An E-government Readiness Assessment Framework for Uganda.
A case study of Ugandan Ministries

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Abstract

E-government is a global trend which has to be embraced by every Country if is to survive economically. This can be achieved through its citizen being ready to adopt ICT. This study was conducted in Uganda because it is one of the Mushrooming Countries with numerous challenges concerning the ICT adoption which has resulted into a decline in the level of e-readiness according to the current UN world ranking assessment. The objective of this study was to solicit requirements for measuring the level of e-government readiness in Uganda and specifically in the Ugandan selected Ministries. Methodologically, the study used quantitative data on 90 respondents who were purposively selected since they were the technocrats with information regarding e-government from the three Ministries of ICT and guidance, Finance planning and economic development and Ministry of Works and transport using a structured questionnaire. Out of the ninety questionnaires which were distributed to the respective staff in the above scope, only forty four questionnaires were correctly filled and returned, also interview guide was used for some respondents. Data was analysed using regression analysis, being one of the statistical tools appropriate for the given data. Findings revealed that the study contributes to existing theoretical and empirical literature by adding an E-government Readiness Assessment framework for assessing the e-readiness in the Ugandan Ministries. Additional six parameters (socio-demographic Information, e-commerce, e-government enablers, ICT Awareness, ICT policies and regulations) were added as an extension to Azab and others, integrated e-government framework for assessing the e-readiness of government. Reason being that it integrates seven dimensions for evaluating organizational e-government readiness including e-government strategy, user access, e-government programs, portal architecture, business processes, ICT infrastructure, and human resources and was in line with this study. This study offers useful implications to e-government decision makers, ICT managers, ICT specialists and suppliers in the public sector by providing insights geared towards improving business decision-making, and expanding competitive advantage from effective e-government services. It equips key stakeholders with a framework that could be applied in performing regular assessment of e-government readiness to identify and provide suitable solutions. Ministries/organizations assigned responsibility for assessing e-government readiness will refer to this framework as a useful reserve during the e-government project implementation. The proposed framework for assessing e-government ICT readiness will decrease difficulties associated with ineffective e-government strategies in the public sector through understanding the important e-government dimensions highlighted in the proposed framework.

Key words: E-government, E-readiness assessment, Micro and Macro levels and Adoption.

Introduction

The world has witnessed the birth of a new E-government era which is currently sweeping through all corners of the world (Ifinedo, 2005), this has become a global phenomenon which has seen both industrialized and to lesser extent developing countries initiate E-Government strategies and projects

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(Schuppan 2009). E-Government in developing countries is seen as a means of strengthening the performance of government and public administration for economic and social development, and would be a solution in sub-Saharan Africa, where public administration is characterized by inefficiency, limited capacity, and poorly-trained personnel (Schuppan 2009). So far several definitions of E-government have been forward. According to Asiegbu (2009), E-government is the use of information and communication technologies (ICTs) by government to serve its citizens in a proficient, gainful and convenient manner. Kitaw (2006) on the other hand referred e-government as ''Internet-based public administration", were government uses the Internet to improve access to, and delivery of government services. Like Kitaw (2006), ITU (2008) also attribute to e-Government to the use of ICTs, particularly the internet by government to serve the citizens. Similar to Asiegbu's definition, the World Bank (2002) defines e-government as "the use of Information Communication Technologies such as wide area networks, the internet, and mobile computing by government agencies to transform relations with citizens, businesses, and other arms of government. Ndou (2004) has a slightly different view, she describes E-government as the eventual way to enhance access to and delivery of government services to benefit all citizens.

All definitions discussed here- apart from that of Ndou (2004) suggest that e-government has an element of ICT being used to by government to serve citizens. ITU (2008) agrees to this and states that E-Government relies on ICTs to automate the processes to serve citizens, businesses and governments. Most developing countries have not stood aside to watch as the rest of the world integrates ICTs in to their respective governments, a number of them including Uganda have integrated ICTs in the daily running of their respective ministries and departments (Ifinedo, 2005). However, ITU (2008) observes that in developing countries, there is still a great challenge in figuring out how to effectively harness the power of ICT to raise the ability of governments to govern, and this has coursed massive failure of e-government projects in developing countries. UNDESA (2003a) actually puts it between 60-80% e-government failure rates. According to Ifinedo (2005), one of the factors contributing to this failure is the low level of e-readiness. Essentially, e-readiness is used to capture how a country fares in terms of creating, diffusing, adopting and using the various components of a networked economy (Ifinedo, 2005). Although many researchers like (Odedra et al., 1993; Molla 2000; WSIS 2004; Ifinedo 2005) have advanced various reasons why e-government in African and other developing countries fail and why these countries still lag behind in this revolution, the least mentioned is e-readiness. According to Ifinedo (2005), a country's "e-readiness" is a measure of its e-business environment, a collection of factors that indicate how amenable a market is to Internet-based opportunities. Increasingly, it is also about how individuals and businesses consume digital goods and services. E-readiness can simply be defined as the ability for a region to benefit from information and communications technology (Molla, 2000).

Over the years, a number of e-readiness assessment tools, models and frameworks have been developed by various individuals and organizations using a several indices and models (Nabavi, 2009; Vaez & Sattary, 2009). Some of these important organizations working in this field are those of Economic Co-operation and Development (OECD), World Information Technology and Services Alliance (WITSA) and Asian Pacific Economic Corporation (APEC) (OCED & WITSA, 1999; APEC, 2000; Nabavi, 2009). On the surface, most models emphasize on producing indices and a general set of requirements like ICT access, ICT national policies, national ICT backbone and many others. However, e-readiness needs of specific sectors, departments and business organizations in many developing countries remain largely unknown (Molla, 2004; Olatokun & Opesade, 2008). This study therefore aims at identifying e-readiness needs/requirements at micro level in Ugandan Ministries and developing a framework for measuring the quality of readiness to use ICTs.

Literature Review
Government Concept
It is worth noting that there is absence of amalgamating definition of E-government (Bhatnagar, 2004). According to the World Bank (2011), e-Government is referred to as the use by government agencies of information technologies that have the ability to transform relations with citizens, businesses, and other

arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. Similarly, Alshehri and Drew (2010) defined E-Government as a conduit through which the state interacts with its citizens (eCitizens and eServices), advances public service delivery and processes (eAdministration), and establishes outside connections (eSociety). The connection in E-government results in to a win-win relationship thus making the work of the government easier (Alshehri & Drew, 2010). Although there are conflicting reports, Koontze (2003) traces the origin of e-government to Britain- when in 1957, the British government directed the technical support unit of the telecommunication service to evaluate and give advice to government on the use of computers in government offices. Since then, ICTs haves offered governments in both developed and developing countries an effective resource to serve citizens and other stakeholders through electronic-government (e-Government) strategies in very exciting ways (ITU, 2008). However, the presently unpleasing returns on investment from e-Government highlights the need for defining key procedures of success, most notably increased feasibility studies prior to e-Government adoption-through e-readiness assessment (UNDESA, 2003a; Collinge, 2003; Stowers, 2004).

Micro and Macro Levels: The Micro level is the lower (Organisational / individual) level of e-readiness adoption and in this study, it implied the Ministry level where the focus was on employees' e-readiness), while Macro level in this study refers to e-readiness adoption at national or global level

E-readiness Concept
Lou (2010) defined organizational e-readiness as *"a mea-sure to which an organization or business may be ready, prepared or willing to adopt, use and benefits arise from the digital economy such as e-procurement.* And assessment of e-readiness depends on assessed subjects (country, industry, or an enterprise), used technology, and the goal of implementation project. The e-readiness concept was originated by the intent to provide a unified framework to evaluate the breadth and depth of the digital divide between more and less developed or developing countries during the late part of 1990's (Mutulaa & van Brakel, 2006: 212).

The first efforts in defining e-readiness were undertaken in 1998 by the Computer Systems Policy Project (CSPP) when it developed the first e-readiness assessment tool known as Readiness Guide for Living in the Networked World. It defined e-readiness with respect to a community that had high-speed access in a competitive market; with constant access and application of ITs in schools, government offices, businesses, healthcare facilities and homes; user privacy and online security; and government policies which are favorable to promote connectedness and use of the network (CSPP, 1998).

