

FACTORS AFFECTING ADOPTION OF E-GOVERNMENT IN ZAMBIA

Kelvin Joseph Bwalya
Department of Library and Information Studies,
University of Botswana
Gaborone, Botswana
kelvin.bwalya@mopipi.ub.bw

ABSTRACT

Zambia has been implementing e-government model of government for close to 3 years now. This is because e-government has been identified and adopted as one of the most efficient vehicles for appropriate, transparent and inclusive / participatory decision making. Zambia has shown a higher propensity to indigenous knowledge systems which are full of inefficiencies, a lot of red tape in public service delivery, and prone to corrupt and inefficient practices. The adoption of e-Governance promises a sharp paradigm shift where public institutions will be more responsive and transparent, promote efficient Public Private Partnerships (PPP), and empower citizens by making knowledge and other resources more directly accessible. This paper has examined two cases from Zambia where ICT has been utilized in support of e-government initiatives. It has also assessed the challenges, opportunities, and issues together with e-government adoption criteria regarding successful encapsulation of e-government into the Zambian contextual environment. It has been found that lack of adequate ICT infrastructure and political will, provision of content in English other than local languages, lack of proper change management procedures, non-contextualization of e-government practices, etc., contribute much to the delay in appropriate e-government adoption in Zambia. Out of these challenges identified, the paper proposes a conceptual model which offers balanced e-government adoption criteria involving a combination of electronic and participatory services. The proposed conceptual model is a start-point for a model which can later be replicated to include the whole lot of Southern African Development Community (SADC) countries given the similarity in the contextual environment.

KEYWORDS: e-government; adoption, factors, Zambia; ICT, decentralization

1. INTRODUCTION

Throughout the whole world, there has been a paradigm shift where governments and other independent policy/law makers have realised the importance of e-government as a strong tool for responsive governance. Traditionally, many governments have been using paper-and-file approaches in managing their businesses and this has proved disadvantageous in as far as accountability is concerned (Mehrtens et al., 2001). With the changing landscape where the majority of government's transactions with citizens, businesses and private partners take place at the local level, it is imperative that much effort be devoted towards putting in place mechanisms which allow maximum collaboration and participatory governing. The paradigm shift in way of governance has been brought about also partly by the rapid growth in Information and Communications Technologies (ICT) which have potential to transform the generation and delivery of public services by public institutions (Stiftung, 2002).

African governments have understood and appreciated the contribution of e-government to the government agenda. At the moment, strategic plans have been initiated in Egypt, Senegal, Mozambique, South Africa and Kenya. Although, a claim cannot be made that all of African leaders have understood the importance of e-government, a handful of them have accepted the notion of e-government and recognise that this concept has come to

stay if Africa were to compete favourably in global economic value chains. The African continent as a whole cannot be excluded from this paradigm shift of e-government. This can be substantiated by the communiqué which was released by the 4th African Development Forum (ADF IV, 2004) and reads in part:

E-Governance ... is an important innovation for enhancing good governance and strengthening the democratic process and can also facilitate access to information, freedom of expression, greater equity, efficiency, productivity, growth and social inclusion. Successful e-government initiatives can have demonstrable and tangible impact on improving citizen participation and quality of life as a result of effective multi-stakeholder partnerships. African governments need to develop policy frameworks, supported by legislation for e-Governance, that are linked to strategic development objectives

This consensus statement further proves that policy makers in Africa do understand the need for massive engagement of ICT in their governance paradigms in order to be competitive enough in as far as nations' resource accountability is concerned. Thus, it is right to state that e-government has the potential to improve public service delivery by public institutions towards transparency, accountability and responsiveness, promote collaborative and joint-up administrations in which other stakeholders in the government business can access services through portals or 'one-stop-shops'. E-Government also has the potential to enhance the decentralization reforms by bringing decision making closer to the doorsteps of ordinary citizens by collaborative reasoning made possible with the use of ICT (Tassabehji and Elliman, 2006).

