that the UPF being a government entity is bound by the government's e-procurement vision. However, most PDE staff had little or no knowledge about this vision. There is need to improve on communication and integration of national e-procurement vision within the e-procurement operations of the force.

Similarly, a majority of 72.5% of the respondents agreed (mean = 3.78) that the UPF management was aware of challenges to attaining the e-procurement vision suggesting that there was management effort to analyze and establish the challenges that may constrain adoption of e-procurement in the force. This should be commended as it enables the management to lobby government and other stakeholders to direct effort to manage the challenges to initial adoption and institutionalization of e-procurement processes in the force.

However, a total of 52.8% disagreed (mean = 2.63) that the e-procurement vision was clear to guide e-procurement adoption processes while 29.6% agreed that it was clear and 17.6% were not sure. The implication was that more than half of the staff felt that the e-procurement vision was not clear and thus needs to be reviewed so as to guide operationalization of the e-procurement policy in the force.

In an interview on the attributes on a clear e-procurement vision, one interviewee from the PDU had this to say:

> *The e-procurement vision to me should cover the provision of the ICT Infrastructure, training of both internal and external procurement stakeholders and cater for internet stability. The e-procurement vision should cover issues of stabilizing the internet, personnel, equipment, skills and competence development*

The interviewee from the IT&IM department of the force observed:

> *The e-procurement strategy should build the e-procurement project strategy within the UPF. There is need to carryout benchmark on the best performing entities, manage change and staff perceptions, formulate a risk strategy and do an evaluation. From here, the management can then decide on whether to adopt e-procurement in phases, full blast or just a combination of the two.*

The interview findings suggest an array of useful components ranging from ICT infrastructure, capacity building, IT strategy and risk management that if considered will enhance adoption of e-procurement in the UPF. As suggested by one interviewee, benchmarking to gain knowledge on best practices should be sought by the management

A total of 33.1% of the respondents disagreed that UPF management demonstrated financial resource commitment for adoption of e-procurement while 28.4% were not sure and 38.6% agreed. The overall mean of 3.05 suggests a low level of management financial resource commitment. Thus the adoption of e-procurement is constrained by the low level of financial resource support. There is need to communicate to the procurement

stakeholders in UPF the financial resource implications due on the budget allocations committed to e-procurement adoption processes in the force.

In interview, one PDU interviewee noted:

> *"There is low commitment from the management of the force to mainstream the e-procurement into the UPFs operations as priority is given to its core mandate of maintaining law and order. He maintained that with the prevailing situations of increased murders, public disorder and need to improve on staff accommodation, the force more often than not concentrates on other priorities than the adoption of e-procurement process"*

The second interviewee from PDU equally retorted:

> *"No commitment for now internally, but it is still at the PPDA level".*

The IT & IM interviewee was more elaborate and noted

> *"I have noticed low-level commitment. In terms of financial commitment, am personally not sure about the budget for e-procurement adoption processes. However having a budget without an operational strategy would definitely constrain the implementation of e-procurement in the force. So first things should come first, we need a strategy to guide any consequential interventions on e-procurement in government as a whole and UPF in particular"*

Key among other indicators of management e-readiness is instituting a procurement steering committee to oversee the e-procurement adoption process. The findings above show that 30.3% of the respondents disagreed with the force setting up a steering committee on e-procurement, 36.7% were not sure while 33% agreed. The overall mean is 3.04 which suggested a low level of e-readiness indicator. The implication was that although the force could have instituted an e-procurement committee, it has not been formalized and communicated to the different procurement stakeholders.

From the interview findings, it was found out that the UPF did not actually have a steering committee on e-procurement adoption and to quote one interviewee from the PDU, he opined:

"I have no knowledge about the e-procurement steering committee. I believe that if at all it is there, then it must be very weak and inactive"

The other interviewee from IT & IM was quoted as:

"The UPF has no steering committee in place and we still depend on the PPDA law which provides for a contracts committee to adjudicate on procurement matters in the PDE"

A total of 48.6% of the respondents disagreed that the management of UPF is committed to address staff challenges that may arise as a result of adoption of e-procurement while 21.1% were not sure while 30.3% agreed. The mean result of 2.72 suggests a low level of management commitment to solve human resource challenges. There is need to communicate and demonstrate management commitment to solve human resource issues for expeditious adoption and institutionalization of e-procurement processes in the UPF.

In an interview on the management challenges in the e-procurement adoption, one interviewee from the PDU outlined:

"Lack of political will, lack of training, lack of funds, lack of adequate policy, no specific law on e-procurement adoption, poor internet, connectivity issues, lack of funds, etc. The management of UPF needs to mitigate these challenges by communicating the policy, involve procurement practitioners, sensitization and management of change, sourcing the funds and training of staff for compliance"

The IT &IM, interviewee equally observed:

"The major management challenges range from change management issues concerning the perceptions of staff towards the new initiative; lack of training for the initiators; financial constraints; infrastructural issues; sensitization and awareness issues. As UPF we need to manage change; train staff, build infrastructure, finance the project and invest in awareness and sensitization of stakeholders"

4.4.1. Correlation analysis between management e-readiness and adoption of e-procurement

To test if there was a significant relationship between management e-readiness and adoption of e-procurement, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics. The findings are presented in the table below.