E-Readiness refers to the ability to use information and communication technologies (ICT) to develop one's economy and to foster one's welfare (Bui et al., 2003). According to Nabavi (2009), the concept of e-readiness was first developed to provide a unified framework to evaluate the breadth and depth of the digital divide between more and less developed or developing countries in the late 1990s. The very first step in defining e-readiness was undertaken in 1998 by the Computer Tools Policy Project (CSPP) when it designed and developed the first e-readiness assessment tool known as Readiness Guide for Living in the Networked World (Nabavi, 2009). However, since then, many existing e-readiness frameworks have been developed -benchmarking indices at both macro and global or universal level, for instance those calculated by the EU, Economist Intelligence Unit UNPAN, World Bank, and Economist Intelligence Unit (Bui et al., 2003).

Goal and objectives of E-readiness
According to Bridges (2005), in compiling data on e-readiness assessments, the goal is not to judge one assessment over another, or to weaken the value of work that has already been prepared. Rather, it is to offer a resource to policy-makers and others who fancy using e-readiness assessment results to prepare for the integration of ICT in communities and to organizations that are considering new assessments. According to Mani (2002), a country's e-readiness must be evaluated in order for it to define policies that

will allow it to insert itself more effectively into the knowledge-based economy (Mani, 2002). E-readiness assessments depict a complicated patchwork of varying levels of ICT access, usage, and applications among countries and peoples. The various e-readiness assessments measure a wide range of factors from ICT policies to everyday ICT usage. An e-readiness assessment, when properly applied in a larger process of evaluation, is a first step towards converting good intentions into planned actions that bring real changes to people's lives. E-readiness assessments are meant to guide development efforts by providing benchmarks for comparison and gauging progress, determining the current situation in order to plan for the future and advocate specific changes. E-readiness assessments framework can also be a vital tool for judging the impact of ICT, to replace wild claims and anecdotal evidence about the role of ICT in development with concrete data for comparison (Renu & Sameer, 2002).

A need for E-government E-Readiness Assessment
E-readiness assessment endeavors to gauge how ready a society or economy is to benefit from information technology and electronic commerce and is utilised to measure a country's ability to take advantage of the internet as an engine of economic growth and human development (bridges.org, 2005). E-readiness assessment frameworks are meant to guide development efforts by providing benchmarks for comparison and gauging progress (Purcell and Toland, 2004). It is worth noting that there are assortment of reasons why there is increased impulsion or momentum among various countries in assessing their e-readiness status. Countries are striving to become inclusive global knowledge societies where all persons without distinction are empowered to create, receive, share and utilize information and knowledge for their economic, social, cultural and political development (Consulting and Audit Canada, 2004, p. 1)

E-readiness assessment aid countries to set, measure and achieve realistic goals for an information society, information-based economy, or e-government and it is vital to launch and conduct an e-readiness assessment such that the results can be leveraged to catalyze action, improve universal competitiveness, and use inadequate resources wisely (Docktor, 2002). Furthermore, the United Nations Public Administration Network (UNPAN) established an e-Government Training Module (United Nations Online Network in Public Administration and Finance, 2007) and the module elucidates the importance of that e-government readiness assessment as envisaged below: E-government readiness assessment framework is seen as a valuable tool that can support governments in understanding the strategies and action plans of e-government. Similar to that, it is a useful exercise to raise awareness, recognize the opportunities and possible threats, and devise a plan for future prospects. Readiness assessments are most handy when they have been tailored to fit the national context of a country and accepted as part of evaluation and benchmarking. More so, the e-readiness assessments offer a portrayal of the environment in which e-government development is ought to take place and proves the feasibility of the application in question. The e-readiness assessments intend to establish the fragile or feeble areas in e-government so as to set counteractive measures in place to guarantee the success thereof. These assessments also aim, where necessary, to advise against the implementation of e-government approaches in a specific public administration, to update e-government strategies and action plans, and also provide a monitoring and

Indicators of E-government Readiness
Although a number of scholars and organizations have forward important e-government readiness indicators, according to Docktor (2002), the most significant indicators that cut a cross included the following:1) Infrastructure: deploying a core ICT network infrastructure, achieving relative ubiquity of access, and investing in strategically-focused capacity to support high development priorities. 2) Human Capacity: building a critical mass of knowledge workers, increasing technical skills among users and strengthening local entrepreneurial and managerial capabilities. 3) Policy: supporting a transparent and inclusive policy process, promoting fair and open competition, and strengthening institutional capacity to implement and enforce policies.

E-Government Readiness in Developing Countries
According to (Azab,2009), analysis of the approach to IT policy taken by developing countries shows that IT can play a significant role as part of an overall national strategy for development. In this respect, countries have pursued diverse strategies: some have focused on developing ICT as an economic sector either to boost exports (Costa Rica & Taiwan) or to build domestic capacity (Brazil, India & Korea) while others are pursuing strategies which seek to use IT as an enabler of a wider socio-economic development process (Molla, 2004). Countries which use IT as an enabler may be further subdivided into those which have focused primarily on repositioning the country's economy to secure competitive advantage in the global economy (Malaysia, Trinidad & Tobago) and those which explicitly focus on IT in pursuit of development goals such as those set forth in the UN Millennium Summit (Estonia and South Africa) (Vaez & Sattary, 2009).There is already ample evidence that a focused, micro-level application of IT can contribute to individual development goals, including health, education, economic opportunity, empowerment and participation, and protection of the environment. Even more importantly, emerging evidence from country case studies suggests that IT can play a more profound and far-reaching role in development than simply through interventions focused on specific development objectives. Some studies suggests that those countries that have employed IT as an enabler of development goals, rather than just to position their economies in the global market, increase exports or build national capacity can indeed achieve higher levels of development (Vaez & Sattary, 2009). In contrast, those countries that have had a single-minded focus on economic growth, and as such failed to integrate development imperatives into their national ICT visions, have ended up with narrowly defined IT initiatives that do not fully address development goals. The findings, at both the micro(organisational) and Macro (national) level, highlight the need for a framework that can help guide stakeholders in developing and implementing strategies which take advantage of the potential of IT to accelerate social and economic development (Azab, 2009).

General over-view of E-government Readiness Status in Uganda
Uganda's population is estimated at 32 million (CIA, 2009). According to the (United Nations, 2008), Uganda's literacy rate is 66.8 percent, of which only about 6.4 percent of Ugandans are Internet users (Hisali, 2007). Uganda scored of 0.3133 in an e-government readiness index which made it to be positioned as 133th (the average for 192 countries is 0.4514) and the index examines the e-government development stage, telecommunication infrastructure, and human capital in each country (United Nations, 2008).The National Information Technology Authority –Uganda (NITA-U, 2012) released a draft of the e-government Readiness Survey compiled by the consultant, Ernst & Young. According to the survey 70% of businesses and citizens regard e-Banking as a high priority service, it also says, on average, 43 out of every 100 respondents who participated in the survey had an understanding of what e-Government meant, the survey also found out 63% of government institutions indicated that they provide services online, with 71% of them allowing end users to download and print online forms; 69% allowing submission of online feedback; 67% allowing the viewing, downloading and printing of tender.

Infinedo (2005), in his study on e-readiness assessments of nine African countries including Uganda, argued that these tools were modestly descriptive since they identified problem areas but did not give a framework on how to proceed and deal with the situation at hand, hence concluding that e-readiness assessment may not be of much use. Altman (2002) whose research based on e-government initiatives in Latin America seems to agree that there is no direct link between a nation's e-readiness and its level of ICT development. Creating an e-ready environment did not enable firms to successfully partake in electronic commerce (Pare, 2003)

E-Government Adoption in Less Developed Countries
Yonazi (2010), suggested that, less developed countries entail a huddle of nations which call for equitable and sustainable social and economic growth. On the contrary, E-Government adoption is regarded as the motive by citizens to participate in e-government to receive information and request services from the government (Warkentin et al., 2002; Carter and Belanger 2005; Gilbert et al., 2004). According to World Bank (2012), there are currently 48 least-developed countries which the World Trade Organization

considers as least-developed countries which have been designated by the United Nations on the UN list, 31 of which to date have become World Trade Organization members and Uganda is listed among with low income economies. According to Ndou (2004), through e-Government, developing countries can be enabled to overcome their social-economic challenges. According to Bhatnagar (2004), developing countries are increasingly trying to put e-Government on their economic agenda because of the apparent opportunities it promises for example providing opportunities for rapid economic development, addressing key barriers and challenges with regard to entering global economy and for future growth potential and facilitates improvements in productive capacity.

It is worth noting that the Adoption rate of e-government has increased in most countries, however, this rate varies from country to country with less developed countries lagging behind in e-government adoption which is contrary to most developed countries (United Nations, 2008). Uganda is one of the countries at the bottom among the developing countries at number one hundred and thirty three (133) out of one hundred eighty two (182) according to the United Nations' Global e-Government Readiness rankings (United Nations, 2008). Soumitra and Mia (2011) stated that Uganda is ranked number 107 in the Networked Readiness Index 2010–2011.

