



UNIVERSITY OF NAIROBI

School of Computing and Informatics

**A FRAMEWORK FOR UTILIZATION OF E-GOVERNMENT
SERVICES IN KENYA**

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**A research project submitted in partial fulfillment for the requirements of Master of
Science Degree, Information Systems of the University of Nairobi.**

DECLARATION

I, the undersigned, hereby declare that this research project is my own original work and that it has not been presented to any other university for award of any academic qualification.



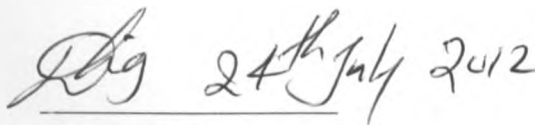
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APPROVAL

This research project has been submitted for examination to the University of Nairobi with my approval as the appointed supervisor.



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DEDICATION

To my wife
Nelly
and
Our children
Wendy, Jack Junior and Michel.

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to all of the people who have contributed to the completion of this project. First of all, I had the great fortune to study under the supervision of Dan Orwa. I am very grateful for his excellent guidance, encouragement, patience and providing me with excellent atmosphere for doing research. I would also like to thank my panelists, Mr. Erick Ayienga and Prof. Elijah Omwenga for their hawk eye input that stimulated me beyond my horizon.

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Finally, I would like to thank my wife, Nelly Cherop. She was always there cheering me up and stood by me through the good times and bad.

ABSTRACT

The purpose of this study was to assess the framework for the utilization of e-Government services in Kenya. The specific objectives were to assess the extent to which citizens in Kenya would use e-Government services, determine the factors that contribute to e-Government services use in Kenya, find out whether the intention to use e-Government services differs across selected personal factors and to develop a framework for the utilization of e-Government Services from a citizen perspective in Kenya. The motivation of the study; It is not clear which factors influence the utilization of the e-Government Services in Kenya for reasons that although these factors are well analyzed in the published literature on e-Government for developed countries, there is a need to understand, evaluate them in the context of Kenya as there is very little that is written.

The study used a descriptive research design. As a result, stratified random sampling was used to select 50 users from each of the eight Kenya provinces. A questionnaire was used for data collection. Descriptive statistics and inferential statistical methods were applied.

Results indicated that the overall intention to use e-Government services was high in Kenya as majority of the respondents indicated that they intended to use e-Government services. In addition, results also indicated that intention to use e-Government services was higher for lower end services and declined as the complexity of the service increased. Results further revealed that the technological factors that significantly influenced intention to use e-Government services included awareness, perceived ease of use, perceived usefulness, savings, perceived trust, perceived information quality, satisfaction and ICT experience. Results also revealed that the intention to use e-Government services differs across the various types of occupations, levels of education and internet experience. However, gender and age of e-Government user did not influence the intention to use e-Government services.

The study has implication for theory building since the study validates several constructs found in UTAUT Model, Web Trust and in the Diffusion of Innovation (DOI) Theory. The study also has implications for practice. These include several recommendations from practice. Several recommendations were made in an effort to enhance the utilization of e-Government services in Kenya. The recommendations were in line with research findings. The government of Kenya should create awareness about its e-Government services as doing so would lead to an increased intention to use. The government should enhance trust as doing so would increase the intention to use e-Government services. For instance, the government should seriously address the rampant website hacking by ensuring that websites have firewalls, and the use of robust web hoisting database servers. The government may also enhance perceived ease of use by involving users in the development of e-Government services. Furthermore, the government may ensure quality by having its websites and product offering updated regularly. It is suggested that further study on specific e-Government services should therefore be investigated.

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TERMINOLOGIES

e-Government- is the use of ICT and multimedia technologies to improve the access to and delivery of government services to stakeholders, such as, citizens, businesses and government employees.

G2C (Government-to-Citizen) involves interaction of individual citizens with the government. Examples include payment of utility bills or downloading government forms from the Internet.

G2B (Government-to-Business) involves interaction of business entities with the government. Examples include corporate tax filing or government procurement through the internet.

G2G (Government-to-Government) involves interaction among government officials, including interactions within a particular government office and interactions among various government offices. Examples include the use of email for internal government communication or customized software applications for tracking the progress of government projects.

G2E (Government-to-Employee) involves interaction between the government and government employees with respect to services such as salary, pension, and vacation leave. For example, a government may introduce a database-supported personnel data sheet for each government employee that serves as a record of personnel information that can be easily accessed for various applications.

e-Literacy (Computer Literate) –According to Joanna M, et. Al (2006), this is the awareness, skills, understanding and reflective approaches necessary for an individual to operate comfortably in information rich and Information Technology (I.T) enable environments.

LIST OF ABBREVIATIONS

CCK	- Communication Commission of Kenya.
DOI	- Diffusion of Innovation
e-Government	- Electronic Government
e-Services	- Electronic services
e-Literate	- Computer literate
EMIS	- Education Management Information system
G2B	- Government to Business
G2C	- Government to Citizen
G2E	- Government to Employee
G2G	- Government to Government
ICT	- Information and Communication Technology
ICT	- Information and Communications Technology
IFMIS	- Integrated Financial Management Information System
IPPD	- Integrated Personnel and Payroll Database.
ITMS	- Integrated Tax Management Information System
IU	- Intention to Use
LAIFOMS	- Local Authorities Integrated Financial Operations Management System
LAN	- Local Area Network
PEUO	- Perceived Ease of Use
PQ	- Perceived Quality
PU	- Perceived Usefulness
TAM 2	- Technology Acceptance Model 2
TAM 3	- Technology Acceptance Model 3
TAM	- Technology Acceptance Model
UTAUT	- Unified Theory of Acceptance and Use of Technology
WAN	- Wide Area Network

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CHAPTER ONE: INTRODUCTION

1.0 Background

According to Kenya e-Government Strategy (2004), e-Government is the use of a range of information technologies, such as the Wide Area Networks, internet, and mobile computing, by government agencies to transform government operations in order to improve the use of information technology to support government operations, provide investments that are needed in people, tools, policies, processes, engage citizens and provide government services. Waema, T (2007), views e-Government as a tool that can transform the way in which we carry out activities as well as the way interaction takes place, methods of public education and services are delivered, knowledge is acquired and utilized, policy is developed and implemented, citizens participate in governance, and public administration on reform and good governance goals are met.

Governments generate an enormous amount of information in its day-to-day activities. The socio-cultural, political, economical and historical status of any government is largely affected by the knowledge it has and how this knowledge is utilized. The most effective way of utilizing the knowledge by the government is to bring the government close to the citizens through e-Government. Governments worldwide have been making significant attempts to make their services and information available on the internet in order to improve the efficiency and effectiveness of internal government operations, communications with citizens, and transactions with both individuals and organizations (Warkentin et al., 2002). Kenya is ranked position 124 out of 192 United Nations member states, with e-Government development index of 0.3338 (United Nations, 2010).

While substantial growth in the development in e-Government initiative has been witnessed, it is not clear whether citizens are willing to utilize these services.

1.1 Problem Statement.

In the past decade organizations have focused on the latest technological innovations to overcome their organizational challenges. One such dimension is the implementation of e-Government. e-Government offers the benefits of increased government accountability to citizens, greater public access to information and more efficient, cost-effective government however the success and acceptance of e-Government initiatives is dependent on citizens willingness to adopt this innovation (Carter and Belanger, 2005). For example, instead of visiting a department at a particular location or calling the government personnel at a particular time specified by the government, citizens can choose to receive these services at the time and place of their choice (Thorbjornsen et al., 2002). Eventually, many countries have viewed e-Government as a source of development for better delivery of services and information exchange without the constrain of time and space.

Governments worldwide still face the problem of low-level of citizen utilization of e-Government services (Belanger and Carter, 2008). Serving the population through e-Government systems requires understanding of the behavior of this population as well as the factors that influence their acceptance and usage of technology.

It is not clear which factors influence the utilization of the e-Government services in Kenya for reasons that although these factors are well analyzed in the published literature on e-Government for developed countries, there is a need to understand, evaluate them in the context of Kenya as there is very little that is written.

Therefore, the major objective of this study was to conduct an empirical field research to investigate the factors affecting utilization of e-Government services by Kenyan citizens. The study integrates constructs from the Technology Acceptance Model (TAM), Diffusion of Innovation theory (DOI) and web trust models to form a conceptual framework for e-Government utilization in Kenya

1.2 Scope of the Study

This study will develop a framework for utilization of e-Government services by Kenya citizens. 400 respondents were drawn from the population of persons living in Kenya who are internet users and estimated to be about 17.38 million (CCK, 2011).

1.3 Research questions

1. What are the unique characteristics of e-Government users in Kenya?
2. What are the factors that contribute to e-Government services use in Kenya?
3. How can the findings of this research assist Kenya and developing African countries increasing citizen's utilization of e-Government services?

1.4 Objectives

1. To assess the extent to which citizens in Kenya would use e-Government services.
2. To determine the factors that contributes to e-Government services use in Kenya
3. To find out whether the intention to use e-Government services differs across selected personal factors
4. To develop a framework for the utilization of e-Government Services from a citizen perspective in Kenya.

1.5 Significance of Study

The global average for e-Government website usage by citizens is about 30% (Kumar et al. 2007). Empirical research in this area is significant since it will provide a deeper understanding on the important factors that may influence citizens utilization of e-Government services.

This study will also, extend our understanding of e-Government by proposing and empirically validating a framework that is based on an integrated set of constructs from literature from adoption models, hence complimenting previous research.

From a practical point of view, the validated e-Government utilization framework could help other countries, both developing and developed, to make their e-Government strategies more effective.

1.6 Basic Assumptions

The study assumes that the respondents to be interviewed will give genuine responses on their utilization levels of e-Government services.

The study also assumes that there are e-Government services, accessible to the Kenyan citizens through various electronic communication channels.

1.7 Limitations of the study

The research study has some limitations;

1. Poor infrastructure within the country, thus the research was limited to areas where there is relative infrastructure so as the research to be feasible. infrastructure includes power, telecommunication & IT security.
2. Low literacy and e-literacy rates: This includes a large pool of people who are not e-literate.
3. Low internet penetration. According to (CCK, 2011), between October 2011 to December 2011, the total number of internet subscriptions increased by 13.48 and internet users was estimated at 17.38 million representing 44.13 percent of the population. Further (CCK,2011) states that mobile operators dominate the internet market with more than 98 per cent of the internet market share being through mobile providers. This makes the research study to target areas where there is relatively high internet penetration making it not a true representation of the population since rural areas within the country do not have high internet users as compared to the urban centres.

1.8 Chapter Organization

This study comprises of five chapters. Starting with this chapter which provides an overview of the study by providing a background about definition of e-Government and the state of e-Government in Kenya. The chapter also reviews the root of research problem posed in this study. Chapter 2 covers literature review of this study by discussing e-Government and its classifications, impact of e-Government in Kenya, factors concerned in technology adoption in previous research models and development of conceptual research framework. Chapter 3 describes and explains issues related to research methods and designs such as sampling design, data collection and questionnaire design. Chapter 4 discusses the statistical analysis used and presents the results of testing the research objectives. Chapter 5 presents the research finding, contributions, the implication of the study, limitation of the study and suggestions for future research and conclusion is also provide.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter seeks to review the relevant literature that forms the base of this study. It begins by reviewing e-Government literature in the world and Kenya. This is followed by a review of existing technology adoption models in order to identify the most appropriate theoretical background for this research. The chapter concludes by proposing a framework for e-Government utilization in Kenya.

2.1 e-Government and e-Services

Although the term 'e-Government' has gained currency in recent years, there is no standard definition of this term. Different governments and organizations define this term to suit their own aims and objectives.

Broadly defined, e-Government includes the use of all information and communication technologies, from fax machines to wireless palm pilots, to facilitate the daily administration of government, exclusively as an Internet-driven activity that improves citizen's access to government information, services, and expertise to ensure citizen's participation in, and satisfaction with government process (UN & ASPA, 2001).

Narrowly defined, e-Government is the production and delivery of government services through IT applications, used to simplify and improve transactions between governments and constituents, businesses, and other government agencies (Sprecher, 2000). e-Government is not merely computerization of government services and the use of the internet it includes different non-internet based information technologies like telephone, mobile telephones and related features such as short text messages, fax, T.V and radio-based delivery of government services, as well as closed circuit television. Information Technology (IT) is used to promote the generation, processing, storage, dissemination, communication and the application of information in different government sectors. The components that need to be put in place in order for e-Government to be effective include websites for accessing information, improved service delivery, affordable and reliable telecommunication and electricity connectivity, information technology literate citizens, well developed infrastructures such as computer hardware and software, adequate

funding, availability of adequate skilled human resources to collect and organize information, and well developed government policies (Silock, 2001).

In general e-Government can be classified into four main categories based on the entity that interacts with government. The four main categories are government-to-citizen (G2C); government-to-employee (G2E); government-to-business (G2B) and government-to-government (G2G). Early stages of e-Government development have traditionally begun with static non interactive web-pages that push information to citizens. These initial undertakings usually progress over time to include features for other groups beyond citizens such as employees, businesses, and other governmental agencies that are interested in government services and products. Services tailored towards employees and other government agencies coincide with strategic improvements and business process re-engineering of internal government functions. As a country's e-Government platform matures, additional features beyond only static features are included to contain varying degrees of interactivity. Muir and Oppenheim (2002) defined e-Government as the delivery of government information and services online through the internet or other digital means. e-Government has also been defined as the delivery of improved services to citizens, businesses, and other members of the society through drastically changing the way governments manage information (Kumar et al., 2007).

However, despite the diversity of e-Government definitions, there is a common central concept that underlies all these definitions – utilization of ICT tools for public service delivery.

The world-wide-web represents a primary tool facilitating the growth and development of e-Government applications. The most recent e-Government report by the United Nations (2010) found that 192 countries globally have developed an e-Government website.

Full utilization of e-Government will bring a lot of benefits to the management philosophy of many governments and is going to bridge the interaction gap between ordinary citizens and the government. This entails that citizens can collaboratively participate in decision/policy making. This is the case because governments have been

viewed as complex, mammoth bureaucratic establishments with a set of information silos that erect barriers to access of information and make the provision of services cumbersome and frustrating (Coleman, 2006). e-Government can also result in huge cost savings to governments and citizens alike, increase transparency and reduce corrupt activities in public service delivery (Coleman, 2006).

Having realized the benefits that e-Government brings forth, many governments, the world over have adopted e-Government as an effective tool for reaching to its citizens and other different stakeholders. However, nowadays there has been a paradigm shift because even governments are equally interested in using the internet in carrying out its day-to-day activities (Zhu and He, 2002).

As e-Government services are mostly provided using ICT, it is imperative that the understanding of IT adoption be done. This understanding can further be extended to help us understand the uptake and adoption of e-Government systems. The 'e-Government' concept entails making use of IT by governmental institutions to enhance their operational efficiency and effectiveness in meeting citizens' needs and service delivery (Chen et al., 2009). The scope of e-Government services extend from posting generally requested information on a website to providing and processing online requests such as electronic payment of taxes or other fees, visas etc.