Table 7: Correlation Matrix between management e-readiness and adoption of e-procurement

		Management e-readiness	E-procurement adoption
Management e-readiness	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	109	
E-procurement adoption	Pearson Correlation	.478**	1
	Sig. (2-tailed)	.000	
	N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).			

$P \leq 0.05$

Source: Primary data

Table 7 above shows the Pearson's correlation coefficient r = 0.478** between management e-readiness and adoption of e-procurement suggesting that the two variables had a positive significant relationship. The r = 0.478** and significance p = 0.000 between management e-readiness and adoption of e-procurement suggest that there was a moderate positive and significant relationship between management e-readiness and adoption of e-procurement. The e-procurement adoption managerial implication was that initial adoption and institutionalization of e-procurement depends on the extent to which management sets and communicates the organizations e-procurement vision and commits the necessary financial resources as it manages the challenges in attaining the e-

procurement vision. The findings also mean that the gaps in management e-readiness constrain employee acceptance and institutionalization of e-procurement in conducting procurement operations at their various levels.

4.4.2. Multiple regression analysis

A multiple regression analysis was conducted to establish the combined predictive of management, technological and staff e-readiness on adoption of e-procurement in the force and also to establish if the relationship was causal and if so, which among the variables was the most significant predictor of the variance in e-procurement adoption. Table 8 below shows a summary of multiple results.

Table 8: Prediction Model for the Study Variables

Model		R		R Square	Adjusted R Square	Std. Error of the Estimate	
1		.657[a]		.432	.416	.44012	
Model		Unstandardized Coefficients			Standardized Coefficients	t	Sig.
		B		Std. Error	Beta		
1	(Constant)	1.170		.256		4.567	.000
	Management e-readiness	.173		.077	.198	2.246	.027
	Technological e-readiness	.347		.076	.389	4.573	.000
	Staff e-readiness	.169		.066	.228	2.575	.011
a. Predictors: (Constant), Staff e-readiness, Technological e-readiness, Management readiness b. Dependent Variable: E-procurement adoption							

$P \leq 0.05$

Source: Primary data

Table 8 shows adjusted R^2 of 0.416 suggesting that staff e-readiness, technological e-readiness and management e-readiness all predict 41.6% of the variance in e-procurement adoption in UPF and they were significant predictors. Other variables other than organizational e-readiness predict the remaining variance of 58.4%.

The standardized coefficient results for management e-readiness Beta-β1= 0.198, t= 2.246, Sig. = 0.027 suggest that actually management e-readiness is a significant predictor of adoption of e-procurement in the force since a unit increase in management commitment results in 0.198 enhanced adoption of e-procurement in the force which is significant (t= 2.246, sig = 0.027 which < 0.05). Results however reveal management e-readiness as the least significant predictor of-procurement adoption as compared to technological e-readiness (Beta-β1= 0.389, t= 4.573, Sig. = 0.000) and staff e-readiness (Beta-β1= 0.228, t= 2.575, Sig. = 0.011).

To answer the first research question, *to what extent does management e-readiness influence adoption of e-procurement in the UPF?* This study affirms that management e-readiness positively and significantly influences adoption of e-procurement in the UPF. Therefore, management needs to commit itself by communicating a clear vision and deploying the necessary resources for enhanced acceptance of initial adoption and institutionalization of e-procurement.

4.5. Technological e-readiness and adoption of e-procurement in the UPF

The second objective of the study was to analyze the extent to which technological e-readiness affects adoption of e-procurement in the UPF. Technological e-readiness was measured using 9 items scored on a five point Likert scale ranging from 5= Strongly Agree, 4= Agree, 3= Not Sure, 2= Disagree and 1= Strongly Disagree. A mean result below 3.5 suggests low technological e-readiness while a mean result of ≥3.5 suggests a high level of technological e-readiness on that particular item.

Table 9: Descriptive results for technological readiness

	SDA	DA	NS	A	SA	Mean	Std. Dev
1. The UPF is implementing IT Policy guidelines that incorporate e-procurement	16.5	29.4	23.9	22	8.3	2.76	1.209
2. The UPF IT policy adequately provides for e-procurement adoption	9.2	30.3	30.3	22.9	7.3	2.89	1.092
3. I have access to a well-functioning computer set to perform procurement activities	3.7	20.2	5.5	38.5	32.1	3.75	1.211
4. I have access to a well-functioning printer	3.7	11.9	8.3	45	31.2	3.88	1.095
5. The UPF has an e-procurement software application used to perform e-procurement operations	15.7	30.6	25.9	22.2	5.6	2.71	1.144
6. I have access to a well-functioning Local Area Network (LAN)	8.3	10.1	6.4	35.8	39.4	3.88	1.267
7. I have access to a well-functioning Wide Area Network (WAN)	7.4	16.7	5.6	35.2	35.2	3.74	1.300
8. There is a UPF website used to advertise procurement opportunities	3.7	15.6	11	41.3	28.4	3.75	1.140
9. I have access to a stable internet connectivity in UPF to perform e-procurement operations	10.1	33.	22.9	26.6	7.3	2.88	1.136