Models for e-Government Adoption
Bwalya & Healy e-Government Adoption Model
It was proposed by Bwalya and Healy, (2010) in the SADC region includes other factors - language of content (both English and local language), perceived risks and local culture, ICT infrastructure and lower costs, data privacy, a dedicated and appropriate user support mechanism, appropriate legal, regulatory and institutional frameworks in addition to the variables in TAM as illustrated in figure below: It is worth noting that all these factors in figure below, are seen to influence e-Government adoption and continuance in the use of e-Government. However, some of the factors that affect consumers like e-readiness, ICT awareness, trust, attitudes, education, accessibility, training, are ignored.

Figure 1: The Conceptual adoption model *(Bwalya & Healy, 2009)*
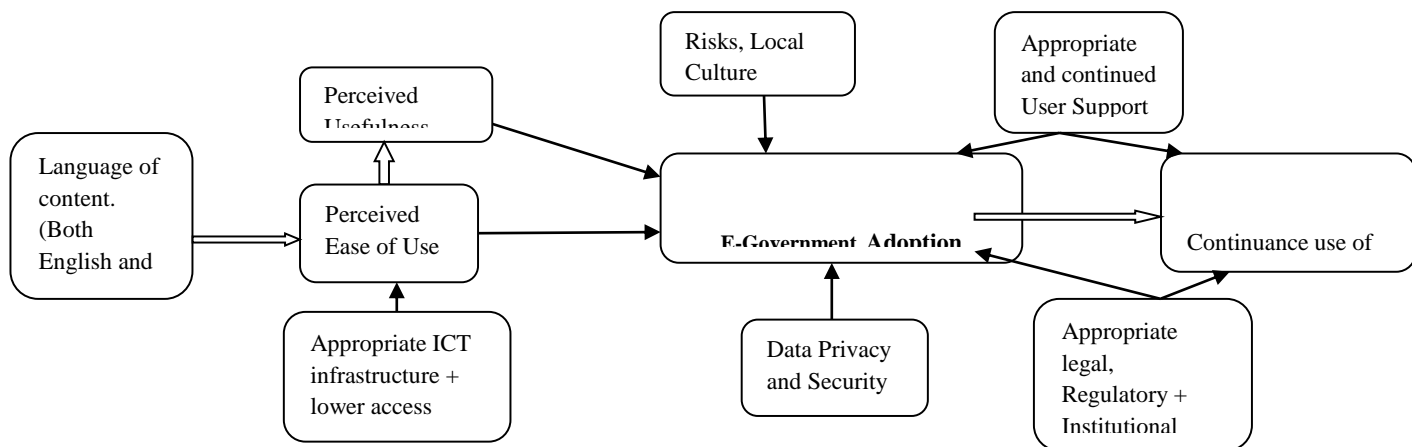
Sarkar Model for Successful e-Government Adoption

A model for successful e-government adoption is developed by Sarkar (2007). It addresses the policy makers, advisory committee, consultants, decision makers, development agency groups, implementing agencies or groups, stakeholders and progress monitoring committees as illustrated in figure 4 below:

Figure 2: envisages a model for successful e-government adoption.
*Adopted from: (Sarkar, 2007)*
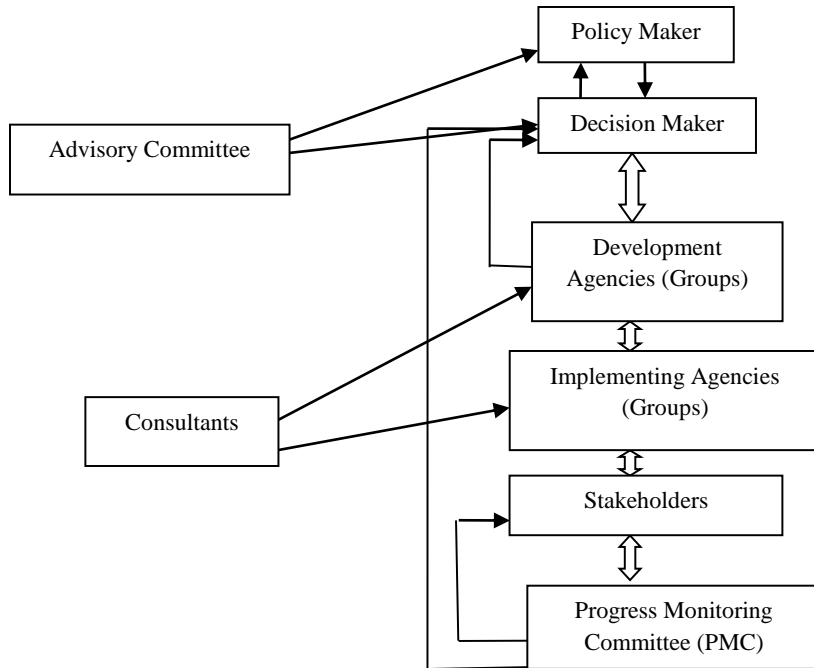
This model addressed the supply-side factors of e-government adoption which is enforced from the government but does not consider the demand-side factors of e-government adoption by looking at the consumer-based factors that include trust, attitudes, education, awareness, accessibility, training, user support as being core in e-government adoption.

Sahu E-governance Acceptance Model
Sahu et al. (2004) developed a model as an expansion of Technology Acceptance Model. In addition to TAM's Perceived Use and Perceived Ease Of Use, E-governance Acceptance Model incorporated top leadership involvement, policy and regulation and perceived strength of control, which influence attitude towards using creating behavior intention to use and e-governance acceptance as envisaged in the Figure below:

Figure 3: E-governance Acceptance Model (Sahu et al., 2004)
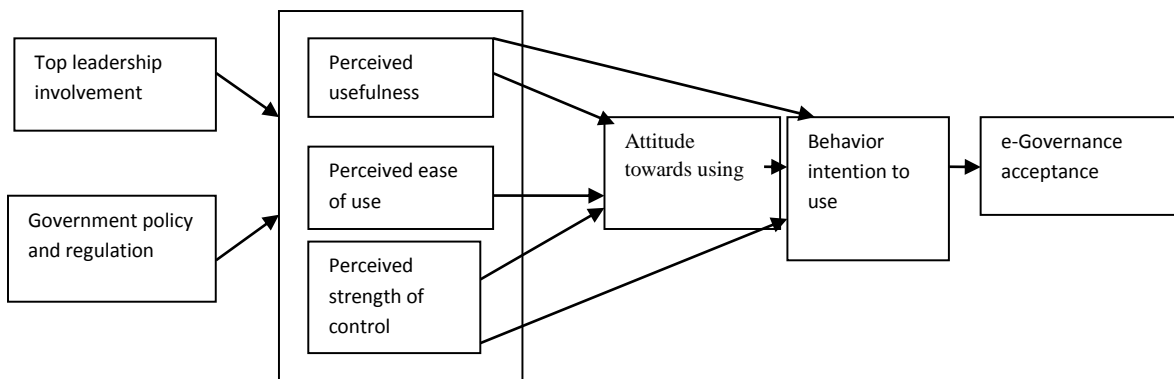
Methodology
Interview Techniques (face-to-face)
Interview techniques are useful for identifying possible areas for more detailed analysis. They are easy to conduct since they are directly posed to the respondent. The researchers used this method because it allowed busy respondents who could not cope up with questionnaires to give their direct views at their convenient hours, more so, the researchers were able to adapt questions as necessary, classify issues and ensure that the responses are properly mastered through rephrasing and detecting non-verbal clues from respondents. That is to say, they were able to notice and record a lot of information from the respondent's social and physical. These included the Minister of ICT, ICT Managers, Chief Information Officer and other key IT personnel identified in the ICT Ministry, Ministry of Finance and Ministry of works.

Where possible, telephone interviews conducted to get accurate data in case some key people are out of the country. Structured interviews were also be used to get knowledge before and after proposing the framework. It was of merit in a sense that it helped the researchers to get detailed answers to the unanswered questions from primary sources. This method helped in achieving study objective. Semi-structured interviews were used because; the technique allowed the interviewee to shape the flow of information and at the same time allowed the interviewer to control the discussion where it got away from the key subject matter. Dencumble (1998) in Wilkinson and Birmingham (2003) says 'Interviews involve a set of assumptions and understandings about the situation which are not normally associated with a casual conversation. In addition 'interviews give the researcher more insight into the meaning and significant of what is happening', Wilkinson and Birmingham (2003, p. 44). The researchers also conducted exploratory interviewers with experts in e-government establishment in Uganda. This study performed between fourty and twenty interviews from the population that consists of e-Government experts in e-government establishment from both public and Private Sector in Uganda.