2.2 e-Government and its impact in Kenya

Being a developing country, Kenya is going through the process of globalization and liberalization of its market and services. This has given rise to new business processes, different information flows, and changed policies, new kinds of records, advanced security measures, and new data management methods. The Kenya e-Government strategy was designed to achieve pre-determined set of goals and objectives, which are: better and efficient delivery of Government Information and Services to the citizens, provide productivity among public servants, encourage participation of citizens in Government and empower all Kenyans in line with development priorities in the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007). The objectives and expected impact of this strategy were to:

- Increase efficiency and effectiveness, and to enhance transparency and accountability in the delivery of government services through the use of information technologies.
- Improve the internal workings of government to be externally oriented and more customer-focused.
- Facilitate collaboration and the sharing of information within and between government agencies.
- Reduce significantly transaction costs leading to savings.
- Encourage participation and empowerment of citizens including the disadvantaged groups and, communities in the rural and remote areas (grass-root level) through closer interaction with the government.
- Attract foreign investments by providing faster access to information.

2.2.1 The Kenya e-Government Strategy 2004-2008

The first e-Government strategy was formulated in 2004 and acquired Cabinet approval in December of the same year. The principal purpose of the strategy was, foremost, to create order and harmony in Government ICT initiatives which were, at the time, were invariably characterized by disharmony and lack of coordination with each agency pursuing its narrow ICT agenda, thus resulting to wastages through duplication of efforts and resources. In this regard, a key strategic objective was the setting-up of the ICT institutions that would immediately address this. Thus, the Directorate of e-Government was created with the mandate, as stipulated in the strategy, to oversee, among others, coordination of implementation of the strategy, formulation and communication of ICT guidelines and enforcement of national and international standards.

The e-Government strategy 2004-2008 was a five year plan whose activities were categorized under the three broad components i.e. communication within Government (G2G), Communication with Business (G2B) and Communication with Citizens (G2C). The strategy identified the activities for achieving short-term, medium term and long term strategic objectives for a period covering up to June 2004, June 2007 and beyond June 2010 respectively.

In addition, the strategy proposed the e-Government structure that would successfully facilitate implementation of the activities as well as establishing relationships with other agencies involved in ICTs. To ensure sustainable and seamless implementation of these activities, the human resources development requirements were outlined in the strategy. The strategy finally identified technology standards that, of necessity, were to be adhered to in order to conform to international requirements for communication and data transfer.

2.2.2 Key Achievements of the e-Government strategy 2004- 2007

A key achievement of the e-Government strategy is the implementation of the e-Government structure proposed in the strategy by creation of the Directorate of e-Government in 2005. This was followed by the creation of ICT units in ministries and other accounting units in 2006. The Government also created the three committees in the structure; the Cabinet Committee on ICT, Permanent Secretaries Committee and Ministerial ICT Committees. This structure was strengthened by the formulation and approval of a scheme of service for e-Government staff in 2007. Over to 250 ICT officers have been recruited since 2005 to enhance the capacity of technical staff in the ministries.

One of the major undertakings by the Government has been creation of network infrastructure in ministries. Local area networks (LANs) were installed in all the ministry headquarters and at the provincial headquarters. The Government has continued to promote end user IT equipments usage and the total number of personal computers in government currently is over 14,000. In addition, the government installed a wireless-based wide area network (WAN) to inter-link ministries to IFMIS and the internet. The capacity of this WAN infrastructure has been quite limited and the government finalized the design of a high-capacity fibre based wide area network in Nairobi.

The Government has also made progress in development of e-applications. Key among these is the Integrated Financial Management Information System (IFMIS) and the Integrated Personnel and Payroll Database (IPPD) which are fully operational in the ministries. IPPD is currently in use in 52 institutions which includes all the ministries and some Semi Autonomous Government institutions. Other applications that have been

rolled out include the Local Authorities Integrated Financial Operations management system (LAIFOMS) in some of the local authorities. Education Management Information System (EMIS) in the Ministry of Education, Integrated Taxation Management System (ITMS) in Kenya Revenue Authority, Online Recruitment and Selection System in Public Service Commission and border control system in the Ministry of State for Immigration and Registration of Persons. Initiatives in other ministries and government agencies have significant portfolio of stand-alone e-Government applications that are in different stages of development and implementation

In addition the Government has ensured web presence through the development of websites for all ministries and other accounting units. The websites are at various levels of interactivity and efforts are underway to enhance them into transactional websites.

The progress made in the implementation of e-Government in Kenya has received recognition despite the constraints involved. This is underscored by e-Government readiness index by the United Nations in which, Kenya was ranked number 122 in both 2007 and 2008 globally. In the Africa, Kenya has maintained a top ten position in both years.

2.3 Base Models

There are various models that can be used as a base for developing a citizen adoption framework but since the main enabler of e-Government is technology, the base models usually come from technology adoption studies. Among these models, Technology Acceptance Model (TAM) (Davis 1989) is the most prominent example. Other models such as Uniform Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al, 2003), Technology Acceptance Model 2 (TAM 2), Technology Acceptance Model 3 (TAM 3), Diffusion of Innovations (DOI) (Moore & Benbasat, 1991) and the Trustworthiness Model also exist.

2.3.1 Technology Acceptance Model (TAM)

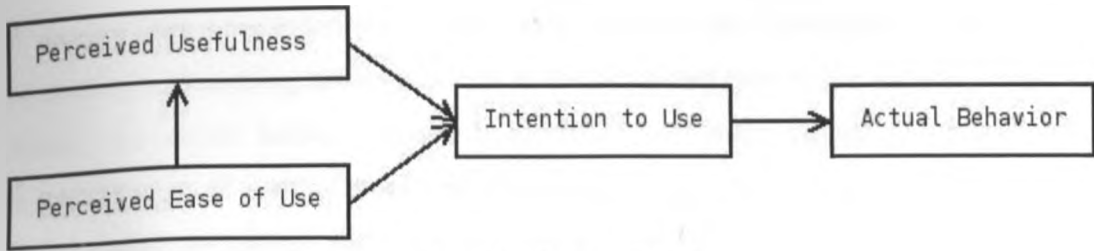
Davis' (1989) TAM is widely used to study user acceptance of technology. The measures presented in Davis' study target employee acceptance of organizational software, but

these measures have been tested and validated for various users, experienced and inexperienced, types of systems, word processing, spreadsheet, email, voicemail, etc., and gender. Studies have also used TAM to evaluate user adoption of e-commerce. TAM is based on the theory of reasoned action, which states that beliefs influence intentions, and intentions influence one's actions (Ajzen & Fishbein, 1972). According to TAM, perceived usefulness (PU) and perceived ease of use (PEOU) influence one's attitude towards system usage, which influences one's behavioural intention to use a system, which, in turn, determines actual system usage.

Davis defines PU as 'the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989), and PEOU as 'the degree to which a person believes that using a particular system would be free of effort (Davis, 1989)'. Perceived ease of use is predicted to influence perceived usefulness, because the easier a system is to use, the more useful it can be. These constructs reflect users' subjective assessments of a system, which may or may not be representative of objective reality. System acceptance will suffer if users do not perceive a system as useful and easy to use (Davis, 1989).

Demographic variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, TAM is based on both important perceptual factors as perceived usefulness and perceived ease of use. TAM is widely applied on the researches of information technology.

Figure 2-1: Technology Acceptance Model (TAM).

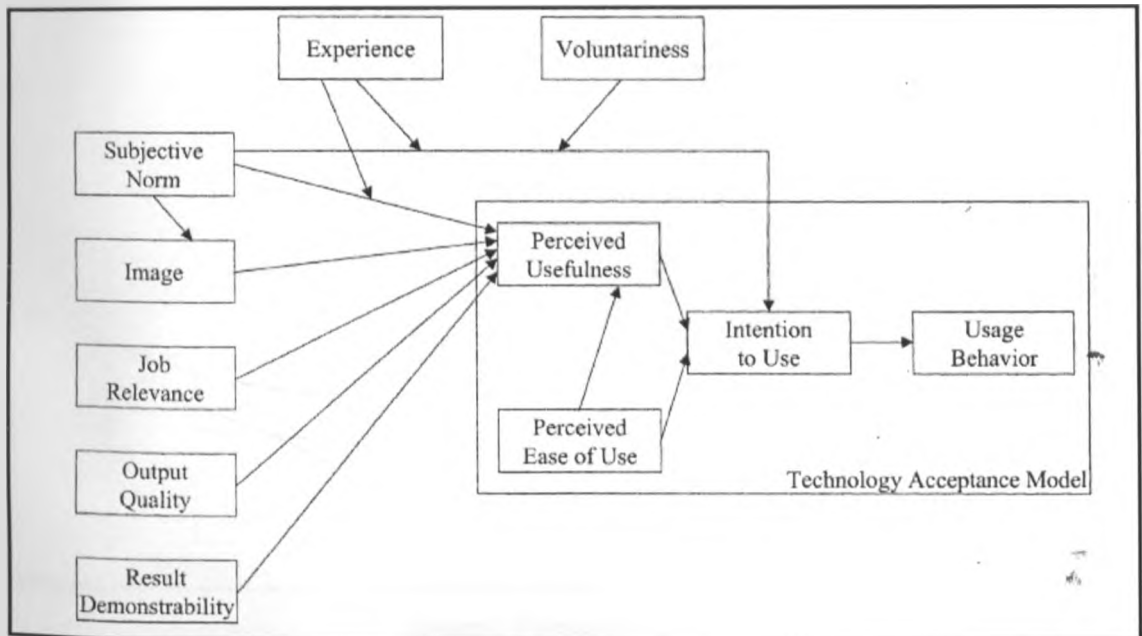


Source: Davis. (1989)

2.3.2 Technology Acceptance Model (TAM) 2

One of the important extensions brought to TAM model is by Venkatesh and Davis (2000) who proposed the TAM 2 model shown below. Venkatesh and Davis identified that TAM had some limitations in explaining the reasons for which a person would perceive a given system useful, and thus they proposed that additional variables be added as antecedents to the perceived usefulness variable in TAM, thus called the new model, the TAM 2 Model.

Figure 2-2: Technology Acceptance Model 2 (TAM 2).



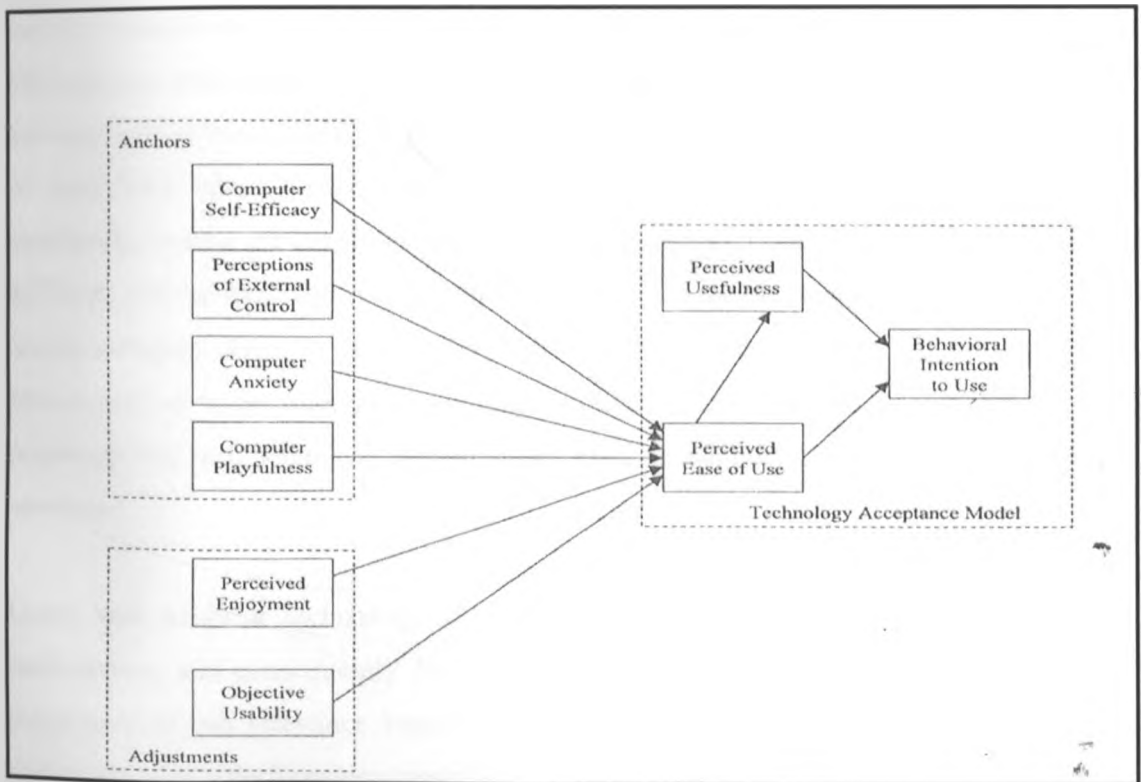
Source: Venkatesh and Davis (2000)

2.3.3 Technology Acceptance Model (TAM) 3

A second important extension of the TAM Model is by Venkatesh (2000), who was interested in identifying the antecedents to the perceived ease of use variable in the TAM Model. As shown below, Venkatesh identified two main groups of antecedents for perceived ease of use: anchors and adjustments. Anchors were considered as general beliefs about computers and computer usage whereas adjustments were considered as beliefs that are shaped based on direct experience with the target system.

In both groups, Venkatesh (2000) proposed several determinants that are mostly derived from previous research on identifying the antecedents to PEOU (Davis et al)

Figure 2-3: Technology Acceptance Model 3 (TAM 3), Extending TAM to include determinants for Perceived Ease of Use.



Source: Venkatesh (2000)

2.3.4 Unified Theory of Acceptance and Use of Technology (UTAUT) Model

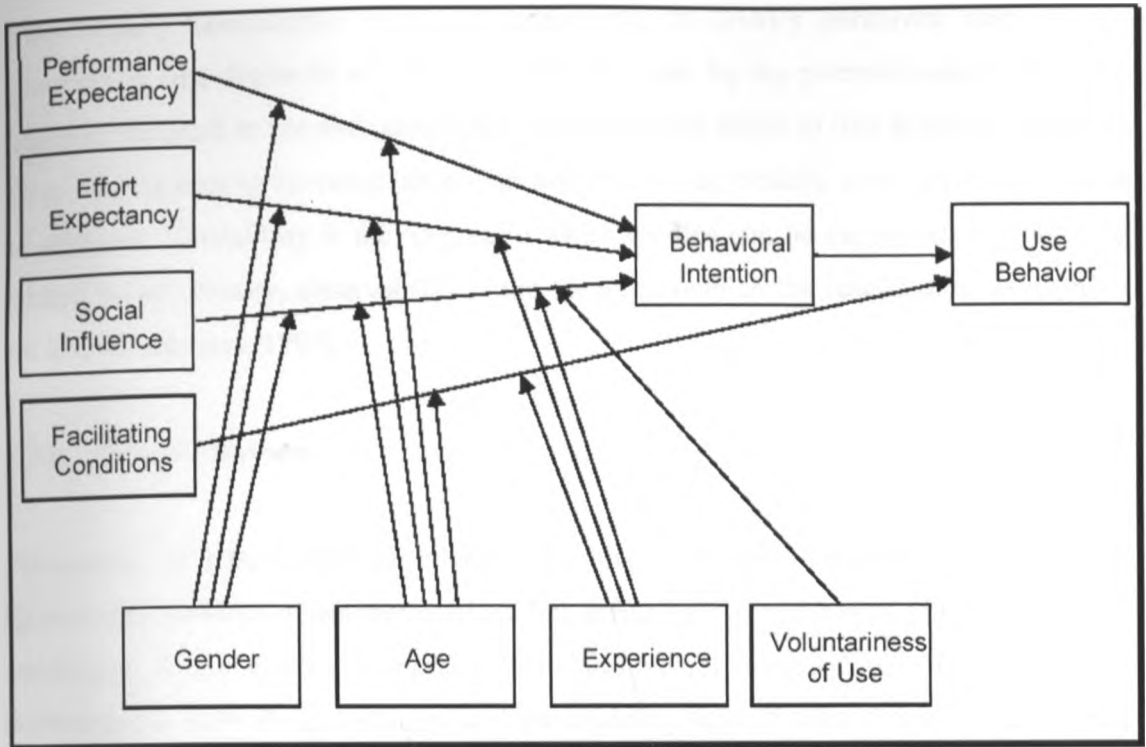
Venkatesh, Morris, Davis and Davis created an integrated model called Unified Theory of Acceptance and Use of Technology (UTAUT), in which eight models previously used in the information technology literature were merged. UTAUT helps managers assess the likelihood of success for new technologies as well as understand the drivers of technology acceptance.