Source: Primary data

Table 9 above shows that 70.6% of the respondents agreed (mean = 3.75) that they had access to a well-functioning computer, while 76.2% agreed (mean = 3.88) that they had access to printer and 75.2% indicated that they had access to LAN (mean = 3.98) and WAN (mean 3.74) and website (mean = 3.75). These findings suggest a high level of access to the necessary ICT infrastructure for implementation of e-procurement among 8 in every 10 staff in the force.

The respondents however disagreed with UPF having an e-procurement software

application used to perform e-procurement operations (mean = 2.71) and having access to a stable internet connectivity in UPF to perform e-procurement operations (mean = 2.88). It was inferred that initial adoption and institutionalization of e-procurement could be constrained by lack of relevant e-procurement software and unstable internet connectivity to facilitate e-procurement based operations. These need to be procured for effective initial adoption and institutionalization of e-procurement in the force.

The above observation is supported by the interview findings where all three interviewees rate the current status on technological infrastructure to be wanting and to quote one from IT&IM:

> *"In some offices we have shortages and officers have to share one computer. As UPF we have no e-procurement software and currently we are using e-supplier registration and EFT for registration and payment of suppliers respectively. All these are linked to URA and its mandatory not to pay cash to suppliers but through the systems so established"*

Asked on the technological challenges, the interviewees enumerated:

> *"Unstable internet, poor connectivity, high costs of internet, lack of the software and lack of enough government support He, noted poor connectivity, unstable network, lack of specific guidelines for e-procurement adoption at Police level, and poor infrastructure"*

Respondents further disagreed with the force implementing IT policy guidelines that incorporate e-procurement (mean = 2.76) while they also disagreed with the UPF IT policy adequately providing for e-procurement (mean = 2.89). The findings suggest that initial adoption and institutionalization of e-procurement could be constrained by inadequacies in the e- procurement policy and guidelines. Policy issues need to be addressed by the relevant officers if the force is to ensure a faster e-procurement adoption process.

In an interview, one interviewee from the IT & IM when asked about the e-procurement policy observed:

> *"There is a draft ICT policy but even in its current form it is not specific on e-procurement. We can say the general effort is fair since there's something at hand"*

Another interviewee from the PDU noted:

> *"I believe there is some effort to develop an IT policy for e-procurements but what still lacks is the facilitation in terms of financing. For instance the UPF has a whole Directorate of ICT in place with the staff and the budget. These have been instrumental in developing e-procurement platforms although still at a basic level"*

4.5.1. Correlation analysis between technological e-readiness and adoption of e-procurement

To test if there was a significant relationship between technological e-readiness and adoption of e-procurement a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics and the findings are presented in the Table below;

Table 10: Correlation Matrix between technological e-readiness and adoption of e-procurement in the UPF

		Technological e-readiness	E-procurement adoption
Technological e-readiness	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	109	
E-procurement adoption	Pearson Correlation	.575**	1
	Sig. (2-tailed)	.000	
	N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).			

Source: Primary data

Table 10 above shows the Pearson's correlation coefficient r = 0.575** between technological e-readiness and adoption of e-procurement suggesting that the two variables had a positive significant relationship. The r = 0.575** and significance p = 0.000 between technological e-readiness and adoption of e-procurement suggests that there was a high positive and significant relationship between technological e-readiness and adoption of e-procurement. The e-procurement adoption managerial implication was that initial adoption and institutionalization of e-procurement depend on the adequacy of the IT policy guidelines and the availability of functional ICT infrastructure. The findings also mean that inadequate ICT policy and infrastructure constrain the adoption of e-procurement innovations in the forces.

The standardized coefficient results in the multiple regression table 8 above for technological e-readiness Beta-β1= 0.389, t= 4.573, Sig. = 0.000 suggest that technological e-readiness was the most significant predictor in the variance of adoption of e-procurement in the force since a unit increase in technological e-readiness results in only 0.389 enhanced adoption of e-procurement in the force which is significant (t= 4.573, sig = 0.000 which is < 0.05).

To answer the second research question, *to what extent does technological e-readiness affect the adoption of e-procurement in the UPF?* This study observes that technological e-readiness greatly affects the adoption of e-procurement in the UPF. Therefore, the necessary ICT policy guidelines and infrastructure need to be put in place to expedite acceptance of initial adoption and institutionalization of e-procurement in the force.