Questionnaires
These were utilized in collecting data and they were advantageous in that; the responses were gathered in a standardized way, they were more objective than interviews and relatively quick technique during data collection. Regression analysis was used in data analysis due to its various merits.

Discussion and Interpretation of Findings
Socio-demographic information
In this study, data from the respondents on socio-demographic information conducted was analyzed as envisaged in the table below:

Table 1: *Socio-demographic information*

|		**Frequency**	**Percent**
Age	Less than 20	2	4.5%
	20-30	32	72.7%
	31-40	7	15.9%
	Above 40	3	6.8%
Level of education	Primary school	2	4.5%
	Secondary school	13	29.5%
	Bachelor's degree	18	40.9%
	Master's degree	8	18.2%
	PhD	1	2.3%
	Others	2	4.5%
Income level	<200,000	1	4.0%
	200,000-500,000	3	12.0%
	500,000-900,000	10	40.0%
	>900,000	11	44.0%

Showing Socio-demographic information
Table 1 above indicates that the highest frequency of respondents was 32 with a percentage of 72.7%, aged between 20-30 years old, most of whom had bachelor's degree with 40.9% and 2.3% representing the minority with PhD degree. Similarly, the majority income level ranged 500,000-900,000shillings. This implies that the above respondents whose age bracket was 20-30 years with at least a bachelor's degree were ready for e-government adoption and used part of their income which ranged from 500,000-900,000shillings to acquire and use computers and other internet technologies hence being ready to adopt e-government. All in all, 72.7% of the respondents who were the majority had age bracket of 20-30 years and 93% of 72.7% of the respondents were willing to use e-government services hence showing that Age, education level and income are one of the major determinants in assessing the level of e-government readiness in the Ministries that were under study.

Age of Respondents
Data from the respondents on age was analyzed and findings revealed that 72.7% of the respondents who were the majority had age bracket of 20-30 years and 93% of 72.7% of the respondents were willing to use e-government services hence showing that Age is one of the major determinants in assessing the level of e-government readiness in the Ministries that were under study.
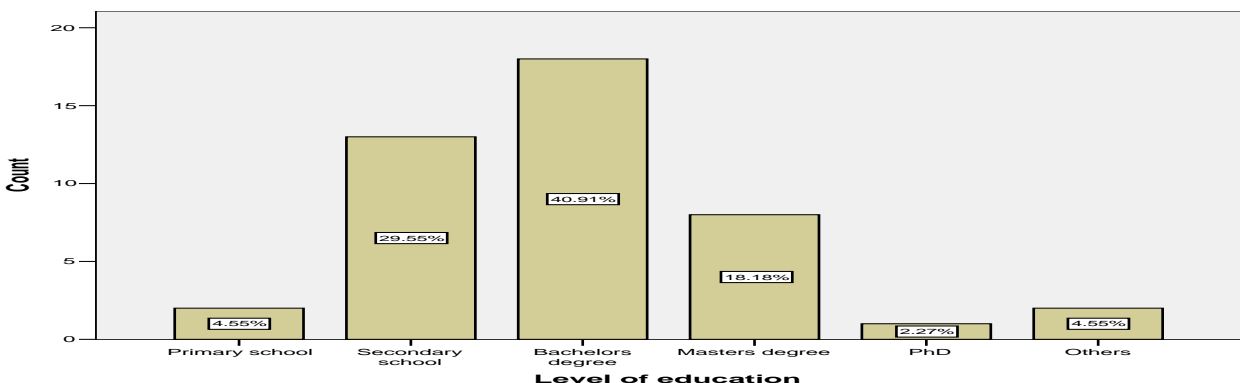
Figure 4: Showing a graph representing age of the respondents in the three Ministries.
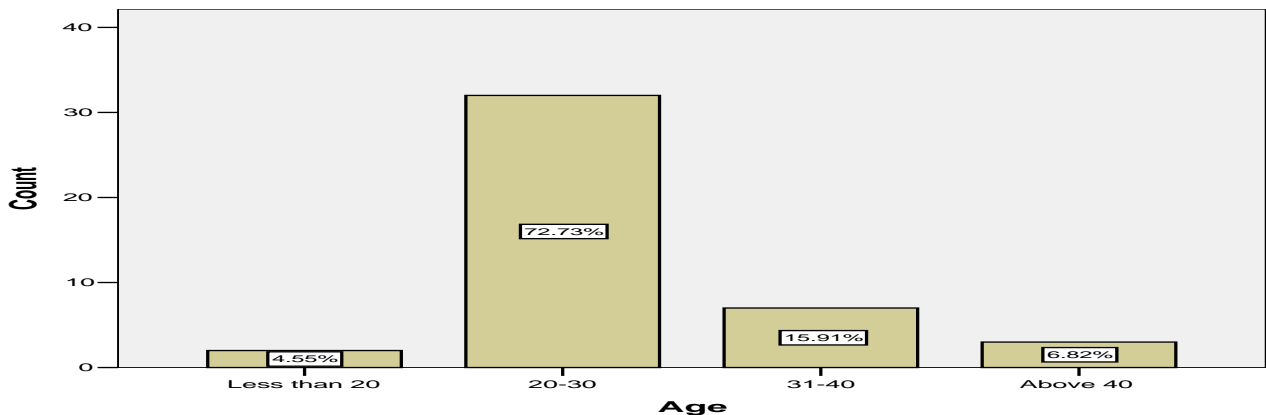
Education Level
Data from the respondents on education level conducted was as envisaged in the figure below:

Figure 5: A graph representing the level of education of the respondents in the three Ministries under study.

Findings above reveal that the Primary School respondents had the lowest education category (4.5%), and some 29.5% had studied up to Secondary School. Those with Bachelor's Degree and Masters Degrees comprised 40.9% and 18.2% respectively and those with other qualifications comprised 4.5% of the sample. All in all, 61.98% (40.9% + 18.18%+ 2.27%) of the respondents who had degrees and above, at least had one of the following; computer, Internet, e-commerce and e-government experiences and 98% of 61.98% of the respondents, were willing to use e-government services hence showing that Education Level is a major determinant in assessing the level of e-readiness in the Ministries that were under study.

Income Level
Data concerning Citizen's views about their income level was analyzed and the results indicate that most respondents (44%) earned more than 900,000shs income, followed by (40%) ranging in between 500, 000-900, 000 shs, (12%) earned between 200000-500000shs and the remaining percentage (4%) earned less than 200000shs income. This was related to the study objectives in that it enabled the researcher and her team to establish the relationship between the income level and the rate of citizen adoption to e-government. It was found that for a citizen (employee) to be able to surf on the Internet, buy a product on line, access e-government services online, he/she had to have enough income to acquire internet, purchase a computer, hence making the e-government readiness dependent on the level of income of a Ugandan citizen. The more income a citizen earns, the more chances and willingness he/she could afford to access personal computers, mobile Internet (modem) to be able to communicate online any time, conduct e-commerce hence being ready to adopt e-government. All in all, 44% of the respondents who were the majority earned more than 900,000shs income and 95% of 44% of the respondents were willing to use e-government services hence showing that Income level is one of the major determinants in assessing the level of e-government readiness in the Ministries that were under study.