The UTAUT model identifies the determinants of user acceptance and usage behavior. Accordingly, there are four core determinants of intention to use and usage of the technology. Three are direct determinants of intention to use the technology namely performance expectancy, effort expectancy and social influence while intention to use and facilitating conditions are two direct determinants of usage behavior. They also identified four moderators of these key relationships namely gender, age, experience and voluntariness of use.

Performance expectancy is the extent to which the users believe that e-Government services will enhance their job performance while effort expectancy refers to the degree of ease with which users address the e-Government services. There seems to be similarities among the construct of performance expectancy and the perceived usefulness of TAM, and, between effort expectancy construct and the perceived ease of use of TAM. Social influence refers to users' perception of significant others requiring them to use e-Government services whereas facilitating conditions relate to the extent that users believe organizational and technical infrastructure exist to support the use of e-Government services.

Users will adopt a technology if they perceive it as helping them improve their performance and consequently find it relevant in performing their tasks. So the user's judgement of job relevance based on an awareness of the technology capabilities in enhancing user's performance contribute to enhance the perceived usefulness (Venkatesh and Davis 2000; Venkatesh *et al.* 2003). This idea of job-fit is also referred to as near term usefulness which implies improved job performance or job satisfaction (Chau, 1996). Positively valued outcomes resulting from the use of the technology will influence users' beliefs about its usefulness (Davis, 1989). Hence, extrinsic' motivators associated to the use of the technology are related to perceived usefulness (Davis, 1989).

Figure 2-4: Unified Theory of Acceptance and Use of Technology (UTAUT) Model.



Source : Venkatesh et al (2003)

Moreover, the UTAUT model attempts to explain how individual differences influence technology use. More specifically, the relationship between perceived usefulness, ease of use, and intention to use can be moderated by age, gender, and experience.

2.3.5 Diffusion of Innovation (DOI)

Rogers' (1995) Diffusion of Innovation (DOI) theory is another popular model used in information systems research to explain user adoption of new technologies. Rogers defines diffusion as 'the process by which an innovation is communicated through certain channels over time among the members of a social society' (Rogers, 1995). An innovation is an idea or object that is perceived to be new (Rogers, 1995).

According to DOI, the rate of diffusion is affected by an innovation's relative advantage, complexity, compatibility, trialability and observability. Rogers (1995) defines relative

advantage as 'the degree to which an innovation is seen as being superior to its predecessor'. Complexity, which is comparable to TAM's perceived ease of use construct, is 'the degree to which an innovation is seen by the potential adopter as being relatively difficult to use and understand'. Compatibility refers to 'the degree to which an innovation is seen to be compatible with existing values, beliefs, experiences and needs of adopters'. Trialability is the 'degree to which an idea can be experimented with on a limited basis'. Finally, observability is the 'degree to which the results of an innovation are visible' (Rogers, 1995).

2.3.6 Trustworthiness

Perceptions of trustworthiness could also impact citizens' intention to use state e-Government services. (Bélanger *et al.*, 2002) define trustworthiness as 'the perception of confidence in the electronic marketer's reliability and integrity'. Citizens must have confidence in both the government and the enabling technologies. Privacy and security are reoccurring issues in e-commerce and e-Government research.

Extending the work of previous researchers (Rotter, 1967; 1971; 1980; (McKnight *et al.*, 2002) establish measures for a multidimensional model of trust in e-commerce, focusing on users' initial trust in a web vendor. Initial trust refers to 'trust in an unfamiliar trustee, a relationship in which the actors do not yet have credible, meaningful information about, or affective bonds with, each other' (McKnight *et al.*, 2002). In initial relationships, 'people use whatever information they have, such as perceptions of a web site, to make trust inferences' (McKnight *et al.*, 2002). One of McKnight *et al.*'s (2002) four major constructs, institution-based trust, is associated with an individual's perceptions of the institutional environment, such as the structures, regulations and legislation that make an environment feel safe and trustworthy. This construct contains two dimensions: structural assurance and situational normality. Structural assurance means 'one believes that structures like guarantees, regulations, promises, legal recourse or other procedures are in place to promote success' (McKnight *et al.*, 2002). Situational normality presumes that the environment is normal, favourable, in proper order and that vendors have the attributes: competence, benevolence and integrity (McKnight *et al.*, 2002). The decision

to engage in e-Government transactions requires citizen trust in the state government agency providing the service and citizen trust in the technology through which electronic transactions are executed (Lee & Turban, 2001).

2.4 Comparison of the theoretical models

A critical review of the above mentioned models reveals that these models have introduced additional constructs on top of TAM, to explain technology acceptance but a general evaluation of each model reveals that, similar constructs can be observed in each model, under different names. Usability (perceived ease of use of TAM, technical complexity of DOI, effort expectancy of UTAUT) and functionality (perceived usefulness of TAM, relative advantage of DOI, performance expectancy of UTAUT) consistently showed strong effects on intention to use and actual use in the broadest set of contexts.

TAM, DOI/PCI and trust have been explored by using diverse settings and methods, and their constructs have proved to be important to adoption research. Integrating these three models provides a comprehensive explanation of citizens' intention to use an e-Government service. The theoretical models, in particular TAM and DOI, have overlapping constructs. The complexity construct from DOI is similar (in reverse direction) to the perceived ease of use (PEOU) construct from TAM. However, there may be conceptual distinctions between the two constructs.

One major pitfall that can be observed in most of these studies is the theoretical inconsistencies. By arbitrarily combining various constructs of different models from diverse domains, the internal consistency of constructs are being flawed. Sometimes the constructs included are so similar that they overload or mediate each other out. Another related issue as pointed is the use of invalidated or incompatible survey items. Consequently, a theoretically sound model with good empirical support, which includes facilities for further expansion, would still be a valuable addition to the literature.

Previous studies have failed to address awareness as a construct, without proper sensitization and campaigns citizens will not be able to know what e-Government

services and programs are being provided by the government thus this will impede on the usage of these e-Government services, we included three constructs that will fit the Kenyan context: ICT skills and experience, Cost & Saving and Awareness apart from other constructs from a number of models that have been mentioned in the literature review.

2.5 Research Framework

The research framework for this study is derived from existing frameworks and examined citizens' demand on different levels on e-Government services in addition to testing different variables that might affect citizens' utilization of e-Government services.

The research framework proposed is an integration of TAM and other frameworks used in related work (Davis, et al). In addition, other new dimensions of 'Awareness', 'Cost/Saving', 'Trust', 'ICT Skills and Experience', 'User Satisfaction' and 'Perceived Quality' have been introduced as supported by literature.

TAM has been extensively used to analyze citizens' acceptance in various e-Government researches. It is based on the belief that individual factors affecting the users' decision whether to accept or reject an e-Government service can be identified and measured. TAM sees perceived ease of use and perceived usefulness as fundamental determinants of user acceptance. The two variables influence intention to use an e-Government service, which, in turn, correlates with actual use.

UTAUT model is best used to measure technology acceptance in organizational context. Two of its six variables rely heavily on the technology being introduced in an organization. Some of the criteria suggested to measure 'social influence' include help of the senior management, and organizational support for the new technology. The 'Voluntariness of use' variable for example measures whether technology is compulsory in the job and the extent it is required by the boss, or expected by supervisors.

Both the UTAUT and TAM were primarily designed to be used in an organization environment where the mechanism for technology adoption is management driven. There is a significant difference in the implementation environments between e-business and e-Government services (Conklin, 2007). It is this difference that plays a central role in the approaches to be used to increase adoption of e-Government services. For this reason, this research will seek to modify the TAM model proposed by Davis (1989). According to Serenko and Bontis (2004), the major advantage of TAM is that it can be expanded using domain specific constructs.

Below is a brief description of the constructs that will form the conceptual framework.

2.6 Definition of constructs

Table 3-1: Definition of the research framework constructs.

Construct	Definition	Reference
Perceived Usefulness (PU)	The extent to which a person believes that the technology, under investigation, will enhance his/her productivity or job performance In the e-Government context, it is perceived as the likelihood that the technology will benefit the user in the performance of some task. A significant body of TAM research has provided evidence that PU is a strong determinant of user acceptance, adoption, and usage behavior.	Davis et al.(1989)
Perceived Ease of Use (PEOU)	The extent to which a person believes that using a technology will be simple. This construct is linked to a potential e-Government user's estimation of the	Davis et al. (1989) Rogers (1995)

	effort he or she will put to understand and utilize the technology.	
Perceived Information Quality (PIQ)	Citizens' perceptions of e-Government information quality. Perceived Quality refers to the value of the information created by government through services, laws regulation and other actions.	Colesca and Dobrica (2007)
User Satisfaction (SATISFACTION)	This refers to the overall citizen's satisfaction with e-Government services in terms of content, interface, speed, quality and security.	Colesca and Dobrica (2007)
Perceived Trust (PT)	The perception of confidence in e-Government in terms of reliability and integrity.	Colesca and Dobrica (2007) Roca et. al (2008) Belanger et. al. (2002) McKnight et. al. (2002)
IT Skills and Experience (EXPERIENCE)	Duration of experience and frequency of use. The level of specialized ICT expertise to be able to use e-Government service provided.	Miyaki and Fernandez (2001)
Saving/ Cost	Users perception of whether the cost benefit pattern of using e-Government services is acceptable.	Mathieson et al., 2001
Awareness	People's knowledge of e-Government project or services, and the availability of electronic services.	Choudrie and Dwivedi (2005)
Intention to Use	Reflects the desire to use e-Government services now and in the future. This includes the Willingness to use e-Government services and the	Davis et al. (1989)

	intent to use the e-Government services.	
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2.7 Conceptualization of the variables

According to Cooper and Schindler (2011), “There is nothing very tricky about the notion of independence and dependence. But there is something tricky about the fact that the relationship of independence and dependence is a figment of the researcher’s imagination until demonstrated convincingly. Researchers hypothesize relationships of independence and dependence. They invent them and then they try by reality testing to see if the relationships actually work out that way”. Cooper and Schindler (2011) defines dependent variable as a “variable that is measured, predicted, or otherwise monitored and is expected to be affected by manipulation of an independent variable”. They also defined Independent variable as a “variable that is manipulated by the researcher, and the manipulation causes an effect on the dependent variable”. Lastly they define Moderating variable (also known as interaction variable) as a “second independent variable that is included because it is believed to have a significant contributory or contingent effect on the original independent variable –dependent variable relationship”. Dwivedi and Weerakkody (2007) proposed that personal variables can be considered as independent variables to explain the difference between adopters and non adaptors of technology.

2.7.1 Dependent variable

The dependent variable Intention to Use e-Government will determine the utilization or usage levels of e-Government services.

2.7.2 Independent variables

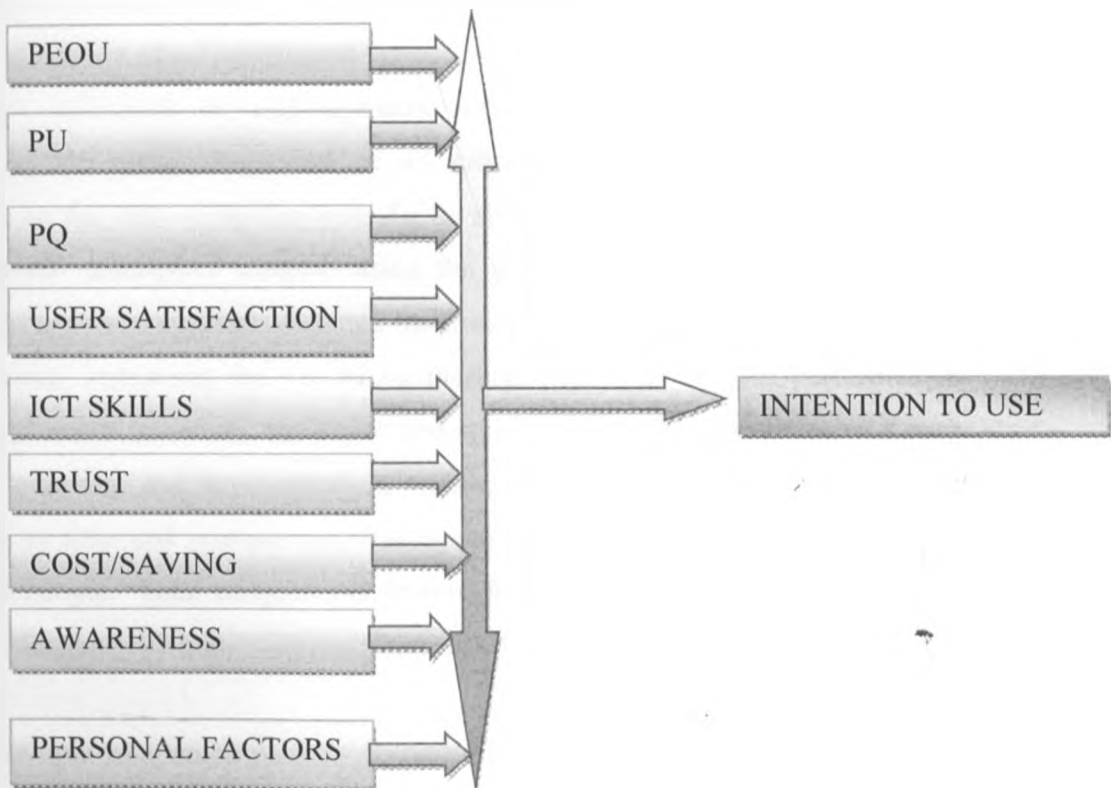
Independent variables are the variables that are expected to affect citizen’s levels of usage / utilization levels of e-Government services, these are:

- Perceived Usefulness

- Perceived Ease of Use
- Perceived Information Quality
- Internet Safety Perception/ Trust of e-Government and Internet
- IT Skills and Experience
- Saving/ Cost
- Awareness
- Satisfaction

2.8 Proposed research framework

Figure 2-5: Proposed Research Framework for e-Government utilization



Source: Research

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes and explains issues related to the research methods and the design of this study and justifies the choice of variables as well as the descriptive research design.