4.6. Staff e-readiness and adoption of e-procurement in the UPF

The third objective of the study was to establish the relationship between staff e-readiness and adoption of e-procurement in the UPF. Staff e-readiness was measured using 6 items scored on a five point Likert scale ranging from 5= Strongly Agreed, 4= Agree, 3= Not Sure, 2= Disagree and 1= Strongly Disagree. A mean result below 3.5 suggests low staff e-readiness while a mean result of ≥3.5 suggests a high level of staff e-readiness on that particular item. The findings are presented in the table below;

Table 11: Descriptive results for staff e-readiness

	SDA	DA	NS	A	SA	Mean	Std. Dev
1. I am committed to using e-procurement platforms to improve procurement operations	15.6	29.4	21.1	22.9	11	2.84	1.256
2. I have access to committed internal IT staff support	5.6	10.2	12	46.3	25.9	3.77	1.116
3. I have access to committed external IT staff support	13.9	30.6	19.4	29.6	6.5	2.84	1.185
4. I have benefited from computer training opportunities offered by UPF on how to conduct e-procurement operations	16.7	38.9	15.7	23.1	5.6	2.62	1.174
5. I have adequate computer skills to perform e-procurement tasks	11.9	22.9	25.7	28.4	11	3.04	1.201
6. I have adequate experience in network-based computer operations to handle e-procurement tasks	17.4	25.7	24.8	22	10.1	2.82	1.248

Source: Primary data

Table 11 above shows that majority of 72.2% of the respondents agreed (mean = 3.77) that they had access to committed internal IT staff support suggesting that the force boasted of available IT staff support. This implied high level of internal staff e-readiness to using e-procurement innovations. However, 15.8% of the respondents disagreed on

having access to internal IT staff support while 12% were not sure which implied a limitation to using e-procurement innovation.

A reasonable number of respondents (44.5%) disagreed on having access to external IT staff support (mean = 2.84). The implication was that about half of the staff were constrained in using the e-procurement innovation for lack of access to external IT staff support. These need to be sourced and facilitated to expedite the e-procurement adoption and institutionalization process in the force.

Asked to comment on external IT staff support, the IT & IM interviewee had this to say:

> *"The force is in good working relations with other government agencies like National Information Technology Authority (NITA), PPDA and the Ministry of Information Communication Technology (MoICT), so accessing staff support would not be a problem. Staff-related challenges ranged from fear for change, lack of skills and experience in handling e-procurement transactions, lack of sensitization, lack of facilitation, and lack of training and poor facilitation"*

In relation to staff training, majority of 55.6% of the respondents disagreed (mean = 2.62) that they had benefited from computer training opportunities offered by UPF on how to conduct e-procurement operations suggesting a low level of staff capacity building to equip them with the necessary skills to conduct e-procurement. Indeed, only 39.4% indicated that they had adequate computer skills to perform e-procurement tasks while 34.8% disagreed and 25.7% were not sure. The mean of 3.04 reveals a low level of computer skills to perform e-procurement tasks within the force. Furthermore, only 32.1% felt that they had adequate experience in network-based computer operations to handle e-procurement tasks while the rest either were not sure 24.8% or disagreed 43.1%. The mean of 2.82 reveals a low level of experience in network-based computer operations. The implication was that the adoption of e-procurement could be constrained

by a low level of e-procurement capacity building leading to skills and experience gaps in the Uganda Police Force.

One interviewee from PDU had this to say on staff training and development opportunities in using e-procurement:

> *"There is lack of commitment of the funds for IT capacity building and development, and this has been caused by the absence of a strategy on e-procurement in the force. There's no single training program on the adoption of e-procurement yet"*

The IT&IM interviewee noted:

> *"ICT personnel are ever undergoing trainings. The concern is that these trainings do not usually involve procurement personnel in designing training needs. He noted that little has been done for specific e-procurement adoption trainings"*

4.6.1. Correlation analysis between staff e-readiness and adoption of e-procurement

To test if there was a significant relationship between staff e-readiness and adoption of e-procurement, a correlation analysis was conducted using Pearson's correlation coefficient and significance statistics. The findings are presented in the Table below;

Table 12: Correlation Matrix between staff e-readiness and adoption of e-procurement in the UPF

		Staff e-readiness	E-procurement adoption
Staff e-readiness	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	109	
E-procurement adoption	Pearson Correlation	.498**	1
	Sig. (2-tailed)	.000	
	N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).			

$P \leq 0.05$

Source: Primary data

Table 12 above shows the Pearson's correlation coefficient r = 0.498** between staff e-readiness and adoption of e-procurement suggesting that the two variables had a positive significant relationship. The r = 0.498** and significance p = 0.000 between staff e-readiness and adoption of e-procurement suggest that there was a moderate, positive and significant relationship between staff e-readiness and adoption of e-procurement. The e-procurement adoption managerial implication was that initial adoption and institutionalization of e-procurement depend on staff training and development to gain the required skills, experience and commitment to use the available e-procurement technologies. A low level of staff competencies/skills and commitment to use e-procurement innovations constrains adoption of e-procurement in the forces.