Figure 6: Showing the Income Level of the respondents in the three Ministries.
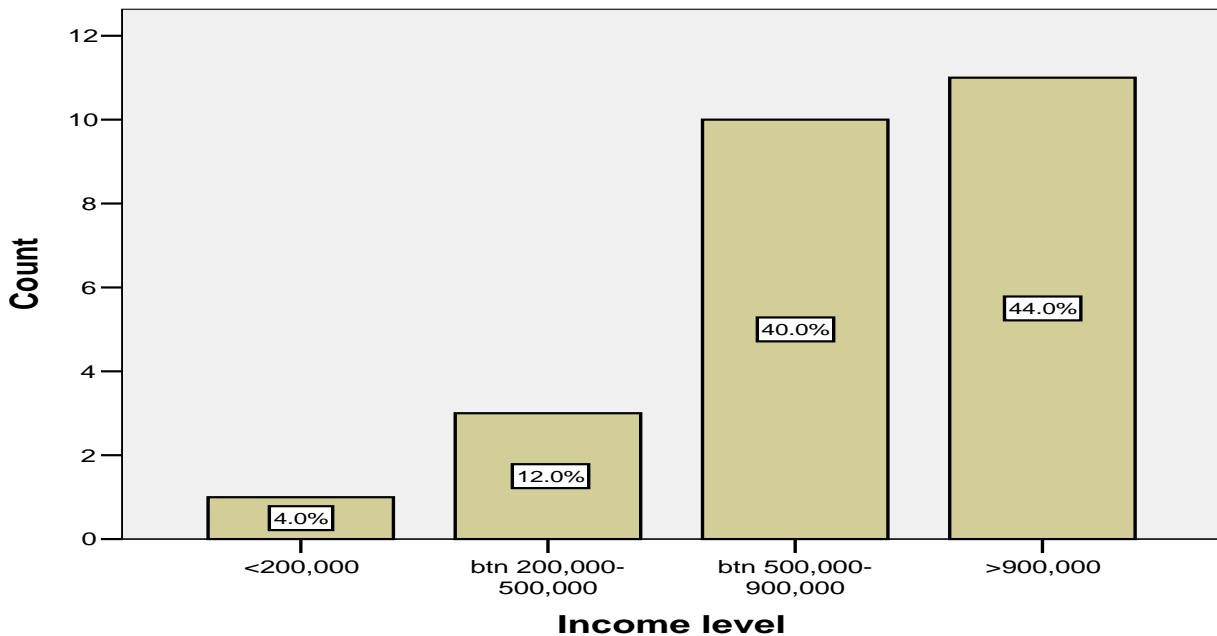
Computer Experience
Respondents' views on Computer experience for example Ever worked on a computer, Place of computer usage, Frequency of computer usage daily, Main use of computer daily were analyzed. Table 2 envisages both frequencies and percentages of the responses to the attributes which were suggested on Computer experience by the citizen of Uganda.

Table 2: Showing Computer Experience

		Frequency	**Percent**
Ever worked on a computer	Yes	39	88.6%
	No	5	11.4%
Place of computer usage	Home	4	9.8%
	Work	10	24.4%
	School	9	22.0%
	Home- work- school	13	31.7%
	Home - work	4	9.8%
	Work- school	1	2.4%
Frequency of computer usage daily	<1 hr	5	14.3%
	1-3 hrs	13	37.1%
	4-10 hrs	10	28.6%
	>10 hrs	7	20.0%
Main use of computer daily	internet -email-browser-	24	60.0%
	office application -word processor - spreadsheets-database	5	12.5%
	games and entertainment	3	7.5%
	others	8	20.0%

The findings from the above table indicate that most people (88.6%) use the computer daily, between 4 – 10 hours (43.2%) and only 11.4% use the computer for less than 1 hour. In addition, 15.9% of the respondents use the computer for over 10 hours daily. The major use of a computer daily was for surfing Internet -email-browsing (60.0%) like news reading, find new products and others (20.0%), Ms Applications (12.5%) and lastly for games and entertainment (7.5%). From the above analysis, most citizens who had high frequencies on computer experience or computer literacy were ready to adopt e-government. All in all, 84.1% of the respondents used the computer daily and 94% of 84.1% of the respondents were willing to use e-government services hence showing that compute experience is a major determinant in assessing the level of e-government readiness in the Ministries that were under study.

Internet experience
Respondents views on Internet experience for example internet usage, frequency of Internet usage, venue of Internet usage, monthly expenditure on Internet usage, main use of Internet were analysed as shown in the table below.

Table 3: Showing Internet experience

		Frequency	**Percent**
Have you ever used the internet	Yes	37	94.9%
	No	2	5.1%
Frequency of internet usage daily	<1 hour	11	30.6%
	1-3 hrs	9	25.0%
	3-6 hrs	9	25.0%
	>6 hrs	7	19.4%
Where internet is mainly used	Home	5	13.5%
	Work	10	27.0%
	Internet Café	7	18.9%

	School	6	16.2%
	Home and work	1	2.7%
	Others	8	21.6%
Estimation of monthly expenditure on internet	<2,000	10	27.0%
	2,000-5,000	7	18.9%
	5,000-10,000	5	13.5%
	>10,000	15	40.5%
Main use of internet	Email	5	13.5%
	information and knowledge search	30	81.1%
	others specify	2	5.4%

The results in Table 3 reveal that majority (94.9%) of the respondents had ever used the Internet and informed the researcher that they were ready to adopt e-government as per the survey and only 5.1% had never hence not ready for e-government adoption and these were the minority. On frequency of Internet usage daily, 30.6% used less than an hour, 25.0% used 1-3 hours, and 25.0% used 3-6hours, 19.4% used less than 6 hours daily. All in all, 94.9% of the respondents who were the majority had ever used the Internet and 99% of 94.9% of the respondents were willing to use e-government services hence showing that Internet Experience and its frequency of Internet usage daily are among the major determinants in assessing the level of e-government readiness in the Ministries that were under study.

Frequency of Internet usage daily
Data from the field study on frequency of Internet usage in terms of hours spent was collected and analyzed. Findings reveal that the highest percentage (37.14%) of respondents shows that they used Internet daily for 1-3 hours, followed by 28.57% using 4-10 hours daily, 20% used less than 10 hours and the rest used less than 1 hour daily to get Internet services. It should be observed that citizens/ employees with the highest percentage (37.14%) of internet usage had more chances of being ready to adopt e-government and vice versa. All in all, 37.14%) of the respondents who were the majority used Internet daily for 1-3 hours and 92% of 37.14%) of the respondents were willing to use e-government services hence showing that Internet usage daily for a period of 1-3 hours are among the major determinants in assessing the level of e-government readiness in the Ministries that were under study. This is related to the study objective one in that it assisted in determining the requirements needed for e-government readiness needs in Uganda. This calls for the Ugandan government to increase the campaign of Internet Usage daily for 1-3 hours daily amongst its citizens and lower the Internet costs, increase band width such that it becomes much easier not only to access 24/7 a week but also to afford it.

Figure 7: Showing Frequency of Internet usage daily.
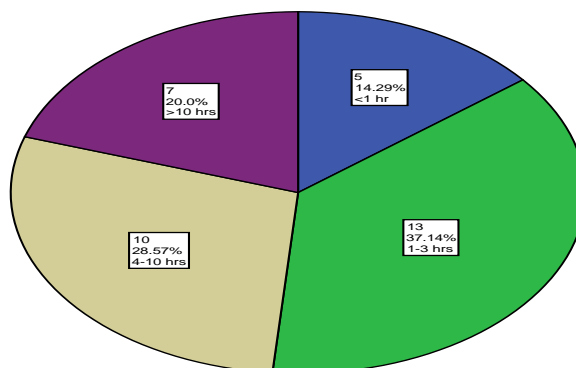
Main Place of Internet usage

The data from this study conducted about the place of Internet usage indicated was analyzed and results indicate that most users, use the Internet mainly in at work (27%), followed by Internet café (18.92%), 13.6% at school / colleges/Universities, while 2.3% at both home and work and 18.2% used it in other places other than the above for example mobile internet while traveling in a car, aero-plane hence showing indicators of being e-ready to adopt government services online. All in all, 27% of the respondents who were the majority used Internet mainly at work and 97% of 27% of the respondents were willing to use e-government services hence showing that place of Internet usage is among the major determinants in assessing the level of e-government readiness in the Ministries that were under study.

Figure 8: Showing places of Internet Usage.
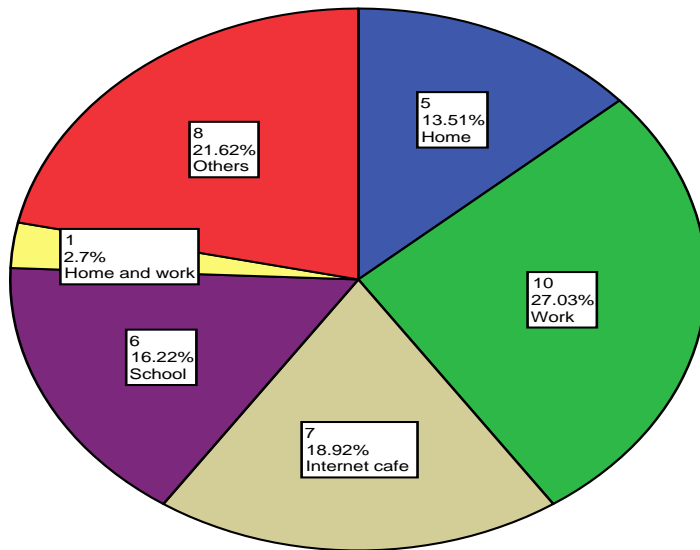
**Estimation of monthly expenditure on Internet Usage.**