3.1 Methodology

The study employed a descriptive research design as the main objective of the study was to reveal the utilization of e-Government services by Kenyan citizens thus developing a framework for utilization of e-Government services for the citizens. Potential participants for the study comprised of all citizens in Kenya . The study used questionnaires as the data collection tool. To be able to gather the necessary data, the study utilized the descriptive method, using the quantitative approach. Herein, the chosen respondents were randomly selected from the public. A questionnaire was used as the main research instrument for the data-gathering. Data analysis was performed in SPSS. For purposes of this study, the population consisted of all persons living in Kenya and who are e-literate and have access to mobile communication devices or internet services. Due to time and resource constraints, we propose to use a randomly selected sample of 400 people. Total samples was derived from the sample size table developed by Krejcie & Morgan (1970) and Cohen (1969) that is in Appendix II.

The selected sample was issued with questionnaires. The information collected through these questionnaires was our primary data and was analyzed using statistical tools such as SPSS. Descriptive statistics, such as frequency and percentages were used in analyzing data. Other statistical methods such as multiple regression analysis, t-tests and ANOVA were applied.

Churchil (1979) defines measurement as an operation carried out to determine the amount of variable that an object possesses. In this study likert scales was used. The decision to

use this scale was made after considering the fact that such a scale can conveniently show the response from strongly positive to strongly negative with the midpoint indicating a neutral response. Davis (1989) used a five – point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) to measurement of intention to use.

The questionnaire was pre-tested in a pilot survey among potential users of e-Government to determine if there are any ambiguities in the questionnaire items. Based on their feedbacks, some of questionnaire items were rephrased to improve clarity. The reliability of the survey instrument was examined using Cronbach's alpha (Cronbach, 1970).

Our research sought to develop a framework for the utilization of e-Government services from a citizen perspective in Kenya. In order to achieve this objective of the study, we reviewed literature to establish a research framework most suitable for the Kenyan context in assessing the factors that influence e-Government utilization. A number of frameworks were reviewed, the Technology Acceptance Model, Diffusion of Innovation Theory, Trustworthiness Model, TAM 2, TAM 3, UTAUT.

3.2 Research Process

This study utilized the descriptive method of research. As widely accepted, the descriptive method of research is a fact-finding study that involves adequate and accurate interpretation of findings. Descriptive research describes a certain present condition. The technique that was used under descriptive method is the normative approach and evaluation, which is commonly used to explore opinions according to respondents that can represent a whole population.

The purpose of employing the descriptive method was to describe the nature of a condition, as it takes place during the time of the study and to explore the cause or causes of a particular condition. The researcher opted to use this kind of research considering the desire to acquire first hand data from the respondents so as to formulate rational and sound conclusions and recommendations for the study. According to Creswell (1994), the

descriptive method of research is to gather information about the present existing condition. Since this study is focused on the perception or evaluation of the citizen's effective use and application of e-Government services, the descriptive method is the most appropriate method to use.

Only one type of data was used: primary data. Primary data was derived from the answers respondents gave in the self-administered questionnaire prepared by the researcher.

In terms of approach, the study employed the quantitative approach. The quantitative approach focuses on obtaining numerical findings.

3.3 Sampling

The study respondents were directly drawn from the public. All of the participants were selected through random sampling. This sampling method was conducted where each member of a population had an equal opportunity to become part of the sample. As all members of the population had an equal chance of becoming a research participant, this is said to be the most efficient sampling procedure. The population for this study was over 10000 persons; to give the sample size for this research total samples were derived from the sample size table developed by Krejcie & Morgan (1970) and Cohen (1969) as shown in Appendix II.

Herein, there were 400 participants for the questionnaire. The sampling frame was the eight provinces and stratified random sampling was used to identify the specific respondents from different regions across Kenya.

Table 3-1: Sample distribution

Province	Sample	Sample proportion
Nairobi	50	12.5%
Eastern	50	12.5%
Coast	50	12.5%
North Eastern	50	12.5%
Western	50	12.5%
Rift Valley	50	12.5%
Central	50	12.5%
Nyanza	50	12.5%
Total	400	100%

Source: Research

3.4 Data collection method

In gathering information pertaining to the above study, a questionnaire was used as the main research instrument for data collection. The reason for selecting questionnaire as a tool was because it can reach many respondents in relatively short time, inexpensive and has the ability to provide both quantitative scale and qualitative data from a large research sample.

3.5 Research instrument

Questions were compiled from technology adoption literature to represent the constructs in the proposed research framework and wording of the questionnaire was modified to fit the research context and background information collected from the initial informal interviews mentioned above, and comprised nine sections representing the factors that influence utilization of e-Government services: Perceived Ease of use, Perceived usefulness, saving, perceived trust, perceived information quality, user satisfaction, IT skills and experience, awareness and intention to use. 36 closed format questions were

used, limiting individual responses to multiple choice answers, for example, ranking using likert scale (5-point scale) and 'yes' or 'no' answers (Hall and Hall, 1996; Saunders *et al.*, 2002). Data was analyzed using SPSS 17. The questionnaire was divided into two sections. The first part of the questionnaire was designed to focus on the demographic information of the respondents including gender, age, occupation, education level and years of internet experience. The second part included questions about the factors that influence the utilization of e-Government services. The items in the second part were divided into 9 sections including Perceived Ease of use, Perceived usefulness, saving, perceived trust, perceived information quality, user satisfaction, IT skills and experience, awareness and intention to use as shown in table 3-2.

Table 3-2: Construct items and measuring criteria

Construct	Code	Statement
Awareness (AWARE)	AWARE1	I am aware of e-Government services being offered.
	AWARE2	e-Government services are available for use.
Perceived Ease of Use (PEOU)	PEOU1	How do you perceive the easiness of use of an e-Government service?
	PEOU2	How easily do you navigate around an e-Government website?
	PEOU3	Do you receive the expected assistance when you need it?
	PEOU4	e-Government provides better access to service in a single interaction.
Perceived Usefulness(PU)	PU1	Does e-Government service provide the precise information you need?
	PU2	Usually the e-Government services provide up-to-date information?
	PU3	Does e-Government websites enable you to actively give your opinion to the government?
	PU4	Are you able to communicate with government officials through e-Government services?
Saving (SAVE)	SAVE1	Are there any savings (time, money) using e-Government services?
	SAVE2	By using e-Government services citizens save money
	SAVE3	By using e-Government services citizens save time
Perceived Trust(PT)	PT1	Do you feel that the e-Government services providers are trustworthy?

	PT2	Do you feel confident about your privacy protection when using e-Government service?
	PT3	Do you feel your transaction is secure when using an e-Government service?
	PT4	Do you believe that there could be negative consequences from using e-Government services?
Perceived Information Quality (PIQ)	PIQ1	Does e-Government services provide accurate information?
	PIQ2	Does e-Government services provide reliable information?
	PIQ3	Does e-Government services provide relevant information?
	PIQ4	Does e-Government services provide easy-to-understand information?
User Satisfaction (SAT)	US1	Are you satisfied using e-Government services?
	US2	Are you satisfied with the content of e-Government services?
	US3	Are you satisfied with the interface of e-Government services?
	US4	Are you satisfied with the speed of e-Government services?
	US5	Are you satisfied with the quality of e-Government?
	US6	Are you satisfied with the security of e-Government services?
IT Skills and Experience (EXP)	EXP1	I am familiar with a mouse, keyboard and computer.
	EXP2	I can easily download a document from the Internet.
	EXP3	I have no difficulty in sending and receiving emails.
	EXP4	I find it easy to surf on the Internet.
Usage (IU)	IU1	Would you use electronic government service to gather Information?
	IU2	Would you use electronic government service to send an message for a query?
	IU3	Would you use electronic government service to submit Personal Information if needed.?
	IU4	Would you use electronic government service to pay service charges online?

Source: Research

3.6 Pilot test

8 questionnaires were prepared and used to collect information from respondents who were picked at random from the public. The pilot was important to improve the questions and to test respondents' comprehension and clarity before the actual survey was administered (Saunders *et al.*, 2002).

The assessment resulted in re-organization of the test items into different domain constructs. Some test items were re-framed for clarity.

3.7 Validity

Instrument validity is an essential and prior process in confirmatory empirical research (Straub, 1989). Saunders et al (2006) defines validity as the extent to which the data collection method or methods accurately measures what they were intended to measure. In ensuring validity data was collected from citizens from different regions across Kenya, the data collection instrument was developed based on literature review and pre-tested for meaning and semantics against the definitions of the constructs by experts.

3.8 Reliability Measurement

Reliability is an assessment of the degree of consistency between multiple measurements of a variable. One type of reliability test that is widely used and is employed here is the Cronbach's alpha. We have used it because it is the most common reliability measure used in related work (Davis, 1989). The generally agreed upon lower limit for Cronbach's alpha is 0.7 (Pallant, 2003; Colesca & Dobrica, 2008; Davis, 1989). The results of the Cronbach's alpha of the reliability analysis are presented in the table below. The reliability analysis gave alpha coefficients of 0.89 as shown in Appendix III. Alpha coefficients which are above 0.70 are regarded as acceptable reliability coefficients. Hence, the results demonstrate that the questionnaire is a reliable measurement instrument. Due to insufficient sample data factor analysis was not used.

CHAPTER FOUR: RESULTS & DISCUSSIONS

4.0 Introduction

In this chapter, the data collected during the research was statistically analyzed in a logical sequence of statistical tests adopted from best practice in previous e-Government adoption literature (Carter & Belanger, 2005) and reported. First descriptive statistics such as frequency distribution tables, bar graphs and pie charts were used to summarize demographic variables. t-test, Regression and analysis of variance (ANOVA) were used to analyse the data and test the association between the constructs in the research framework with regard to the research objectives.

4.1 Data analysis

4.1.1 Methods of data analysis

Both descriptive and inferential statistics were used to analyze data. Descriptive statistics included means, frequencies and percentages. Inferential statistics included regression analysis and parametric tests such as t-test and Analysis of variance (ANOVA).

To achieve the first objective which was (To assess the extent to which citizens in Kenya would use e-Government services), simple descriptive statistics such as frequencies and percentages were used.

To achieve the second objective which was (To determine the factors that contribute to e-Government services use in Kenya), regression analysis was used. Co-efficients with a p-value less than 0.05 indicated that the factor was a significant contributor to intention to use e-Government.

To achieve the third objective which was to (To find out whether the intention to use e-Government services differs across selected personal factors), parametric tests such as t-

test and ANOVA were used. Regression analysis was also used to confirm the relationship between demographic factors and intention to use e-Government.

To achieve the fourth objective which was (To develop a framework for the utilization of e-Government Services from a citizen perspective in Kenya), multiple regression analysis was used. P-values were considered in the construction of the framework.

Both regression output for technology acceptance model constructs and demographic variables was used to arrive at the framework. The framework was validated by removing constructs whose p-values were more than 0.05.

4.2 Response Rate

The successful response rate was 59 percent and the unsuccessful response rate was 41 percent as reflected in table 4.1 below.

Table 4-1: Response Rate

	Response rate	% Response rate
Successful	235	59%
unsuccessful	165	41%
Total	400	100%

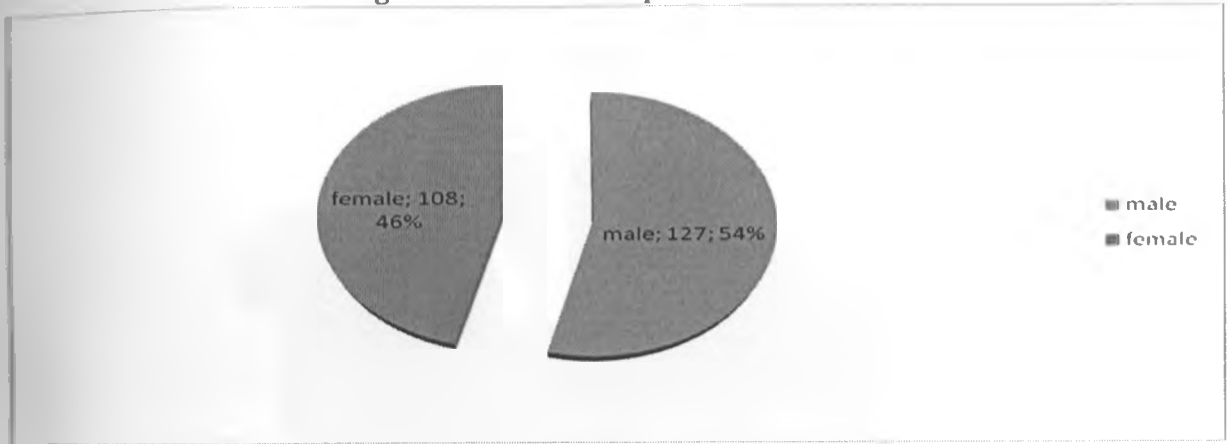
Source: Research

A total of 235 valid responses/Questionnaires were received out of a possible 400 Questionnaires. The response rate was 59 percent. According to Mugenda and Mugenda (1999), a response rate of 50 percent or more is adequate for data analysis.

4.3 Gender Response rate

The study sought to establish the gender distribution of the respondents. The findings were presented in figure 4.1 below.

Figure 4-1: Gender Response rate



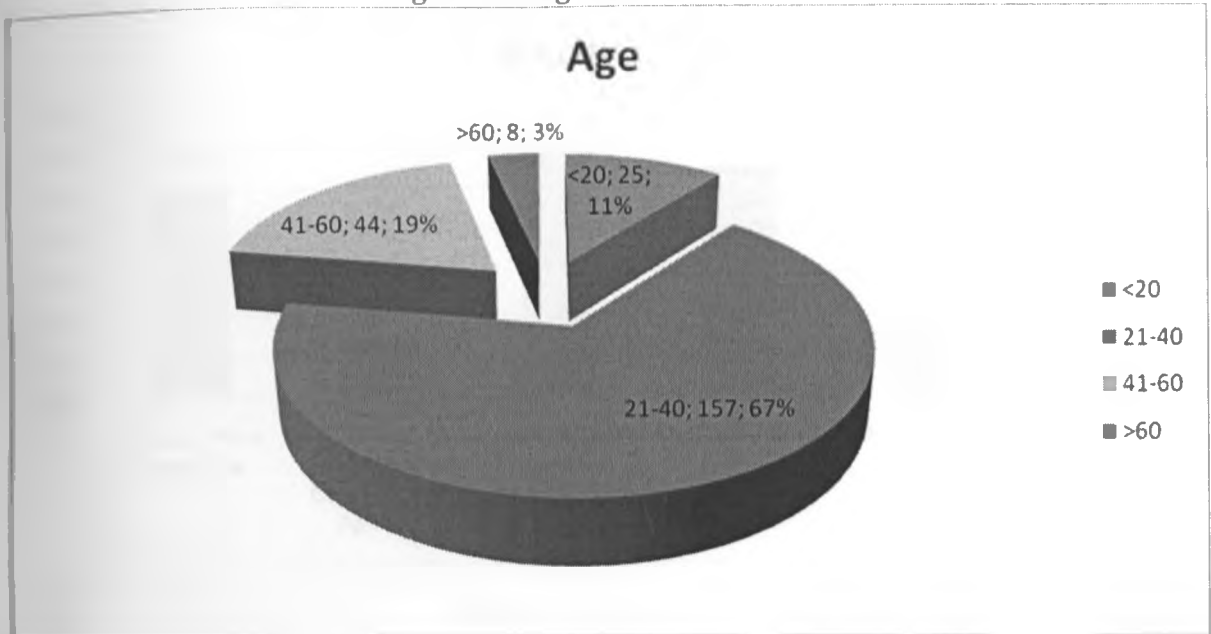
Source: Research

From the study findings, slightly more than half of the respondents (54%) were male and slightly below half (46%) were female. These findings imply that the gender distribution was almost equal across the respondents as shown in figure 4.1. The findings may also be explained by recently concluded census in Kenya which placed the gender distribution at a 50:50 ratio.