The standardized coefficient results for staff e-readiness in the multiple regression table 8 above reveal a Beta-$\beta 1$= 0.228, t=2.575, Sig. = 0.011 which suggest that staff e-readiness was the second highest significant predictor of adoption of e-procurement in the force since a unit increase in staff e-readiness results into 0.228 enhanced adoption of e-procurement in the force which is significant (t= 2.575, sig = 0.011 which is< 0.05).

To answer the third research question of, *what is the relationship between staff e-readiness and adoption of e-procurement in the UPF?* This study concluded that there is a positive significant relationship between staff e-readiness and adoption of e-procurement in the UPF. Therefore, staff need to be trained in how conduct e-procurement tasks through the use of internet and network-based technologies and also be prepared to embrace the change and accept to use e-procurement innovations in the force.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary, discussions, conclusions and recommendations of the study on organizational e-readiness and adoption of e-procurement in the UPF based on the study findings. The first section presents the summary based on the study findings. Discussions, conclusions, recommendations, limitations, contributions, and areas for further study are equally presented in this chapter.

5.2. Summary of the Study Findings

5.2.1. Management e-readiness and adoption of e-procurement in UPF

On the adoption of e-procurement, the study found a high level of perceived usefulness and Perceived ease of use of the e-procurement innovations as the staff appreciated the usefulness of e-procurement in improving their performance of procurement function and easy to learn. However, the force had not yet reached the institutionalization stage of e-procurement adoption.

On management e-readiness, the study found out that a significant number of staff were not aware of the e-procurement vision. It was noted that the UPF was only following the broader National e-procurement vision which is binding to all government entities. Half of the staff felt that the e-procurement vision was not clear and needed to be reviewed and communicated to all stakeholders to guide operationalization of the e-procurement policy in the force. There was a low level of management financial resource commitment. The force had not instituted an e-procurement steering committee but relied on the

contracts committee to steer e-procurement processes. There was pessimism that management of UPF was committed to address staff challenges that may arise as a result of adoption of e-procurement.

The correlation results revealed a moderate positive and significant relationship between management e-readiness and adoption of e-procurement in UPF although it was the least significant predictor of the variance in adoption of e-procurement, with ($r = 0.478^{**}$, $p = 0.000$, $\beta1 = 0.198$, $t = 2.246$, Sig. = 0.027).

5.2.2. Technological e-readiness and adoption of e-procurement in UPF

On technological e-readiness, the study found out that there was a high level of access to the necessary ICT infrastructure (computers, printers, LAN, WAN and the website) for implementation of e-procurement activities. However, the e- procurement policy and guidelines were inadequate. The procurement software was hardly available while internet connectivity was found to largely be unstable. This could constrain the adoption of e-procurement in the force.

The correlation and regression results reveal a high positive significant relationship between technological e-readiness and e-procurement adoption and it was the most significant predictor of the variance in e-procurement with ($r = 0.576^{**}$, $\beta1 = 0.389$, $t = 4.573$, sig = 0.000).

5.2.3. Staff e-readiness and adoption of e-procurement in the UPF

The staff had access to committed internal IT staff support but not external IT staff support to help them to trouble shoot e-procurement IT problems. There was a low level of staff capacity building to equip staff with the necessary experience and skills to use e-

procurement innovations. There were significant skills and experience gaps hindering effective use of e-procurement innovations among a significant number of staff.

The correlation and regression results reveal a moderate positive significant relationship between staff e-readiness and adoption of e-procurement and it was the second most significant predictor of the variance in adoption of e-procurement with ($r = 0.498^{**}$, $\beta 1 = 0.228$, $t = 2.575$, Sig. = 0.011).

5.3. Discussion of the Study Findings

5.3.1. Management e-readiness and adoption of e-procurement in UPF

Management e-readiness significantly influenced adoption of e-procurement in UPF although it was the least significant predictor of the variance in adoption of e-procurement. The study therefore inferred that adoption of e-procurement depends on the extent to which management sets and communicates the organization's e-procurement vision and commits the necessary financial resources as it manages the challenges in attaining the e-procurement vision. These study findings and observations are supported by previous studies which attributed adoption of e-procurement to management commitment to acquisition of modern ICT infrastructure (Almoawi, 2011), providing technology leadership, resource commitment and acting on management reports (Sharma and Soni, 2011). In complement, Ali and Alrayes (2014) attribute adoption of e-procurement in government ministries of Bahrain to demonstrated management commitment and a sound governance structure.

On the basis of the study findings and support from literature, the study observes that management e-readiness significantly influences adoption of e–procurement in UPF.

Initial adoption and institutionalization of e-procurement will depend on how management of the force readies itself and indeed the whole force for e-procurement.