ICT in the context of e-government is looked at as a portal for information exchange or a platform through which decisions can be made. The growth of the internet has had a transformational effect on the global society making information and services accessible in ways that were not conceived, let alone imagined, just some 30 years ago (Napoli et al., 2000). Further, the use of the internet and web tools for supporting participatory actions in legislative processes, political or societal decision-making in governmental or communities' context, but also user friendly electronic government services is becoming a common practice, described by the general term *e-Participation*. E-Participation discusses the Critical Success Factors (CSFs) of e-government. The CSFs considered in this paper are tailored according to the local context (Zambia). These are identified after having identified the challenges that have been met in implementing e-government programs such as e-Voting, traffic on government's websites if there are any, government knowledge and information portals, etc.

It is assumed that governments lie at the centre of driving the development agenda of any country. In this regard, e-government facilitates a fast track development highway by facilitating information exchange between/amongst the different stakeholders. This paper highlights the important challenges, issues and opportunities that determine the adoption of e-government in Zambia. As aforementioned, two case studies are visited to acquaint the readers with the current status of the e-government readiness environment in Zambia. The paper dwells much on how ICTs have been used to promote inclusive governance brought about by e-government. It analyses the different challenges and issues concerning e-government encountered and gives recommendation on how these can be rectified.

The rest of the paper is organized as follows: section 2 covers the literature review from recent studies that have been covered in the context of e-government implementation

and adoption; section 3 looks at the challenges, issues and opportunities that avail themselves for Zambia's e-government initiatives. Two cases are identified: the Integrated HMIS, and the Zambia Health Management Information System. After these cases have been looked at, the paper discusses several e-government adoption criteria with much emphasis on the context (Zambia). The conclusion is given at the end of the paper detailing the lessons learnt from the case studies as well as the set of recommendations to make e-government adoption a reality in Zambia.

2. LITERATURE REVIEW

Many studies have defined e-government in different ways: Coleman (2006) has defined e-government as the combination of electronic information-based services (e-administration) with the reinforcement of participatory elements (e-democracy) to achieve the objective of "balanced e-government". 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). 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. Previous studies have categorized public service delivery in three groups: publishing, interacting, and transacting (Kumar et al. 2007).

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).

Despite the huge determination of many governments the world over in implementing e-government and the acclaim that e-government has finally won, previous studies present mixed cases (failure or success) of implementing and adopting e-government into the socio-economic setup. Heeks (2003) partitions e-government success in three different categories: Total failure; Partial failure; and Success. *Total failure* is a situation when the initiative was never implemented, was implemented but immediately abandoned, or was implemented but achieved none of its goals. A *largely unsuccessful* case is one where some goals were attained but most stakeholder groups did not attain their major goals and/or experienced significant undesirable outcomes. A *Partial success/partial failure* is a case where some major goals for the initiative were attained but some were not and/or there were some significant undesirable outcomes. The other measures of e-government success are a) *Largely successful*: most stakeholder groups attained their major goals and did not experience significant undesirable outcomes., b) *Total success*: all stakeholder groups attained their major goals and did not experience significant undesirable outcomes., c) *Too early to evaluate*: it is too soon after implementation and/or there is too little evidence yet to evaluate the outcome.

The adoption constructs for e-government services should be thoroughly known before any adoption model is constructed. Many researchers have given it a goal to understand the initiatives that encourage the adoption of e-government services in different environments. These studies have shown that despite different environments having different

characteristics, there are general initiatives that promote e-government adoption by ordinary citizens. However, it is worth mentioning that certain environments have unique characteristics which may either impend or aid the adoption of e-government services. In order to have a basic understanding of these varying factors, let's review the adoption models that have been tried elsewhere so far.