4.4 Age Distribution

The study attempted to establish the age distribution of the respondents. The findings were presented in figure 4.2 below.

Figure 4-2: Age distribution



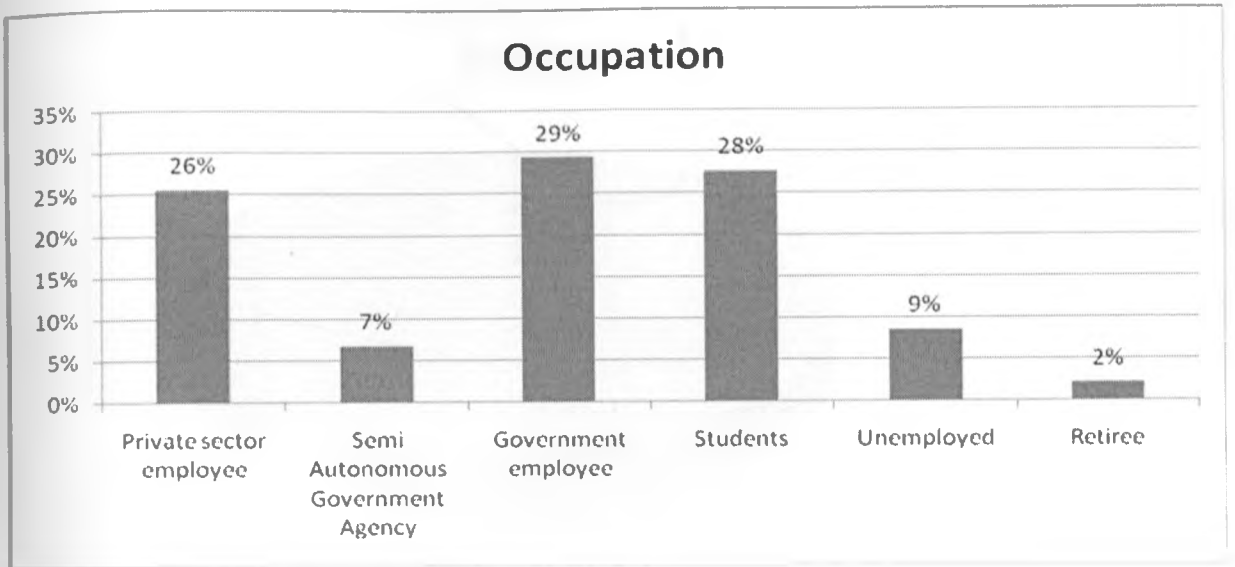
Source: Research

A majority of slightly more than half of the respondents (67%) were aged between 21-40 years. Nineteen percent (19%) of the respondents were aged between 41-60 years. Eleven percent (11%) of the respondents were aged under 20 years and finally, three percent (3%) of the respondents were aged over 60 years. The study findings imply that the respondents were capable of answering the study questions accurately and adequately.

4.5 Occupation

The study also seeks to establish the occupation of the respondents. The findings were presented in figure 4.3 below.

Figure 4-3: Occupation



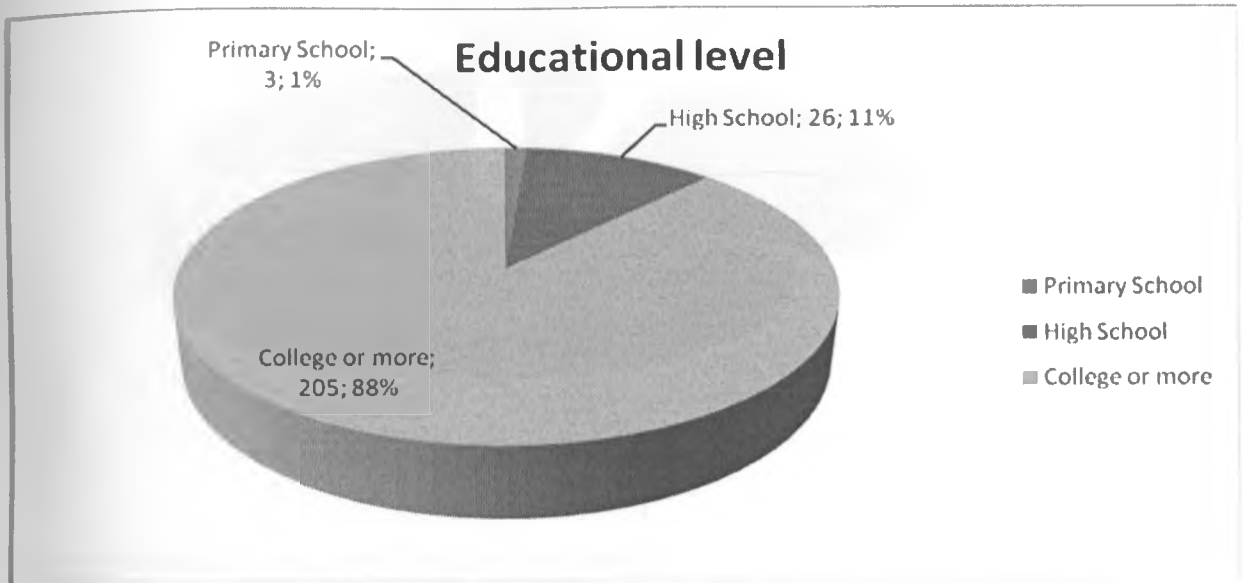
Source: Research

Study findings reveal that a majority of the respondents (29%) were Government employees. Twenty eight percent (28%) of the respondents indicated that they were students. It is clear from figure 4.3 above that twenty six percent (26%) of the respondents worked in private sectors, nine percent (9%) of the respondents were unemployed, seven percent (7%) of the respondents worked in a semi autonomous government agency while two percent (2%) of the respondents indicated that they had already retired. These results imply that the respondents may have been exposed to the e-Government practices in government sectors hence knowledgeable to answer the study questions adequately. In addition, the findings imply that the respondents were well distributed across all categories of users.

4.6 Educational level

The study sought to establish the education level of the respondents. The findings were presented in figure 4.4 below.

Figure 4-4: Educational level



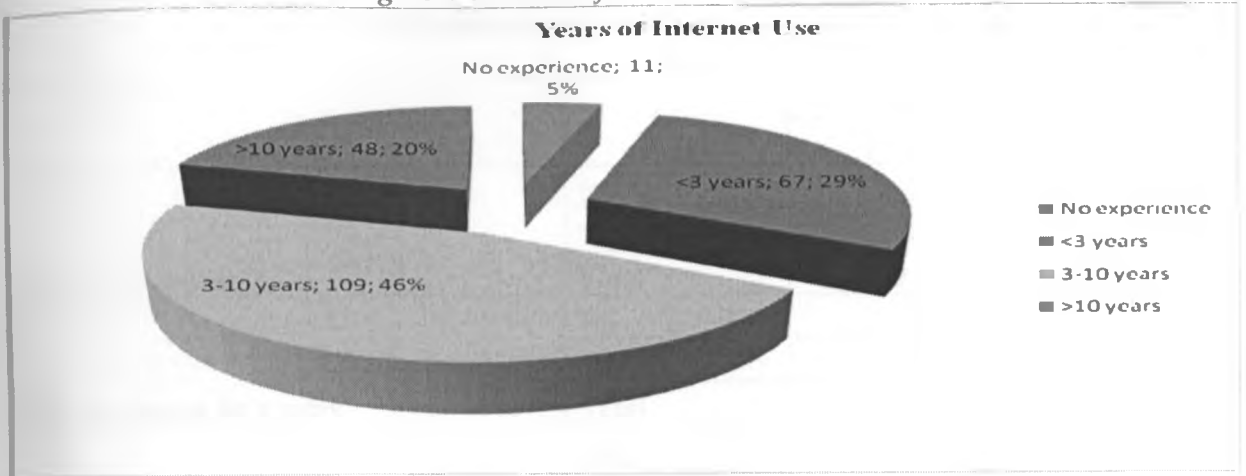
Source: Research

The study outcomes indicate that majority of the respondents (80%) were educated up to the college level. Results also show that eleven percent (11%) of the respondents were high school leavers while one percent (1%) of the respondents indicated that they were educated up to primary school level. These results imply that the majority of the respondents were educated enough to be able to understand the questions and answer them accordingly.

4.7 Years of Internet Use

The study attempted to establish the years of internet use by the respondents. The findings were presented in figure 4.5 below.

Figure 4-5: Years of Internet Use



Source: Research

Findings show that a majority of slightly less than half (46%) of the respondents had used internet services for a period between 3-10 years. Twenty nine percent (29%) of the respondents indicated that they had used internet services for less than 3 years. Results further reveal that twenty percent (20%) of the respondents had used internet for over 10 years while five percent (5%) pointed out that they had no experience on how to use internet.

4.8 The intention to use e- government services among citizens in Kenya

One of the objectives of this study was to assess the extent to which citizens would use e government services.

Table 4-2: Intention to use e-Government services

Question	Scale	Distribution	
		f	%
Gather Information	No	50	21.3%
	Yes	185	78.7%
	Total	235	100.0%
Send an message for a query	No	119	50.6%
	Yes	116	49.4%
	Total	235	100.0%
Submit Personal Information if needed	No	116	49.4%
	Yes	119	50.6%
	Total	235	100.0%
Pay service charges online	No	132	56.2%
	Yes	103	43.8%
	Total	235	100.0%

Source: Research

Results in table 4.2 indicate that the majority of people (78.7%) would use government websites for informative online services. As the level of government services increased, the intention of citizen to use them decreased as shown by those who intend to send a message for a query(49.4%), those who intended to submit personal information if needed(50.6%), those who intended to pay service charges online(43.8%). The findings are consistent with those of Mofleh and Wanous (2008) who found similar results in the Jordanian Case study which assessed the factors influencing e-adoption in the developing world.

4.9 Factors that contribute to e-Government services use in Kenya

The study sought to establish the relationship between factors affecting the intention to use e-Government services and the intention to use e-Government services. First, the descriptive statistics were calculated. Results are presented in table 4.3.

Table 4-3: Descriptive statistics for factors

	N	Minimum	Maximum	Mean	Std. Deviation
AWARENES	235	1	5	3.90	1.017
PEOU	235	1.0	5.0	3.205	.9525
PU	235	1	5	2.98	1.035
SAVE	235	1.000	5.000	3.35745	1.250597
PT	234	1	5	3.09	.862
PIQ	235	1.00	5.00	3.2787	.96933
SATISFACTION	235	1.000	5.000	2.84255	1.030879
EXPERIENCE	235	1	5	4.57	.811
Valid N (listwise)	234				

Source: Research

Descriptive results that the mean for internet experience was 4.57 implying that respondents rated themselves highly as far as previous internet experience was concerned. In addition, the mean awareness was 3.9 which imply that respondents agreed to the statements that they were aware of e-Government services being offered. Satisfaction was the most poorly rated with a mean of 2.84 which implies that respondents were not satisfied with the e-Government interfaces, speed, quality and security. The rest of the findings are presented in table 4.3.

A regression was conducted to establish the relationships between the factors and the intention to use e-Government services. The results are displayed in Table 4.4

Table 4-4: Regression output

Dependent Variable: usage		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
(Constant)	-.231	.177		-1.302	.194	
AWARENES	.040	.036	.086	1.093	.027	
PEOU	.028	.047	.056	.592	.023	
PU	.094	.048	.208	1.957	.042	
SAVE	.008	.033	.021	.234	.015	
PT	.132	.050	-.242	-2.624	.009	
PIQ	.088	.047	.182	1.872	.006	
SATISFACTION	.084	.049	.184	1.696	.041	
EXPERIENCE	.051	.036	.088	1.400	.003	
R square		.632				

Source: Research

$$\text{Usage} = -0.231 + 0.04\text{Awareness} + 0.028\text{perceived ease of use} + 0.094\text{perceived Usefulness} + 0.008\text{savings} + 0.132\text{Percived Trust} + 0.088\text{Perceived Information quality} + 0.088\text{satisfaction} + 0.051\text{Experience}.$$

The findings indicate that the model of fit was 0.632 implying that 63.2% of variations in the dependent variable (USAGE) were explained by movements in the independent variables. There was a positive relationship between the awareness and Usage as reflected by a coefficient of 0.04 (p value of 0.027). This means that an increase in awareness by 1% leads to an increase in intention to use by 0.04%. The coefficient of awareness (0.04) is statistically significant as the p value was 0.027. It clear that 0.027 is lesser than the conventional significance level of 0.05.

There was a significant positive relationship between the perceived ease of use and Usage as reflected by a coefficient of 0.028 (p value of 0.023). This means that an increase in perceived ease of use by 1% leads to an increase in intention to use by 0.028%. The findings are consistent with those of Davis *et al.* (1989) who asserted that perceived ease of use (PEOU) influence one's attitude towards system usage, which influences

one's behavioral intention to use a system, which, in turn, determines actual system usage.

There was a significant positive relationship between the perceived usefulness and Usage as reflected by a coefficient of 0.094 (p value of 0.042). This means that an increase in perceived usefulness by 1% leads to an increase in intention to use by 0.094%. The findings were in agreement with those of Davis *et al.* (1989) who concluded that positively valued outcomes resulting from the use of the technology will influence users' beliefs about its usefulness.

There was a significant positive relationship between the Savings and Usage as reflected by a coefficient of 0.008 (p value of 0.015). This means that an increase in Savings by 1% leads to an increase in intention to use by 0.008%.

There was a significant positive relationship between the perceived trust and Usage as reflected by a coefficient of 0.132 (p value of 0.009). This means that an increase in perceived trust by 1% leads to an increase in intention to use by 0.132%. The findings agree with those of Lee & Turban, (2001) who asserts that the decision to engage in e-Government transactions requires citizen trust in the state government agency providing the service and citizen trust in the technology through which electronic transactions are executed.

There was a significant positive relationship between the perceived information quality and Usage as reflected by a coefficient of 0.08 (p value of 0.06). This means that an increase in perceived information quality by 1% leads to an increase in intention to use by 0.08%.

There was a significant positive relationship between the satisfaction and Usage as reflected by a coefficient of 0.084 (p value of 0.041). This means that an increase in satisfaction by 1% leads to an increase in intention to use by 0.084%.

There was a significant positive relationship between the ICT skills or Experience and Usage as reflected by a coefficient of 0.051 (p value of 0.03). This means that an increase in ICT experience by 1% leads to an increase in intention to use by 0.051%.

4.10 Difference in intention to use e-Government services across selected personal factors

4.10.1 Gender and e-Government use

A two sample t-test was conducted to establish whether there was any significant difference between the mean response for male and female as far as e-Government use was concerned.