5.3.2. Technological e-readiness and adoption of e-procurement in UPF

Technological e-readiness had a high positive significant relationship with e-procurement adoption implying that initial adoption and institutionalization of e-procurement depends on the adequacy of the IT policy guidelines and the availability of functional ICT infrastructure. The study findings are supported by Karnali and Kurnia (2011) Indonesian study which attributes high adoption of B2B e-commerce to availability of technology. In the same line, availability of ICT infrastructure was found to promote adoption of e-procurement in Turkey health sector (Hatice and Mehmet, 2012), while Ali and Alrayes (2014) in the Bahrain study found that technological resources were more significant predictors of institutional adoption than initial adoption of e-procurement in selected ministries, authorities and some private companies.

Based on the study findings and support from literature, the study observes that technological e-readiness significantly affects adoption of e–procurement in the UPF. Initial adoption and institutionalization of e-procurement will depend on the availability of appropriate e-procurement technology in the force.

5.3.3. Staff e-readiness and adoption of e-procurement in the UPF

Staff e-readiness was found to have a positive and significant relationship with adoption of e-procurement in the UPF implying that the adoption of e-procurement depends on staff training and development to gain the required skills, experiences and commitment to

use the available e-procurement technologies. The findings and observations are supported by other scholars such as Altayyar and Beaumont-Kerridge (2016) who attribute successful adoption of e-procurement to providing IT-related educational programs. Ali and Alrayes (2014) in their Bahrain study found that human resources were significant predictors of institutional adoption of e-procurement in selected ministries, authorities and some private companies.

From this discussion on the relationship between staff e-readiness and adoption of e-procurement, the study acknowledges that staff e-readiness significantly influences adoption of e–procurement in UPF. Initial adoption and institutionalization of e-procurement will depend on staff commitment and capacity building.

5.4. Conclusion of the Study

5.4.1. Management e-readiness and adoption of e-procurement in UPF

The study concludes that initial adoption and institutionalization of e-procurement depends on the extent to which management sets and communicates the organization's e-procurement vision and commits the necessary financial resources as it manages the challenges in attaining the e-procurement vision. There were significant e-procurement vision clarity, governance and financial resource gaps in UPF. Such management e-readiness gaps need to be addressed so as to ensure enhanced adoption and institutionalization of e-procurement in the force.

5.4.2. Technological e-readiness and adoption of e-procurement in UPF

It was concluded that e-procurement adoption depends on the adequacy of the IT policy guidelines and the availability of functional ICT infrastructure. There were IT policy, software application, and internet connectivity gaps which constrain adoption and institutionalization of e-procurement in the force which need to be addressed.

5.4.3. Staff e-readiness and adoption of e-procurement in the UPF

It was concluded that adoption of e-procurement in the force depends on staff e-readiness manifested in staff commitment to adopt the innovation, staff training and development and possession of the requisite skills and experience to use the available e-procurement technologies. There were significant staff e-readiness gaps related to access to external IT staff support and capacity building which constrain adoption and institutionalization of e-procurement in the UPF.

5.5. Recommendations of the study

5.5.1. Management e-readiness and adoption of e-procurement in UPF

To enhance a faster e-procurement adoption process in the UPF, the study makes the following policy recommendations to the government;

1. Review and strengthen the e-procurement vision and communicate it to all procurement stakeholders
2. Allocate funds to support the e-procurement adoption initiatives,
3. Commission and communicate the e-procurement steering committee within the UPF.

5.5.2. Technological e-readiness and adoption of e-procurement in UPF

To enhance faster e-procurement adoption in UPF, the study recommends that the management of UPF through the PDU and IT&IM department adopts the following operational interventions:

1. Strengthen the e-procurement policy and guidelines by benchmarking with other forces
2. Procure modern e-procurement hardware and software applications
3. Contract at least two internet service providers

5.5.3. Staff e-readiness and adoption of e-procurement in the UPF

To enhance faster e-procurement adoption in the UPF, the study recommends that the management of UPF through the PDU and IT&IM department adopts the following operational interventions:

1. Hire a change consultant to conduct staff change management sessions
2. Identify staff training needs and train them on how to perform e-procurement tasks
3. Contract external IT staff support in the near reach of users country wide

5.6. Contributions of the Study

The study is arguably the first of its kind exploring organizational e-readiness and adoption of e-procurement in the Ugandan armed forces. Consequently, it has helped to provide managerial interventions necessary for strengthening e-procurement adoption in the UPF and related forces. This study further helps to fill literature gaps on the influence of organizational e-readiness and adoption of e-procurement in the public sector of a

developing country-Uganda which is still reforming its procurement systems and operations.

5.7. Limitations of the Study

The study relied on a sample selected from Kampala Metropolitan Policing area that has access to a good ICT infrastructure a factor that affects the generalization of the results to other UPF regions and rural districts. The study also relied on primary data without use of secondary data which could have reinforced the quality of data collected.