As e-government services are mostly provided using ICT, it is imperative that the understanding of Information Technology (IT) adoption be done. This understanding can further be extended to help us understand the uptake and adoption of e-government systems. Most of the times, these theories take one of the following forms or approaches: a diffusion approach, an adoption approach or a domestication approach (Titah et al. 2006). In 1989, basing his thoughts on the Theory of Reasoned Action (TRA) (Napoli, 2000; Castells, 1996, 2001), Davis developed the Technology Acceptance Model (TAM) in a bid to explain how the users come to accept and use technology (Curtin et al., 2003). In reviewing the acceptance of a technology, many researchers have used TAM. TAM has several attributes such as Perceived Usefulness – PU (the degree to which a person believes that using a particular system would enhance her/his job performance); Perceived Ease of Use – PE (the degree to which a person believes that using a particular system would be free of effort) and the Subjective Norm – SN (the person's perception that most people who are important to him think he should or should not perform the behavior in question).

In order to succinctly explain the adoption model of technology, Venkatesh et al., (2003) extended the TAM and called it the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT helps managers assess the likelihood (probability) of success for new technologies as well as understand the drivers of technology acceptance. Everett Rogers' theory of Diffusion of Innovations (DOI) within the framework of the diffusion approach aims to analyze the characteristics of technology adopters (Napoli, 2000). Among others, these characteristics include the image, relative advantage, compatibility, complexity, visibility, results demonstrability, and voluntariness of use of the innovation. Wangpipatwong et al. (2005) have explored which factors influence the adoption of e-Government websites regarding information quality and system quality aspects. Out of these investigations, it has been ascertained that all the explored characteristics of information quality significantly influence the adoption of e-government websites and brings comfort to the users. Accuracy, relevancy, and completeness were more significant than timeliness and precision with efficiency being the most significant factor. For the developed world, let's look at a study that was conducted by Choudrie and Dwivedi (2005) in the United Kingdom. Their study examined the citizens' awareness and adoption of e-government initiatives in the UK and their study revealed that citizens with home broadband access are more likely to be aware of and adopt e-government services and that demographic characteristics of citizens such as the age, gender, education, and social class have an imperative role in explaining the citizen's awareness and adoption of e-government services in any given household.

According to case studies from different countries, there are many challenges and issues that need to be addressed for successful implementation of e-government. There are distinct factors that command the adoption of e-government, and these factors depend on the local context of any country. E-Government has shown a lot of maturity in Canada which currently is considered the most developed country in as far as implementing e-government is concerned. This is so because the Canadian government has committed to shaping itself as the government mostly connected to its citizens (Kumar et al., 2007). Some of the commitments that the Canadian government has done is the allocation of a handsome CAD\$880 million to support the development of e-government initiatives in Canada (Kumar et al., 2007). The only bigger challenge that Canada faces is citizen's usage of the available e-government resources (portals, web sites etc). The issues of trust and usability have come in

as a barrier to wide-adoption of the e-government in Canada. Previous studies have emphasized website navigability and aesthetics (Coleman, 2006), personalization and customization (Thorbjornsen et al., 2002) and loyalty programs (Kumar et al., 2006) as key strategies to attracting individuals to visit a website, which, in the context of this discussion are the e-government portals.

In proposing adoption criteria for e-government, Warkentin et al. (2002) proposed a conceptual model with citizen trust as the underlying catalyst for e-government adoption. Gilbert and Balestrini (2004) proposed and tested a model that combines attitude-based and service quality-based approaches. From the literature, it is clear that a number of frameworks founded on the Theory of Reasoned Action and Technology Acceptance Model have been utilized to explain the consumer adoption of the internet. The study by Warkentin et al. (2002) proposes perceived risk, perceived behavioral control, usefulness, and perceived ease of use. It defines perceived risk as a fear of losing personal information and fear of being monitored on the internet. It is ascertained by the conceptual model proposed that if an individual had control over how personal information is going to be used, and the control of how and when information can be acquired, adoption of e-government could be possible. In this model, there was also the power distance which is the distance between the upper and lower castes of the society which states that citizens in higher power distance countries are more likely to adopt e-government than those in lower power distance countries. The other model by Gilbert and Balestrini (2004) brings attitude-based and service-quality-based approaches together. The model outlines the willingness to use e-government services incorporating perceived (confidentiality, ease of use, safety, reliability, visual appeal and enjoyment) and perceived relative benefits. There are three aspects to this model: first, the diffusion of innovation theory which seeks to understand the process through which innovations such as the internet are disseminated in the society; second, the Technology Acceptance Model (TAM) which has roots in Information Systems theory showing how users accept and use a new technology e.g., the Internet; and the Service-Quality-Based (SQB) approach which seeks to understand the antecedents that affect user behavior.