Table 4-5: Group statistics for gender against intention to use e-Government

Group Statistics		N	Mean	Std. Deviation	Std. Error Mean
usage	gender				
	male	127	.69	.466	.041
	female	108	.66	.477	.046

Table 4-6: t- test for equality of means for gender

usage					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
.448	233	.655	.028	.062	-.094	.149

Source: Research

It is clear from the two sample t-test results that males have a higher mean response (0.69) than females (0.66) in relation to intention to use e-Government services. However, the difference in mean responses is not significant as indicated by a p value of 0.655 which is greater than the conventional value of 0.05. The finding implies that intention to use does not differ across the two gender categories. This finding is consistent with previous research by Colesca and Dobrica (2008) that failed to attest the significance of gender in e-Government adoption.

4.10.2 Age and e-Government use

An ANOVA test was carried out to test whether usage differs across the various age categories.

Table 4-7: Group statistics for age against intention to use e-Government

Descriptive									
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
<20	25	.60	.500	.100	.39	.81	0	1	
21-40	158	.65	.478	.038	.58	.73	0	1	
41-60	44	.80	.408	.062	.67	.92	0	1	
>60	8	.63	.518	.183	.19	1.06	0	1	
Total	235	.67	.470	.031	.61	.73	0	1	

Table 4-8: ANOVA results for age against intention to use e-Government.

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.882	3	.294	1.334	.264
Within Groups	50.889	231	.220		
Total	51.770	234			

Table 4-9: Multiple comparison of age groups.

Multiple Comparisons						
(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<20	21-40	-.052	.101	.608	-.25	.15
	41-60	-.195	.118	.098	-.43	.04
	>60	-.025	.191	.896	-.40	.35
21-40	<20	.052	.101	.608	-.15	.25
	41-60	-.144	.080	.074	-.30	.01
	>60	.027	.170	.874	-.31	.36
41-60	<20	.195	.118	.098	-.04	.43
	21-40	.144	.080	.074	-.01	.30
	>60	.170	.180	.346	-.18	.53
>60	<20	.025	.191	.896	-.35	.40
	21-40	-.027	.170	.874	-.36	-.31
	41-60	-.170	.180	.346	-.53	.18

Source: Research

The above results indicate that there is no significant difference on the mean response of intention to use e-Government services among the four age groups. This is evidenced by a p value of 0.264.

4.10.3 Occupations and e-Government use

Anova test was carried out to test whether there was any significant difference in the mean responses for intention to use e-Government services across the various occupations.

Table 4-10: Group statistics for occupation against intention to use e-Government

Descriptives								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Private sector employec	60	.70	.462	.060	.58	.82	0	1
Semi Autonomous Government Agency	16	.94	.250	.062	.80	1.07	0	1
Government employee	69	.78	.415	.050	.68	.88	0	1
Students	65	.55	.501	.062	.43	.68	0	1
Unemployed	20	.40	.503	.112	.16	.64	0	1
Retiree	5	.60	.548	.245	-.08	1.28	0	1
Total	235	.67	.470	.031	.61	.73	0	1

Table 4-11: ANOVA results for occupation.

Anova					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.432	5	.886	4.288	.001
Within Groups	47.338	229	.207		
Total	51.770	234			

Source: Research

Table 4-12: Multiple comparison for occupation.

Multiple Comparisons						
(I) occupation	(J) occupation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Private sector employee	Semi Autonomous Government Agency	-.238	.128	.065	-.49	.01
	Government employee	-.083	.080	.304	-.24	.08
	Students	.146	.081	.074	-.01	.31
	Unemployed	.300*	.117	.011	.07	.53
	Retiree	.100	.212	.637	-.32	.52
Semi Autonomous Government Agency	Private sector employee	.238	.128	.065	-.01	.49
	Government employee	.155	.126	.221	-.09	.40
	Students	.384*	.127	.003	.13	.63
	Unemployed	.538*	.152	.001	.24	.84
	Retiree	.338	.233	.149	-.12	.80
Government employee	Private sector employee	.083	.080	.304	-.08	.24
	Semi Autonomous Government Agency	-.155	.126	.221	-.40	.09
	Students	.229*	.079	.004	.07	.38
	Unemployed	.383*	.115	.001	.16	.61
	Retiree	.183	.211	.387	-.23	.60
Students	Private sector employee	-.146	.081	.074	-.31	.01
	Semi Autonomous Government Agency	-.384*	.127	.003	-.63	-.13
	Government employee	-.229*	.079	.004	-.38	-.07
	Unemployed	.154	.116	.187	-.08	.38
	Retiree	-.046	.211	.827	-.46	.37
Unemployed	Private sector employee	-.300*	.117	.011	-.53	-.07
	Semi Autonomous Government Agency	-.538*	.152	.001	-.84	-.24
	Government employee	-.383*	.115	.001	-.61	-.16
	Students	-.154	.116	.187	-.38	.08
	Retiree	-.200	.227	.380	-.65	.25
Retiree	Private sector employee	-.100	.212	.637	-.52	.32
	Semi Autonomous Government Agency	-.338	.233	.149	-.80	.12
	Government employee	-.183	.211	.387	-.60	.23
	Students	.046	.211	.827	-.37	.46
	Unemployed	.200	.227	.380	-.25	.65

*. The mean difference is significant at the 0.05 level.

Source: Research

Results indicate that the mean response differs across the various types of occupations. Hence type of occupation is a significant determinant to the intention to use e-

Government services. This is supported by a p value of 0.001 which is less than the conventional value of 0.05. The majority of the respondents were Government employees (29%), students (28%), private sector (26%), Unemployed (9%), Semi Autonomous Government Agency (7%) and retirees (2%).

4.10.4 Education and e-Government use

Anova test was conducted to test whether there was any significant difference in the mean responses for intention to use e-Government services across the various education levels.

Table 4-13: Group statistics for education against intention to use e-Government

Descriptives								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Primary School	3	.00	.000	.000	.00	.00	0	0
High School	26	.54	.508	.100	.33	.74	0	1
College or more	206	.70	.460	.032	.64	.76	0	1
Total	235	.67	.470	.031	.61	.73	0	1

Table 4-14: ANOVA results for education.

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.969	2	.984	4.586	.011
Within Groups	49.801	232	.215		
Total	51.770	234			

Source: Research

Table 4-15: Multiple comparisons for education.

Multiple Comparisons						
(I) educatio	(J) educatio	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary School	High School	-.538	.283	.058	-1.10	.02
	College or more	-.699*	.269	.010	-1.23	-.17
High School	Primary School	.538	.283	.058	-.02	1.10
	College or more	-.161	.096	.097	-.35	.03
College or more	Primary School	.699*	.269	.010	.17	1.23
	High School	.161	.096	.097	-.03	.35

*. The mean difference is significant at the 0.05 level.

Source: Research

Results indicate that the mean response differs across the various levels of education. Hence level of education is a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.011 which is less than the conventional value of 0.05. Prior research (Colesca and Dobrica, 2008) showed that more highly educated people find Government websites to provide more information consequently they are more likely to access Government websites. The majority of the respondents (88%) were from college level or higher.

4.10.5 Internet skills on intention to use e-Government services

Anova test was carried out to test whether there was any significant difference in the mean responses for intention to use e-Government services across the various internet levels of experience.

Table 4-16: Group statistics for internet experience against intention to use e-Government

Descriptives									
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
No experience	11	.09	.302	.091	-.11	.29	0	1	
<3 years	67	.72	.454	.055	.61	.83	0	1	
3-10 years	109	.71	.458	.044	.62	.79	0	1	
>10 years	48	.67	.476	.069	.53	.80	0	1	
Total	235	.67	.470	.031	.61	.73	0	1	

Table 4-17: ANOVA results for internet experience.

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.977	3	1.326	6.407	.000
Within Groups	47.793	231	.207		
Total	51.770	234			

Table 4-18: Multiple comparisons for internet experience.

Multiple Comparisons						
(I) internet	(J) internet	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No experience	<3 years	-.626*	.148	.000	-.92	-.33
	3-10 years	-.616*	.144	.000	-.90	-.33
	>10 years	-.576*	.152	.000	-.88	-.28
<3 years	No experience	.626*	.148	.000	.33	.92
	3-10 years	.010	.071	.888	-.13	.15
	>10 years	.050	.086	.564	-.12	.22
3-10 years	No experience	.616*	.144	.000	.33	.90
	<3 years	-.010	.071	.888	-.15	.13
	>10 years	.040	.079	.614	-.12	.20
>10 years	No experience	.576*	.152	.000	.28	.88
	<3 years	-.050	.086	.564	-.22	.12
	3-10 years	-.040	.079	.614	-.20	.12

*. The mean difference is significant at the 0.05 level.

Source: Research

Results indicate that the mean response differ across the various levels of internet experience. Hence level of internet experience is a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.000 which is less than the conventional value of 0.05. More experienced users tend to seek more value from internet services. Users with prior internet experience, especially if satisfied, would likely use e-Government services (Colesca and Dobrica, 2008).

The above results were supported by regression analysis. Specifically, the regression equation tested whether there was a significant causal relationship between demographic factors and the intention to use e-Government services. The results given below indicate that there is a negative relationship between gender and intention to use e-Government services (-0.036, p value of 0.554). This implies that as one moves along the gender continuum (male =1, female =2), the intention to use declines. However, the relationship

is not significant. Results also indicate that there is a positive but insignificant relationship between age and intention to use (0.054, p value 0.278).

Results indicate that there exists a negative and significant relationship between occupation an intention to use (-0.050, p value of 0.026). The relationship between education level and intention to use was positive and significant (0.18, p value of 0.047). The relationship between internet skills and intention to use was positive and significant (0.003, p value 0.045).

Table 4-19: Model Summary. Predictors: (Constant), internet, gender, occupation, age, education

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.245 ^a	.060	.039	.461

Table 4-20: Regression output for demographic factors against intention to use e-Government. Dependent Variable: usage

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.249	.281		.886	.376
	gender	-.036	.061	-.038	-.592	.554
	age	.054	.049	.073	1.087	.278
	occupation	-.050	.022	-.147	-2.242	.026
	education	.180	.090	.145	1.996	.047
	internet	.003	.044	-.005	-.069	.045

Source: Research

4.11: Validation of the utilization framework.

Another objective was to develop, test and validate a framework for the utilization of e-Government Services from a citizen perspective in Kenya.

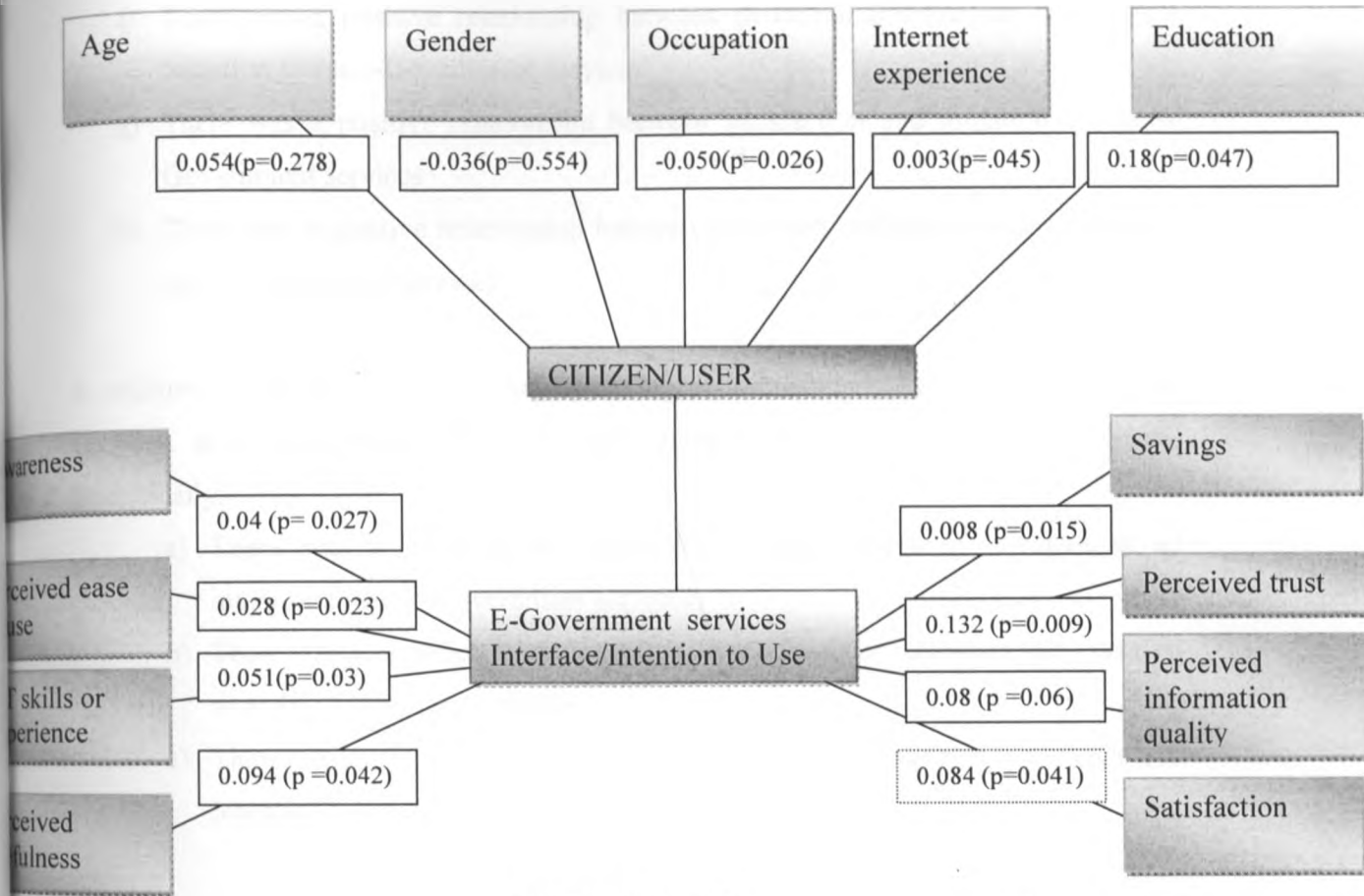
4.11.1: Framework before validation

The proposed framework had 8 constructs adapted from models reviewed in literature. These constructs were awareness, perceived ease of use, ICT skills or Experience, Savings, perceived trust, perceived information quality, satisfaction, and perceived usefulness. Personal factors were also considered as essential elements of the framework. These personal factors were Age, Gender, types of occupations, levels of education and levels of internet experience.

The proposed framework was tested to assess how well it served the requirements of the citizen intention to use e- government services. This was by done by developing a questionnaire based on the framework elements. The questionnaire contained a perception test item for each of the elements of the framework, a perception item for self predicting e-Government adoption.

The specific framework before validation had all the constructs irrespective of whether they were significantly related to intention to use e-Government services.