Figure 9: showing estimation of monthly expenditure on Internet Usage
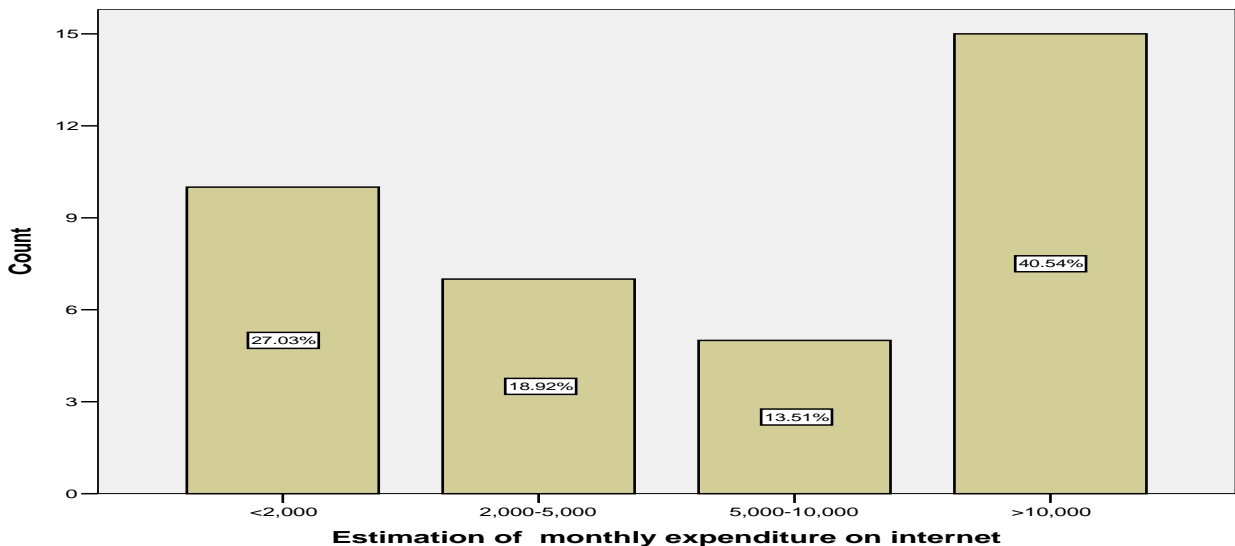
E-Commerce experience
In this study, Respondents were asked to ascertain whether they had e– commerce experience. Respondents' questions were such that 1 represents Yes, 2 – No .The findings indicate that the majority respondents had never shopped on the Internet (No = 71.9%), most respondents had ever used the internet to find information about services and products (74.9%). The majority of the respondents had requested further information about certain products or service medium like internet (68.8%) and only 31.3% had not done it. Most of the respondents had not paid utilities' bills using any electronic medium like the internet (73.3%) and a few had done it with (26.7%). The majority of the respondents had not conducted e-commerce with the internet (64.5%) and the minority had conducted e-commerce (35.5%). All in all, 95% of 35.5 of the respondents who had ever conducted a transaction online were ready to adopt e-government services in future.

Figure 10: E-Commerce experience
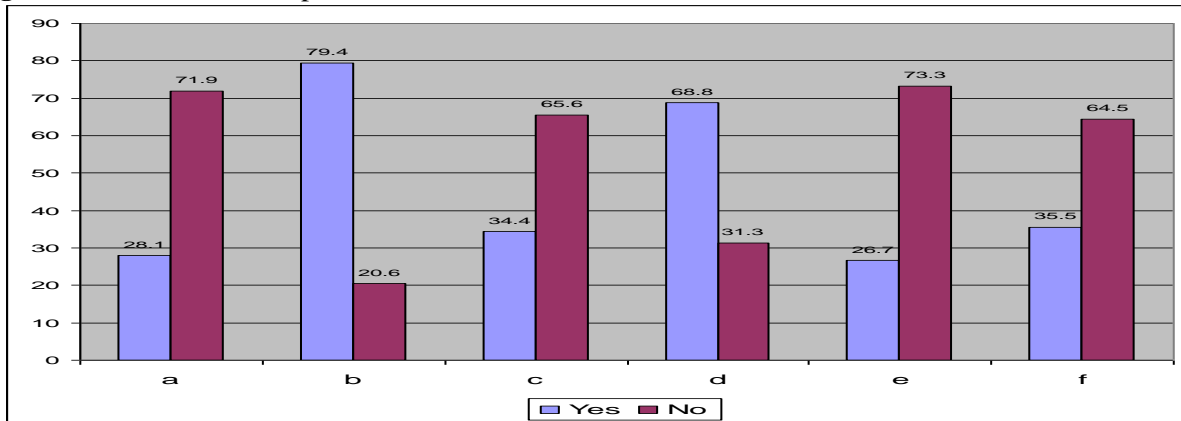
KEY
a. Shopping on Internet
b. Ever used the Internet to find information about services and products
c. Requested further information about certain products or service medium like internet
d. Paid utilities' bills using any electronic medium like the internet
e. Buying on internet (e-commerce)

e- Government experience
Here respondents were asked to comment on issues regarding the e- government experience items and they were require to choose either a yes , indicated by 1 or no (indicated by 2) as envisaged in the table below.

Table 4: **Showing e- Government experience**

|		Frequency	Percent
Will you be required to perform any transactions with any public organization in the near future?	Yes	32	84.2%
	No	6	15.8%
Total		38	100.0%

From the above results, it reveals that most respondents (84%) agreed that they will be required to perform any transacts with any public organization in the near future and only a few (15.8%) disagreed. This

implied that the majority were much willing to adopt e-government in the near future hence being able to increase on the adoption rate with the help of the proposed framework.

Number of times transactions are conducted annually with the public sector
From the results below, the biggest percentage of 46.67% had ever conducted transactions 5 times annually, followed by 30% with > 20 times, then 13.3% with 5-10 times and lastly 10% with 10-20 times. This implied that the majority respondents conducted transactions few times with annually with the public sector which enabled the researcher to determine the cause for this and get the possible solutions to increase on the number of times of respondents conducted transactions few times with annually with the public sector which increases the adoption rate too of e-government readiness assessment.

Figure 11: Showing number of times transactions are conducted annually with the public sector.
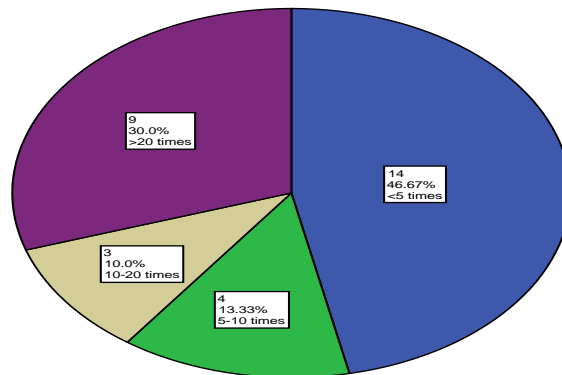
Transactions with the public sector
In this study, the questionnaire extracted responses on a number of attributes proposed on how transactions with the public sector are mainly conducted by respondents in the Ministries. After data analysis, findings revealed that the highest percentage of 46.67% used face to face while conducting transactions with the public sector, followed by both face to face and by phone (30%), then 20% used an agent to conduct transactions with the public sector and lastly 3.33% used phone only to conduct transactions with the public sector.

Figure 12: Showing how transactions with the public sector were mainly conducted.
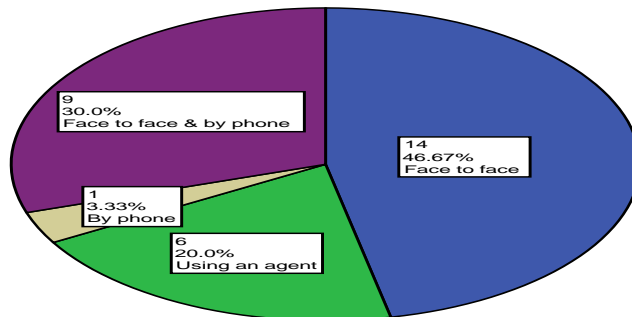
E-government experience
In this study, the questionnaire extracted responses on a number of attributes proposed as e-government experience. Data from their responses on E-government experience was analyzed as envisaged in the table below.