5.8. Areas for Further Research

The study found that staff e-readiness, technological e-readiness and management readiness all predict 41.6% of the variance e-procurement adoption in UPF and they were significant predictors while variables other than organizational e-readiness predicted the remaining variance of 58.4%. Other studies need to examine the extent to which external e-readiness factors influence adoption of e-procurement in the forces.

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APPENDICES

Appendix I: Study questionnaire

Dear Sir/Madam,

My name is **Barugahare Ismael** pursuing a Degree of Master of Science in Supply Chain Management at Kyambogo University. I am conducting a study on organizational e-readiness and adoption of e-procurement in Uganda Police Force as the partial requirement for the Master's degree award. You have been selected as a respondent to provide me with your views on this study based on your experience on the subject matter. Your views will be kept and treated confidentially and at no moment will it be used against you.

SECTION I: Background Information

No.	Bio-data	Options	Please Tick
1.	Gender	Male	
		Female	
2.	Age bracket	Below 25 years	
		25-34 years	
		35-44 years	
		45-54 years	
		55-64 years	
		65 years and above	
3.	Highest level of education	Postgraduate	
		Degree	
		Diploma	
		Certificate	
		Secondary	

		Others (Specify)	
4.	Dept/ Unit in UPF	Accounting officer	
		Contracts Committee	
		PDU	
		User dept. / Directorate	
		IT and Information Mgt.	
		Others (Specify)	
5.	Time worked in the position	Below 1 year	
		1-3 years	
		4-6 years	
		7-9 years	
		10 + years	

SECTION II: Organizational E-readiness

Instructions

Indicate the extent to which you agree with the following e-readiness indicators in relation to the UPF by indicating (5) if strongly agree (4) if agree, (3) if not sure (2) if disagree (1) if strongly disagree.

Management e-readiness and adoption of e-procurement	**1**	**2**	**3**	**4**	**5**
1. The management of UPF has set a vision on e-procurement	1	2	3	4	5
2. The e-procurement vision is clear to guide e-procurement adoption	1	2	3	4	5
3. The management is aware of challenges to attaining the e-procurement vision	1	2	3	4	5
4. UPF management demonstrates financial resource commitment for adoption of e-procurement	1	2	3	4	5
5. The UPF has set up a steering committee to oversee e-procurement adoption processes	1	2	3	4	5

6. The management of UPF is committed to address staff challenges that may arise as a result of adoption of e-procurement	1	2	3	4	5
Technological e-readiness and adoption of e-procurement					
1. The UPF is implementing IT Policy guidelines that incorporate e-procurement	1	2	3	4	5
2. The UPF IT policy adequately provides for e-procurement	1	2	3	4	5
3. I have access to a well-functioning computer set to perform procurement activities	1	2	3	4	5
4. I have access to a well-functioning printer	1	2	3	4	5
5. The UPF has an e-procurement software application used to perform e-procurement operations	1	2	3	4	5
6. I have access to a well-functioning Local Area Network (LAN)	1	2	3	4	5
7. I have access to a well-functioning Wide Area Network (WAN)	1	2	3	4	5
8. There is a UPF website used to advertise procurement opportunities	1	2	3	4	5
9. I have access to a stable internet connectivity in UPF to perform e-procurement operations	1	2	3	4	5
Staff e-readiness and adoption of e-procurement					
1. I am committed to using e-procurement platforms to improve procurement operations	1	2	3	4	5
2. I have access to committed internal IT staff support	1	2	3	4	5
3. I have access to committed external IT staff support	1	2	3	4	5
4. I have benefited from computer training opportunities offered by UPF on how to conduct e-procurement operations	1	2	3	4	5
5. I have adequate computer skills to perform e-procurement tasks	1	2	3	4	5
6. I have adequate experience in network-based computer operations to handle e-procurement tasks	1	2	3	4	5

SECTION III: Adoption of e-procurement

Instructions

Indicate the extent to which you agree with the following observations on adoption of e-procurement by indicating (5) for strongly agree (4) for agree, (3) for not sure (2) for disagree (1) for strongly disagree.

Scale	1	2	3	4	5
Initial adoption*(Using one or more e-procurement innovations for a part of the procurement process to interact with the UPF Procurement stakeholders)*					
1. Adopting e-procurement enhances achievement of procurement related targets	1	2	3	4	5
2. Embracing the use of e-procurement enhances quality of procurement related outputs	1	2	3	4	5
3. Embracing the use of e-procurement enhances quantity of procurement output	1	2	3	4	5
4. Embracing the use of e-procurement enhances timely accomplishment of procurement tasks	1	2	3	4	5
5. Adoption of e-procurement shall make management of procurement easier	1	2	3	4	5
6. It is easier for me to learn how to use e-procurement platforms	1	2	3	4	5
7. It is easier for me to use e-procurement applications	1	2	3	4	5
8. I am flexible in adopting the use of e-procurement applications to accomplish procurement tasks					
Institutionalization*(Rolling out of many of the e-procurement innovations and embedding them within UPF to perform procurement activities)*					
1. I will continuously use e-procurement platforms to perform my procurement operations	1	2	3	4	5
2. All UPF staff are to use e-procurement platforms in conducting all	1	2	3	4	5

procurement activities					
3. All suppliers are to be encouraged to use e-procurement platforms in conducting procurement business with UPF	1	2	3	4	5
4. The use of e-procurement has been rolled out to all procurement management levels in UPF	1	2	3	4	5
5. Using e-procurement is part of the organizational culture in the UPF	1	2	3	4	5
6. Use of e-procurement has been embedded in the UPF	1	2	3	4	5