Figure 4-6: Conceptual framework



Source: Research

4.11.2 Framework after validation

The framework was supported and validated by the regression results in chapter four. The regression results indicated that;

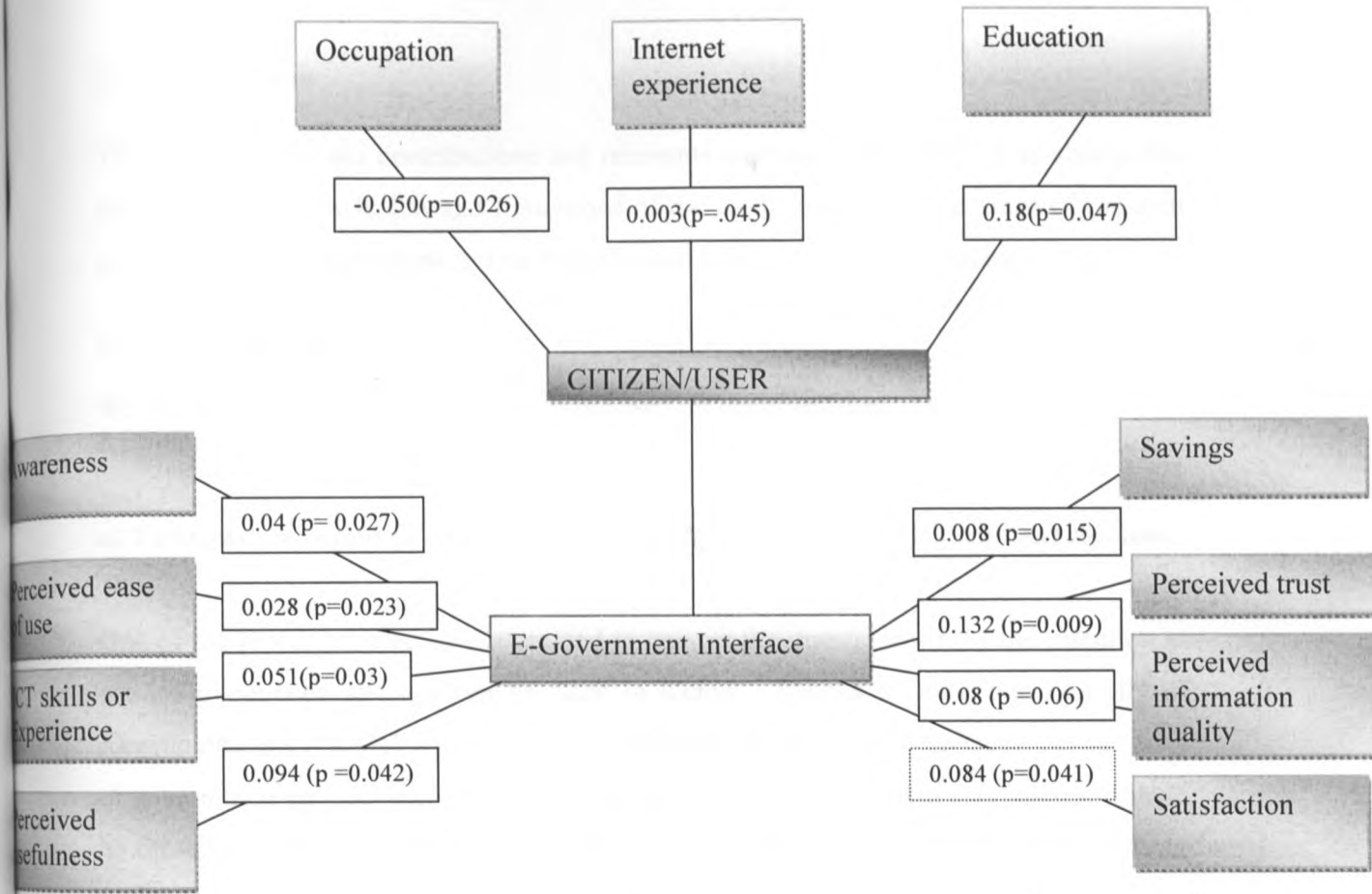
- There was a positive relationship between awareness and intention to use e-Government services
- There was a positive relationship between perceived ease of use and intention to use e-Government services
- There was a positive relationship between ICT skills or Experience and intention to use e-Government services
- There was a positive relationship between Savings and intention to use e-Government services

- e) There was a positive relationship between perceived trust and intention to use e-Government services
- f) There was a positive relationship between perceived information quality and intention to use e-Government services
- g) There was a positive relationship between satisfaction and intention to use e-Government services
- h) There was a positive relationship between perceived usefulness and intention to use e-Government services

In addition, it was also possible to infer from regression results that a relationship existed between several personal factors and the intention to use e-Government services. Specifically,

- a) There was a significant relationship between types of occupations and intention to use e-Government services
- b) There was a significant relationship between levels of education and intention to use e-Government services
- c) There was a significant relationship between levels of internet experience and intention to use e-Government services

Figure 4-7: Validated framework



Source: Research

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.0: Introduction

The chapter addresses contributions and recommendations of the study. It is also in this chapter that the conclusion and limitations of the study and suggested areas of research are given. All this were done in line with the study objectives and research questions.

5.1: Contributions

We discuss the contributions of the study based on the objectives. The objectives formulated were;

a) To assess the extent to which citizens in Kenya would use e-Government services.

One of the research objectives attempted to answer the question of how the intention to use e-Government services can be rated in Kenya. Results indicate that majority of Kenyan citizens (78.7%) would use e-Government for informative services. As the level of government services increased, the intention of citizen to use them decreased as shown by those who intend to send a message for a query(49.4%), those who intended to submit personal information if needed(50.6%), those who intended to pay service charges online(43.8%). The findings are consistent with those of Mofleh and Wanous (2008) who found that the level of demand dramatically decreases as the services level of e-Government Increases in the developing world. The Kenyan government should focus more on achieving high quality low level informative services before moving to more advanced levels of e-Government services to enable it to be more responsive to citizens needs and a have a positive relationship with the citizens.

b) To determine the factors that contributes to e-Government service use in Kenya.

The second objective attempted to answer the question of what the factors that contributes to the intention to use e-Government services in Kenya are. Regression results indicated the following results;

Perceived Usefulness: There was a significant positive relationship between the perceived usefulness and Usage as reflected by a coefficient of 0.094 (p value of 0.042). This finding is consistent with Davis et. al (1989) and many prior technology adoption research.

Perceived ease of Use: There was a significant positive relationship between the perceived ease of use and Usage as reflected by a coefficient of 0.028 (p value of 0.023). This finding is consistent with Davis et. al (1989) and many prior technology adoption research. When e-Government services are perceived to be useful, user's intention to adopt it would be greater. Likewise users are likely to adopt e-Government services when they are easy to use. This shows that users anchor their intention to use e-Government services and systems to the beneficial outcomes and ease of use process of the system.

Awareness: There was a significant positive relationship between awareness and Usage as reflected by a coefficient of 0.04 (p value of 0.027). The study found that increasing awareness by 1% leads to an increase of intention to use by 0.04%. Heightening citizens' awareness of the available e-Government services, benefits of using them and government efforts to make its e-Government services trustworthy will increase their willingness to use them. If potential users are not aware of online of online services, they will not be able to use them.

ICT skills and Experience: There was a significant positive relationship between the ICT skills or Experience and Usage as reflected by a coefficient of 0.051 (p value of 0.03). Experience reduces cost of searching information. This finding is consistent with Miyaki and Fernandez (2001) who found that citizens who have the necessary skill and technical knowledge are more likely to utilize e-Government services. Citizens are more likely to utilize e-Government services when ICT expertise is available, by reason of the ICT expertise can increase their tendency to utilize or in the usage of the provided e-Government services. Lack of ICT expertise becomes a key factor in reducing ICT implementation and utilization (Miyaki and Fernandez , 2001).

Savings/Cost: There was a significant positive relationship between the Savings and Usage as reflected by a coefficient of 0.008 (p value of 0.015). This is consistent with Gilbert et. al (2004) who found that citizens' willingness to use e-Government services are increased if they perceive that the electronic public service is saving their money and time.

Trust: There was a significant positive relationship between the perceived trust and Usage as reflected by a coefficient of 0.132 (p value of 0.009). This finding is consistent with prior research in e-Government domain that highlighted the importance of trust as a determinant of citizens' adoption of e-Government services (Colesca and Dorica, 2007, Roca et. Al, Belanger et. al, 2002, McKnight et. al., 2002). To utilize e-Government services citizens must have the intention to gather information, to provide information and to request e-Government services. Citizens are more likely to utilize e-Government services when they are assured that they can trust the systems put in place, their privacy is assured, at the same time the security of their transactions are safe. Users are not ready to take chances with systems which are not trustworthy. Without confidence and trust in e-Government services realization of advanced level e-Government service delivery will remain a challenge.

Information quality: There was a significant positive relationship between the perceived information quality and Usage as reflected by a coefficient of 0.08 (p value of 0.06). By providing accurate, reliable, relevant and easy to understand information, citizens' utilize e-Government services will increase. These governments can achieve by auditing e-Government portals and websites to ensure information provided is accurate and up-to-date; and being sensitive to citizen's enquiries by providing timely response to such enquiries.

Satisfaction: There was a significant positive relationship between the satisfaction and Usage as reflected by a coefficient of 0.084 (p value of 0.041). There was a significant positive relationship between the perceived usefulness and Usage as reflected by a coefficient of 0.094 (p value of 0.042).

c) To find out whether the intention to use e-Government services differs across selected personal factors

Gender

Another research objective attempted to find out whether the intention to use e-Government services differs across selected personal factors. Results indicate that the mean response on intention to use e-Government services does not differ across the two genders. Hence gender is not a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.655 which is greater than the conventional value of 0.05. This finding is consistent with previous research by Colesca and Dobrica (2008) that failed to attest the significance of gender in e-Government.

Age

Results indicate that the mean response on intention to use e-Government services differs across the four age groups. Hence age is not significant determinant to the intention to use e-Government services. This is supported by a p value of 0.264 which is greater than the conventional value of 0.05. The finding surprisingly implies that age is not a significant determinant of intention to use e-Government services. This finding is unexpected but it looks normal if we take into account that most of the research respondents (89%) are aged above 20 yrs and had good education and internet use profile.

Occupation

Results indicate that the mean response on intention to use e-Government services differs across the various types of occupations. The majority of the respondents were Government employees (29%); (mean=78), students (28%); (mean=55), private sector (26%); (mean=70), Unemployed (9%); (mean=40), Semi Autonomous Government Agency (7%); (mean=94) and retirees (2%); (mean=60), Occupation is a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.001 which is less than the conventional value of 0.05. Results showed that public sector employees (Government employees and Semi Autonomous Government Agency) had the highest mean response. This finding is consistent with (Reddick, 2005) who

found that citizens who work for government are e-Government engaged and were more likely to adopt e-Government than both private employees and students. This may possible be explained the various government initiatives to network government Ministries, provide internet and e-Government services online.

Education

Results indicate that the mean response for intention to use e-governance services differs across the various levels of education. Hence level of education is a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.011 which is less than the conventional value of 0.05.

Internet experience

Results indicate that the mean response for intention to use e-Government services differ across the various levels of internet experience. Hence level of internet experience is a significant determinant to the intention to use e-Government services. This is supported by a p value of 0.000 which is less than the conventional value of 0.05.

The above results were also supported by regression results which indicated that types of occupations, levels of education and levels of internet experience were significantly related to intention to use e-Government services.

d) To develop a framework for utilization of e-Government services from a citizen perspective in Kenya.

Another objective was to develop a framework for the utilization of e-Government services from a citizen perspective in Kenya. The framework presented in figure 4-7, is a validated framework developed for increasing citizen utilization of e-Government services in Kenya. This framework has eight elements that were found to significantly influence the intention of the public to use e-Government services. Namely, they were awareness, perceived ease of use, ICT skills or Experience, Savings, perceived trust, perceived information quality, satisfaction, and perceived usefulness. In addition, only 3 out of the 5 demographic/personal factors were found to be relevant to the framework.

These were type of occupation, Internet Experience, and education level. The framework can be used as a guide when implementing e-Government services. Some of the elements exhibited stronger significance than others. However, if implemented in totality, it is hoped that the level of e-Government utilization can be improved. The framework is generic and can be used in any developing country

5.2: Recommendations of the study

Various recommendations were fronted on the basis of their implication for theory building or the implications for practice.

5.2.1: Implications for theory

This study validates several constructs found in UTAUT Model formulated by Venkatesh et al (2003). For instance, performance expectancy and effort expectancy relate to perceived usefulness and perceived ease of use which are constructs in the current study. The findings of the current study also modifies the UTAUT model by conceptualizing personal factors as independent variables instead of moderating variables. Therefore, the current study adopts a two factor model consisting of technology acceptance factors and personal factors where it is assumed that both affect the intention to use e-Government services. Furthermore, the study validates the trust model by Lee & Turban(2001) and McKnight *et al.*,(2002). It is also noted that complexity (the reverse of perceived ease of use) is a construct that is validated in this study. Complexity is one of the constructs in Rogers (1983) Diffusion of Innovation (DOI) Theory. This study also validates the constructs perceived ease of use, satisfaction and awareness proposed from research models by Davis (1989) and Colesca and Dobrica (2007) models of user adoption of information technology. These new aspects will hopefully spark more research into the factors that influence utilization of e-Government.

5.2.2: Implications for practice

Several recommendations were made in an effort to enhance the utilization of e-Government services in Kenya. The recommendations were in line with research

findings. The government of Kenya should create awareness about its e-Government services as doing so would lead to an increased intention to use. The government can successfully do so by engaging citizens through attractive presentations in various media such as newspaper, radio television, world wide web and social media such as facebook and twitter. Citizen awareness must be packaged with knowledge about the benefits to gained and of how to use the services. Benefits exhibited could include Convenience, easy navigation, online tracking, lower cost, savings in time and effort. In addition, the government can conduct road shows to enhance awareness. Take for instance, how successful the “ EQUITY NDIO HAPA” was. The same can be said of “ NIKO NA SAFARICOM”. The government can join forces with the media and the private sector to enhance awareness of e-Government services such as online tax payment, e-filing, e-elections, e-registrations among other online services.

The government should enhance trust as doing so would increase the intention to use e-Government services. For instance, the government should seriously address the rampant website hacking by ensuring that websites have firewalls, and the use of robust web hoisting database servers. The government and its department must ensure that it follows the IT security requirements proposed by NIST and COBIT framework for IT governance. The employment of staff that is conversant with COBIT is important because COBIT is an IT governance framework and toolset that allows managers to bridge the gap between control requirements, technical issues and business risks. The government and its departments may enhance perceived ease of use by adopting public private partnerships (PPP) that would reduce the bureaucracy that is associated with the use of government services.

5.3 Conclusion

The study derives constructs from Technology acceptance Model and other models used in related work. In addition, other new dimensions have been introduced as supported by literature. The finding of the study indicate that perceived usefulness, perceived ease of use, awareness, ICT skills and experience, savings, trust, perceived information quality

and satisfaction are significant determinant of citizens' intention to use e-Government services. In addition the study also identifies personal factors (Occupation, education and internet experience) as significant determinants to citizens' utilization of e-Government services. This knowledge of factors determining utilization will enable the government of Kenya to know what citizens want, want to meet citizens' expectation and actively seek to discover what citizens wants and consequently be able to develop citizen centric online services.

5.4: Limitations of the study

The study was not without limitations. The sample size was relatively small. The best results would have been obtained from a larger sample as the population from which the sample was drawn was over 20 million Kenyans who may use government services. In addition, the accuracy of the study findings were limited to the extent that the respondents were honest enough about their responses. Furthermore, the study conceptualization of the term e-Government services is quite broad and vague. It would have been better to identify a particular e-Government service and concentrate on the factors that affect the intention to use it.