**Table 5: Showing results on E-government experience**

		Frequency	Percept
Heard of e-government	Yes	19	46.3%
	No	22	53.7%
Being helpful to Uganda	Yes	27	77.1%
	No	8	22.9%
Willingness to use it	Yes	30	88.2%
	No	4	11.8%
Awareness of e-government initiatives in Uganda	Yes	9	30.0%
	No	21	70.0%

Results showed that the half of respondents had generally never heard of e-Government before the time of the study (53%) nor were they aware of any e-government initiatives in Uganda and 46.3% had ever had of it. However, all the respondents they believed e-government adoption would be helpful to the Ugandan Citizens and they would be willing to use it (88.2%)**.** In relation to the objectives this study, these results are vital in that they were a basis of determining the requirements for e-government citizen adoption in Uganda and also finding the obstacles for e-government adoption in Uganda. Since the majority respondents had never heard of e-Government before the time of the study (53%), there is need for the Ugandan Government to embark on the campaign for Awareness of e-government initiatives, which will motivate respondents to willingly use it which increases on the adoption rate, achieve its massive benefits as mentioned earlier in the previous chapters.

Barriers to e-government readiness adoption
In this study, the questionnaire extracted responses on a number of attributes proposed as barriers to e-government readiness adoption by respondents. The findings indicate that the respondents believe that the poor infrastructure and technologies (96.7%), Lack of Skilled IT Staff (90.6%) and (90.6%) and Lack of funding (90.3%), are all great challenges to the implementation of e-governance projects in the Ugandan Ministries. Other challenges were: Lack of IT Skills, a lack of users ' Trust and Confidence, and a lack of Security.

Figure 13: Barriers to e-government readiness adoption
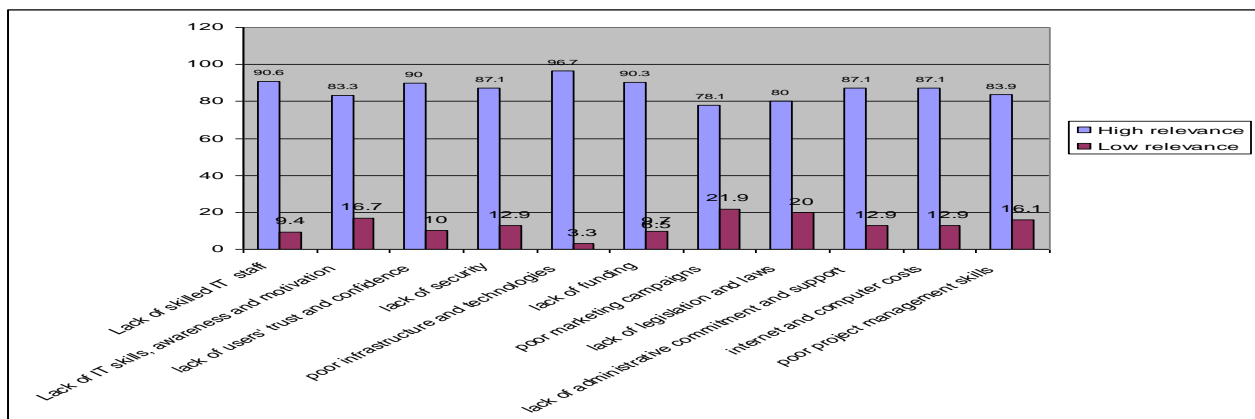

Summary of the Findings
From the data analysis illustrated above from the tables, graphs, and pie-charts; it was therefore, concluded that the following parameters were major determinants in accessing e-government Readiness in the Ministries under study.

Computer experience. 90% of 84.1% of the respondents who had computer experience were willing to adopt e-government. **Internet experience.** 99% of 94.9% of the respondents who had Internet experience were willing to adopt e-government. **E-commerce experience**. 90% of 79.4% of the respondents, who had ever used the Internet to find information about services and products, were willing to adopt e-government. **E-government experience**. Despite the fact the a big number of the respondents (70%) were not aware of e-government initiatives in Uganda, 88.2% and 77.1% of 70% were not aware of e-government initiatives in Uganda, were willing to use it adopt e-government and strongly believed that it will be of great help to them respectively. **Socio-demographic Information**. 72.7% of the respondents who were the majority had age bracket of 20-30 years and 93% of 72.7% of the respondents were willing to use e-government services hence showing that Age, education level and income are one of the major determinants in assessing the level of e-government readiness in the Ministries that were under study. The proposed framework for e-government readiness assessment in Uganda is vital for future successful implementation of e-government projects according to experts in e-government field who validated it. A percentage majority of 87% indicated that there is need for the government of Uganda through its ministries to have an Assessment framework for e-government readiness hence making this study highly relevant.

A Proposed framework for E-government Readiness Assessment for Uganda
Throughout the literature, the following significant e-readiness indicators were identified. These indicators will act as requirements for developing a comprehensive e-government readiness assessment framework for Uganda. E-Government Readiness Assessment Framework (EGRAF) for Uganda adopted is an extension of Azab et al. (2009) framework and in addition to the parameters above the EGRAF added six parameters among which includes, ICT Policies and Regulations, Socio demographic Information, Environment, Government enablers and E-commerce experience including (computer experience, Internet experience, and eGovernment experience) which suits the Ugandan situation according to eGovernment experts in Uganda.

Figure 14: *E-Government Readiness Assessment Framework for Uganda*
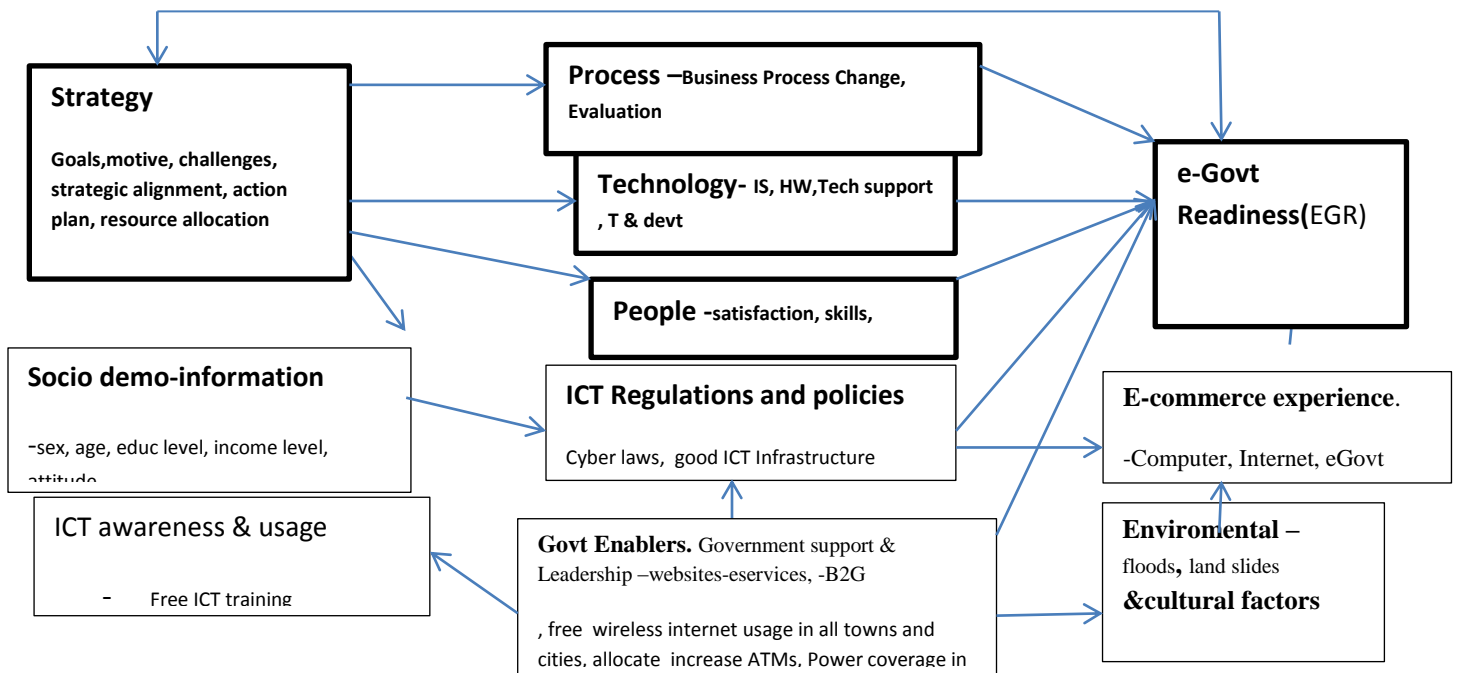
Source: *(Researchers' Contibution from theoretical and empirical literature review)*

Reasons for adopting the AZAB's E-readiness Assessment Framework.
This framework is necessary since it focuses on the main internal factors in the assessment of e-government organizational readiness in developing countries and how they lead to successful e-government adoption which is in the same line with the researcher's study of e-government assessment framework in Ugandan Ministries of ICT, Finance and Works. as current ones ignore challenges that arise due to organizational transformation issues stemming from diffusion of Information and Communication Technologies ICTs. This study adopts an e-government framework to highlight the main internal factors involved in the assessment of e-government organizational readiness and to examine how these factors lead to successful, organizational e-government readiness. Azab's framework was chosen by the researcher in addition to other parameters like socio- demographic Information, e-commerce, e-government enablers, ICT Awareness, ICT policies and regulations, because it integrates seven dimensions for evaluating organizational e-government readiness including e-government strategy, user access, e-government programs, portal architecture, business processes, ICT infrastructure, and human resources. Azab's integrated e-government framework for assessing the e-readiness of government organizations was adopted by the researcher due to the fact that most assessment models are more appropriate for the assessment of the overall growth of e-government in each country; they are not focusing on the difficulties that exist in the internal factors affecting transformation of a government organization caused by ICT diffusion. Most of these frameworks disregard the vision of external stakeholders and employees, although they represent the basis in the success of any e-government project.