END OF THE QUESTIONNAIRE

THANKS FOR YOUR VALUABLE TIME

Appendix II: Interview Guide

Self-introduction

My name is **Barugahare Ismael** and I am a student of Master's degree of Science in Supply Chain Management at Kyambogo University. I am conducting a study on organizational e-readiness and adoption of e-procurement in Uganda Police Force as the partial requirement for the Master's degree award. You have been selected as a respondent to provide me with your views on this study based on your experience on the subject matter. Your views will be kept and treated confidentially and at no moment will it be used against you.

1. What is the management's effort to develop a vision for the adoption of e-procurement in the Uganda Police Force?
2. With your experience, what do you think are the required attributes for a clear e-procurement vision in UPF?
3. What is your view on the UPF Management commitment to adopting e-procurement?
4. Explain what you perceive to be management challenges towards adopting e-procurement in the UPF. Suggest some solutions
5. What is your opinion on the performance of the UPF's e-procurement steering committee?
6. How adequate is the IT Infrastructure in the UPF to facilitate e-procurement adoption?
7. Comment on the UPF effort in implementing an adequate IT Policy that provides for e-procurement

8. Explain what could be the technological challenges hindering a faster e-procurement adoption process in the UPF? Suggest solutions
9. What is your comment on the force's staff commitment to adopt e-procurement innovations in UPF?
10. Explain the possibility of accessing external IT staff support in the UPF
11. How would you comment on the UPF effort to provide training and development opportunities to equip staff with skills and experiences in web based technologies?
12. Explain the UPF staff challenges that hinder a faster e-procurement adoption process. Suggest some solutions

END OF THE INTERVIEW

THANKS FOR YOUR VALUABLE TIME

Appendix III: Introductory Letter

KYAMBOGO UNIVERSITY

P. O. BOX 1 KYAMBOGO
Tel: 041 - 4286792 Fax: 256-41-220464
Website: www.kyu.ac.ug

Office of the Dean, Graduate School

4th September 2017

To Whom It May Concern

RE: LETTER OF INTRODUCTION

Dear Sir/Madam,

This is to introduce **Mr. Barugahare Ismael** Registration Number **15/U/14549/GMSC/PE** who is a student of Kyambogo University pursuing a Masters Degree.

He intends to carry out research on **"Organizational E-Readiness and the Adoption of E-Procurement in the Ugandan Armed Forces: A Case study of Uganda Police Force"** as partial fulfillment of the requirements for the award of the Master of Science in Supply Chain Management.

We therefore kindly request you to grant him permission to carry out this study in your institution.

Any assistance accorded to him will be highly appreciated.

KYAMBOGO UNIVERSITY
★ -4 SEP 2017 ★
OFFICE OF THE DEAN GRADUATE SCHOOL

Yours sincerely,

Assoc. Prof. Muhamud Kaawaase Ssali
DEAN, GRADUATE SCHOOL

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★ -4 SEP 2017 ★
OFFICE OF THE
DEAN GRADUATE SCHOOL

Yours sincerely,

Assoc. Prof. Muhamud Kaawaase Ssali
DEAN, GRADUATE SCHOOL

Appendix IV: Acceptance Letter

TELEGRAMS: "GENPOL"
TELEPHONE: 0414 - 233814, 0414 - 250613
FAX NO: (0414) 255630
WEBSITE: www.upf.go.ug
GENERAL EMAIL: upf@pf.go.ug
P.O.Box 7055 Kampala - Uganda
In any correspondence on this subject
PLEASE QUOTE NO.....

UGANDA POLICE FORCE
POLICE HEADQUARTERS

25th/09/2017

TO WHOM IT MAY CONCERN

Dear: sir/madam

RE; MR. BARUGAHARE ISMAEL

The above student has been accepted to conduct his research from the Uganda Police Force. He is being supervised by the office of the Director ICT Naguru

This is to request you to furnish him with the information necessary for his study.

.....

ASP AISHA KAYONGO
ICT RESEARCH DEVELOPMENT AND INNOVATION

Cc. Director ICT

Cc. MR. BARUGAHARE ISMAEL

UGANDA POLICE
PROTECT & SERVE

Protect & Serve

Appendix V: Table for Determining Sample Size from a given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: "N" is population size

"S" is sample size

Krejcie, Robert V., Morgan, Daryle W. (1970). "Determining Sample Size for Research Activities", Educational and Psychological Measurement.