5.5 Suggested areas for further research

In line with the limitations, it is therefore suggested that further study on specific e-Government services should therefore be investigated. For instance, online self assessment tax returns, online payment of medical bills at public hospitals, online request for information from sheria house, ministry of lands, and other public offices. Future studies should also take the framework further from intention to use to actual usage.

REFERENCES

1. Ajzen, I. & Fishbein, M. (1972) Attitudes and normative beliefs as factors influencing intentions. *Journal of Personality and Social Psychology*, 21, 1–9.
2. Bélanger, F. & Carter, L (2008). Trust and Risk in e-Government adoption, *Journal of strategic information systems*, Vol 17, no.2 pp 165-176.
3. Bélanger, F. & Hiller, J. (2005) A framework for e-Government: Privacy implications. *Business Process Management Journal*, 11, (in press).
4. Bélanger, F., Hiller, J. & Smith, W. (2002) Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *Journal of Strategic Information Systems*, 11, 245–270.
5. Carter, Lamuria & Belanger (2005). The utilization of e-Government services: Citizen trust, innovation & acceptance factors.
6. Carter, L & Belanger, F. (2005). “The Influence of Peceived Characteristics of Innovation on e-Government Adoption”, *Electronic Journal of e-Government*, Vol 2, No. 1, pp. 11-20.
7. CCK. (2012). Communication Commission of Kenya, Sector statistics report second quarter 2011/2012.
8. Chau, P (1996). An Empirical Assesment of A Modified Technology Acceptance Model. *Journal of Management Information systems*, vol. 13 no.2.
9. Choudrie, J & Dwivedi, Y (2005). A survey of citizens’ awareness and adoption of e-Government initiatives, the ‘Government Gateway’: A united kingdom perspective.
10. Churchill, G.A (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73.
11. Coleman S. (2006) African e-Governance – Opportunities and Challenges, University of Oxford, Oxford University Press.
12. Cooper, D.R and Schindler, P.S (2011). “Business Research Methods”, 11th, edition. McGraw-Hill Publishing, Co. Ltd. New Delhi-India.
13. Creswell, J.W., 2003. *Research Design: Qualitative, Quantitative and Mixed Methods Approach*, Second Edition, Sage Publication, Inc.
14. Cronbach, L. (1970). *Essentials of Psychology Testing*. New York, NY: Harper & Row

15. Davis, F. (1989) Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13, 319–340.
16. Dwivedi, Y & Weerakkody, V (2007). “Examining the factors affecting the adoption of broadband in the Kingdom of Saudi Arabia.” *Electronic Government, An international journal*, (4:1), pp 43-58.
17. e-Government Strategy (2004). : The Strategic Framework, Administrative Structure, Training Requirements and Standardization Framework, Cabinet Office, Office of the President.
18. Gilbert, D, Belestrini, P & Little Boy, D (2004), “ Barriers and Benefits in the Adoption of e-Government”, *International journal of public sector management*, Vol. 17, no. 4, pp 286-301.
19. Hall, D and Hall, I. (1996). *Practical Social Research, Project Work in the Community*. London: Macmillan Press Ltd.
20. Joanna Mcpake, Christine Stephen, Lydia Plowman & Sarah Berch Heyman, (2006). Learning to become e-literate: Young children & new technology, *Journal of Information, Communication, Society: 10th anniversary international symposium*.
21. Kumar, V., Mukerji, B., Irfan, B. and Ajax, P. (2007) Factors for Successful e-Government Adoption: A Conceptual Framework, *The Electronic Journal of e-Government*, 5, 1, 63-77.
22. Kumar, V., Murkej, B, Butt, I & Persaud, A, (2007). “ Factors for successful e-Government Adoption: A conceptual framework” *The Electronic Journal of e_government*, Vol 5. No. 1, pp. 63-76.
23. Lee, M. & Turban, E. (2001) A trust model for internet shopping. *International Journal of Electronic Commerce*, 6, 75–91.
24. McKnight, H. & Cummings, L. (1998) Initial trust formation in new organizational relationships. *Academy of Management Review*, 23, 473–490.
25. McKnight, H., Choudhury, V. & Kacmar, C. (2002) Developing and validating trust measures for e-commerce: an integrative typology. *Information Systems Research*, 13, 334–359.
26. Miyazaki, A. D. and Fernandez, A. (2001). Consumer Perceptions of Privacy and Security Risks for Online Shopping, *Journal of Consumer Affairs*, 35(1), 27-44.

27. Mofleh, S & Wanous, M. (2008). "Understanding Factors Influencing Citizens Adoption of e-Government Services in the Developing World: Jordan as a Case Study. *INFOCOMP – Journal of Computer Science*, Vol. 7, No. 2, 2008, pp. 1-11.
28. Muir, A. and Oppenheim, C. (2002) National Information Policy Developments Worldwide in Electronic Government, *Journal of Information Science*, 28, 3, 173 – 186.
29. Reddick, C (2005), "Citizen Interaction with e-Government: From the street to Servers?" *Government Information Quarterly*, Vol 22, No. 1, pp 1-11.
30. Rogers, E. (1995). *Diffusion of Innovations*. The free press New York USA.
31. Saunders et al, Saunders, M., Lewis, P. and Thornhill, A. (2002). *Research methods for business students* (Third edition). Harlow:Prentice Hall.
32. Silcock, R. (2001). What is e-Government? In *Parliamentary Affairs*, Vol 54 (2001) pp 88-101.
33. Sofia. Elena. Colescal & Liliana. Dobrica (2007). *Adoption and use of e-Government services: the case of Romania*.
34. Soud Almahamid, Arthur C. Mcadams, Taher Al. Kalaldehy & Mo'taz Al-Sa'eed, (2010). "The Relationship between Perceived Usefulness, Perceived Ease of Use, Perceived Information Quality and Intention to Use e-Government", *Journal of Theoretical and Applied Information Technology*, No. 1, pp. 30-44.
35. Sprecher, M. (2000). Racing to e-Government: Using the Internet for citizen service delivery. *Government Finance Review*, 16, 21-22.
36. Straub, D (1989), "Validating Instruments in MIS Research", *MIS Quarterly*, Vol 13, no. 2, pp 146-169.
37. Thorbjornsen, H., Supphellen, M., Nysveen, H., and Pedersen, P. E. (2002) *Building Brand Relationships Online: A Comparison of Two Interactive Applications*. *Journal of Interactive Marketing*, 16(3), 17-34.
38. UN (United Nations) & ASPA (American Society for Public Administration). (2001). *Global survey of e-Government*.
39. United Nations. (2010). *A United Nations e-Government survey 2010, leveraging e-Government at a time of financial and economic crisis*.

40. Venkatesh, V. (2000). Determinants of Perceived Ease of Use: Integrating Control, intrinsic motivation, and emotion into the TAM. *Information Systems Research*, 11 (4), 342-65.
41. Venkatesh, V., Morris M., Davis G. & Davis F. 2003, 'User Acceptance of Information Technology: Toward a Unified View', *MIS Quarterly*, Vol. 27, no. 3, pp. 425-479.
42. Waema, T.M (2007). A conceptual framework for assessing the effects of e-Government on governance, proceedings of the 1st international conference in computer science and ICT, Nairobi, pp 98-103.
43. Warketing, M, Gefan, D, Pavlon, P & Rose, G 2002. Encouraging citizen adoption of e-Government by bulding trust, *Electronic markets*, vol. 12, no. 3, pp 157-162.
44. Zhu, J.J.H. and He, Z. (2002) Perceived Characteristics, Perceived Needs, and Perceived Popularity: Adoption and Use of the Internet in China, *Communication Research*, 29, 4, 466-495.

APPENDICES

APPENDIX I: The study questionnaire

INSTRUCTIONS

Thank you for taking time to complete this questionnaire. This study will investigate Kenyan citizen's utilization of e-Government services.

e-Government is the use of the internet to get government services such as getting Kenya Revenue Authority PIN, National Examination results, progress of your passport application, Police abstract, government Job applications and other government services from any place at anytime, day or night.

For most questions simply tick the number that corresponds to your opinion.

Questionnaire – Framework for Utilization of e-Government Services in Kenya

a. Gender?

Male []
 Female []

b. Age

<20 []
 21-40 []
 41-60 []
 >60 []

c. Occupation

Private sector employee []
 Semi Autonomous Government Agency []
 Government employee []
 Students []
 Unemployed []
 Retiree []

d. Educational level

Primary School []
 High School []
 College or more []

e. Years of Internet Use

No experience []
 <3 years []
 3-10 years []
 >10 years []

PART 2

- Please tick in the appropriate box wherever required.
- Please use the codes to respond:

1-Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree

Awareness

	1	2	3	4	5
I am aware of e-Government services being offered.	[]	[]	[]	[]	[]
e-Government services are available for use	[]	[]	[]	[]	[]

Perceived Ease of Use:

	1	2	3	4	5
How do you perceive the easiness of use of an e-Government service?	[]	[]	[]	[]	[]
How easily navigate around an e-Government website?	[]	[]	[]	[]	[]
Do you receive the expected assistance when you need it?	[]	[]	[]	[]	[]
e-Government provides better access to service in a single interaction.	[]	[]	[]	[]	[]

Perceived Usefulness:

	1	2	3	4	5
Does e-Government service provide the precise information you need?	[]	[]	[]	[]	[]
Usually the e-Government services provide up-to-date information?	[]	[]	[]	[]	[]
Does e-Government websites enable you to actively give your opinion to the government?	[]	[]	[]	[]	[]
Are you able to communicate with government officials through e-Government services?	[]	[]	[]	[]	[]

Saving

	1	2	3	4	5
Are there any savings (time, money) using e-Government services?	[]	[]	[]	[]	[]
By using e-Government services citizens save money	[]	[]	[]	[]	[]
By using e-Government services citizens save time	[]	[]	[]	[]	[]

Perceived Trust

	1	2	3	4	5
Do you feel that the e-Government services providers are trustworthy?	[]	[]	[]	[]	[]
Do you feel confident about your privacy protection when using an e-Government service?	[]	[]	[]	[]	[]
Do you feel your transaction is secure when using an e-Government service?	[]	[]	[]	[]	[]
Do you believe that there could be negative consequences from using e-Government services?	[]	[]	[]	[]	[]

Perceived Information Quality

	1	2	3	4	5
Does e-Government services provide accurate information?	[]	[]	[]	[]	[]
Does e-Government services provide reliable information?	[]	[]	[]	[]	[]
Does e-Government services provide relevant information?	[]	[]	[]	[]	[]
Does e-Government services provide easy-to-understand information?	[]	[]	[]	[]	[]

User Satisfaction

	1	2	3	4	5
Are you satisfied using e-Government services?	[]	[]	[]	[]	[]
Are you satisfied with the content of e-Government services?	[]	[]	[]	[]	[]
Are you satisfied with the interface of e-Government services?	[]	[]	[]	[]	[]
Are you satisfied with the speed of e-Government services?	[]	[]	[]	[]	[]
Are you satisfied with the quality of e-Government services?	[]	[]	[]	[]	[]
Are you satisfied with the security of e-Government services?	[]	[]	[]	[]	[]

IT Skills and Experience

	1	2	3	4	5
I am familiar with a mouse, keyboard and computer.	[]	[]	[]	[]	[]
I can easily download a document from the Internet.	[]	[]	[]	[]	[]
I have no difficulty in sending and receiving emails.	[]	[]	[]	[]	[]
I find it easy to surf on the Internet.	[]	[]	[]	[]	[]

Would you use electronic government service to?

	Yes	No
Gather Information	[]	[]
Send an message for a query?	[]	[]
Submit Personal Information if needed	[]	[]
Pay service charges online	[]	[]

APPENDIX II- Table for determining sample size from a given population

N	S	N	S	N	S
10	10	220	140	1,200	291
15	14	230	144	1,300	297
20	19	240	148	1,400	302
25	24	250	152	1,500	306
30	28	260	155	1,600	310
35	32	270	159	1,700	313
40	36	280	162	1,800	317
45	40	290	165	1,900	320
50	44	300	169	2,000	322
55	48	320	175	2,200	327
60	52	340	181	2,400	331
65	56	360	186	2,600	335
70	59	380	191	2,800	338
75	63	400	196	3,000	341
80	66	420	201	3,500	346
85	70	440	205	4,000	351
90	73	460	210	4,500	354
95	76	480	214	5,000	357
100	80	500	217	6,000	361
110	86	550	226	7,000	364
120	92	600	234	8,000	367
130	97	650	242	9,000	368
140	103	700	248	10,000	370
150	108	750	254	15,000	375
160	113	800	260	20,000	377
170	118	850	265	30,000	379
180	123	900	269	40,000	380
190	127	950	274	50,000	381
200	132	1,000	278	60,000	382
210	136	1,100	285	100,000	384

N is population size, S sample size

Source: Krejcie R.V. and Morgan D. (1970)

APPENDIX III - Reliability coefficient of the pilot data (Cronbach Alpha)

RELIABILITY ANALYSIS - SCALE (ALPHA)

Statistics for Mean Variance Std Dev Variables
 SCALE 82.0000 207.1429 14.3925 34

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
PEOU1	79.8750	203.5536	.1738	.8917
PEOU2	79.6250	190.2679	.6345	.8842
PEOU3	79.6250	199.4107	.5107	.8880
PEOU4	79.7500	201.3571	.1988	.8921
PU1	79.3750	200.8393	.2727	.8905
PU2	78.7500	187.6429	.6499	.8835
PU3	78.8750	199.5536	.2360	.8918
PU4	78.6250	187.4107	.6407	.8836
SAVE1	80.1250	198.1250	.4771	.8878
SAVE2	80.2500	208.5000	-.1175	.8940
SAVE3	80.1250	193.8393	.7225	.8847
PT1	79.6250	192.5536	.6797	.8844
PT2	78.7500	193.6429	.6606	.8850
PT3	79.0000	185.4286	.8272	.8805
PT4	78.6250	225.1250	-.5441	.9096
PIQ1	79.0000	190.8571	.7524	.8832
PIQ2	79.3750	194.2679	.5941	.8857
PIQ3	79.6250	201.9821	.3326	.8898
PIQ4	79.8750	197.8393	.4933	.8876
US1	78.8750	182.4107	.7715	.8803
US2	78.8750	193.2679	.7556	.8842
US3	79.2500	192.5000	.5634	.8857
US4	78.0000	198.5714	.2957	.8905
US5	78.8750	215.8393	-.3831	.9010
US6	79.0000	189.4286	.5631	.8852
EXP1	80.3750	176.2679	.7729	.8792
EXP2	80.3750	176.2679	.7729	.8792
EXP3	80.3750	176.2679	.7729	.8792
EXP4	80.3750	176.2679	.7729	.8792
AWARE1	80.8750	206.6964	.0316	.8924
AWARE2	80.7500	203.9286	.2269	.8909
IU1	80.8750	199.8393	.7181	.8876
IU2	81.0000	207.1429	.0000	.8920
IU3	79.2500	209.6429	-.1094	.9046
IU4	79.2500	209.6429	-.1094	.9046

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients

N of Cases = 8.0 N of Items = 34

Alpha = .8912