More so, the knowledge obtained from this framework, offered valuable insights to ICT managers for effectively assessing the e-government readiness of organizations to facilitate the success of e-government programs in the three Ministries mentioned in the scope. Azab's framework helped the researcher to complete the previous work chiefly in the literature review and the processes dimension. Finally, the framework aided the researcher, her team and e-government experts in the three ministries under study to manage and effectively assess organizational e-readiness to improve the effectiveness of e-government initiatives in Uganda. The knowledge got from Azab's framework in addition to others, enabled the experts and other stakeholders to test the relations of the various parameters or factors in an emerging e-government environment using the three Ministries of ICT, Finance and Works a case study which was an essential step in the process of testing the framework for e-government readiness in Uganda.

Conclusion and Implications
This research developed an e-government readiness assessment framework for Ugandan Ministries government organizations in particular and Low Developed Countries in general. Unlike the previous e-government literature that focuses predominantly on technical issues and utilizes general e-government readiness framework (macro-level), this study contributes an organizational perspective at micro level for assessing e-government readiness that incorporates pertinent factors to an e-government context. The proposed E-government Readiness Assessment Framework (EGRAF) encompasses nine parameters of e-government readiness assessment for government Ministries including e-government strategy, government enablers, e-commerce experience (computer/ internet/e-government experiences), socio-demographic information, environment, business process and information systems, ICT infrastructure, human resources, and ICT Awareness.

This study offers useful implications to e-government decision makers, ICT mangers, ICT specialists and suppliers in the public sector by providing insights geared towards improving business decision-making, and expanding competitive advantage from effective e-government services. It equips key stakeholders with a framework that could be applied in performing regular assessment of e-government readiness to identify and provide suitable solutions. Ministries/organizations assigned responsibility for assessing e-government readiness will refer to this framework as a useful reserve during the e-government project implementation projects as asserted by the experts who validated it. The proposed framework for assessing e-government ICT readiness will decrease difficulty associated with ineffective e-government

strategies in the public sector through understanding the important e-government dimensions highlighted in the proposed framework.

Overall, this study empowers Uganda in fussy (particular) and other LDCs government Ministries in broad-spectrum with ample resource pertaining to e-government organizational e-government readiness and provides a comprehensive assessment methodology to guide agencies self-assessments. It is worth noting that whilst this researcher's contributions are constructive, supplementary research is obligatory. The proposed framework offered tiles the way for potential quantitative empirical research to test the framework in other government organizations and departments. Conclusively, this study is a vital conceptual trample in discovering pertinent or relatable features from Ugandan Ministries or organizational angle for assessing e-government readiness in e-government adoption and implementation perspective.

Recommendations
Therefore, based on the research findings the following recommendations are made to the LDCs in general and Uganda in particular through their Ministries and other interested stakeholders to use this as a guide to improve e-Government readiness for their citizens.

E-government Enablers
Users perceive risks concerning security and privacy issues that could discourage the use of online services. It is vital to ensure that users can transact on-line securely and their personal information will be kept confidential to increase the level of trust and the e-Government adoption rate. The government of Uganda should be acquainted with the fact that e-Government adoption highly depends on user perceptions of how securely they can transact online and whether their personal information is protected hence the need to establish state-of-the-art security infrastructure. The government should introduce a secure electronic credential (username/password) system called e-Pass to facilitate communication with online government services. In addition to entering username and password, users are prompted to input an activation code, which is sent by ground mail to the user to ensure privacy and authenticate user identity.

E-commerce Experience
As regards e-commerce experience, the researcher recommends that the Ugandan government should endeavour to put the following in place: basic infrastructure and technology (speed, pricing, access, market competition, industry standards, foreign investment), access to network services (bandwidth, industry diversity, export controls, credit card regulation), use of the Internet (use in business, government, homes), promotion and facilitation (industry led standards), skills and human resources (ICT education, workforce), and positioning for the digital economy (taxes and tariffs, industry self-regulation, government regulations, consumer trust).

E-Infrastructure: If the objective is on E-Infrastructure then the focus should be on organizations, hardware and software. Here e-readiness equals computers and access –computer hardware and network access are required to be e-ready and bridge the digital divide, and government and private initiatives should supply them.

Internet Experience
The government of Uganda through its ministries should ensure that its citizens have enough the internet experience to make them e-ready to adopt e-government, Social-demographic information (age, education level, and income level). The government of Uganda through its Ministries should ensure that the educational system (primary, secondary, tertiary and all colleges) integrate ICTs into its processes hence making citizens e-ready by improve learning and promote e-government adoption. Since the majority of the Ugandan citizens live below the poverty line, the government should put free technical training programs in the community that can train and prepare an ICT workforce.

Service Quality
This study recommends that the government of Uganda through its ministries should ensure that the following vital aspects are worked upon if e-government readiness is to be adopted in Uganda. The service quality should be tangibles, reliability, responsiveness, assurance, and empathy. Expectations concerning good service quality should be responded by the government's high performance, and importance attached to the issue of good service quality. Expected speed of delivery, expected ease of use, expected reliability, expected enjoyment, expected control, prior experience, need for interaction with the service employee, and expected service quality. Core service or service product, human element of service delivery, systemization of service delivery, tangibles of service and social responsibility. The government of Uganda through its Ministries should embark on increasing ICT awareness among Ugandan Citizens. This will help the citizens of Uganda to move embrace e-government readiness.

The external pressure is not necessarily a people or body of people but can be government policies, requirements to achieve something, or any other implication. Therefore the role of external pressure comes into play on an individual's decision making process. Therefore identifying the influential pressures in communities and using these pressures to positively influence individuals towards adoption will enable a feasible environment to harvest the e-readiness of individuals. Government can enact policies to put pressures on individuals, which is already in place for the younger generations of people with the enactment of the educational policy to have ICT as a compulsory education in the curriculum and more so reduce the impact of intrinsic factors. The attitude, subjective norms and behavioural control are the three constructs seen as the intrinsic factors. The attitude change is a very important factor. This can be reduced or eliminated through increasing awareness and providing more exposure on ICT to individuals. Government needs to take the key role in promoting and facilitating ICT to eliminate the negative impact of attitudes.

Lastly but not least, the recommendations, which were released in 2004, espouse the promotion of ICT usage; enhancement of connectivity, especially among the rural poor; encouraging public-private partnerships; developing a nation-wide backbone; enhancing universal access and rural telephone networks; human resource development (university education, research and technology support networks, introduction of ICTs at secondary school level); and regulation (liberalizing ICT sectors) (Economic Commission for Africa, 2005).

Limitations and future research
The researcher conducted a survey using purposive sampling because few participants had the knowledge about the subject matter (E-government Readiness assessment framework) which limited the ability to obtain a larger sample size to participate in the research in different magnitudes and groups within the three ministries. In particular, it would have been ideal if a more number of internet non-adopters from different age groups, geographical locations, gender, and economic conditions were involved in order to add more value to the research.
The limited timeframe, this process has consumed a larger portion of the authors' effort and time, hence impacting on the concentration on the documentation and the ability to demonstrate a sound knowledge of subjects in the discussion. The data was collected four years ago, currently things might have changed hence the need future researchers to further research while looking at moderating variables like Top management in e-government readiness adoption and implementation in LDCs at micro level, particularly in the Ugandan Ministries.

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