Thus, we can succinctly state that the profound objective of the e-government initiative ought to be the frequent and recurring use of online services by citizens not only for obtaining information but also for interacting with the government. Warkentin et al. (2002) described adoption as the intention of citizens to engage in e-government to receive information and request services from the government. Gilbert and Balestrini (2004) measure it as the willingness to use e-government services while Carter and Belanger (2005) measure it as the intent to use e-government services. The model proposed in this paper aims to make an extension of the conceptual model proposed by Kumar et al. (2007). In that paper, the model was premised on the belief that e-government adoption is largely shaped by the extent to which the government can provide a rich, engaging, and hassle-free experience that is reliable and can provide higher levels of satisfaction. The model in Kumar et al. (2007) mentions that for effective e-government adoption, the different attributes to be satisfied are the following: a) User characteristics (perceived risk, perceived control), b) Website design (perceived usefulness, perceived ease of use (usability); c) service quality; and d) client satisfaction.

An across-the-board analysis of different countries worldwide on the capacity to adopt e-government as a major governing tool depends on a set of factors (Kumar et al., 2007). The key factors are the country's political will, the availability and strength of their human capital, the ICT (telecommunications) infrastructure, and the presence of administrative priorities. Based on these factors, the UN e-government report (2008) presents a synthetic 'e-government index' that reflects the 'requisite conditions' that contribute to establishing an enabling environment for e-government.

There is need to design a tailor-made conceptual model specifically for Zambia and similar environments (e.g. SADC countries). This paper proposes a conceptual model that is going to weigh the pros and cons out of the models reviewed, get the best approaches and build a model taking into consideration the local context. The major characteristics shown in the previous models mentioned in this section are ‘website design’, ‘user characteristics’, and ‘service quality which leads to client satisfaction’. In the conceptual model proposed, I wish to add all these attributes of the previous models and add on other attributes which are going to be identified by the cases studied. This is because the three attributes identified by the earlier models are critical for any e-government adoption strategy. But before we develop the model, let’s review the current e-government status in Zambia by taking a closer look at two e-government projects that were taken in the recent past.

3. ZAMBIA’S E-GOVERNMENT ENVIRONMENT: CHALLENGES, ISSUES AND OPPORTUNITIES

Just like many other countries in the Sub-Saharan Africa, Zambia’s government has the desire to implement e-government as a way to reach to its people with a view to promote e-participation and e-consultation in the policy/decision-making process with its citizens. Different projects have been started but have met serious challenges to being adopted by the ordinary citizens. UN e-government Report (2008) classifies the countries in 4 different groups: High e-government capacity (index = 2.00 – 3.25), Medium e-government capacity (1.60 – 1.99), Minimal e-government capacity (1.00 – 1.59) and Deficient e-government capacity (below 1.00). Zambia is categorized as having deficient e-government capacity with an index of 0.76 below Zimbabwe, Congo, South Africa and Burkina Faso in the Africa category (UN Report, 2008). 2008’s e-government Readiness Index shows Zambia occupying 158th position out of 182 countries surveyed with an e-readiness Index of 0.22 out of 1 (UN Report, 2008). Zambia has just introduced itself in the world of e-Governance. It is known that in 2005, the country’s government literally had no online presence (UN e-government Report, 2008). An excerpt from the table showing E-readiness data for 2008 shows Zambia pitted against the leading nation as follows:

Table 1: E-Government Readiness Index and Metrics (2008) – [UN e-government Report - 2008]

Rank	Country	Web Measure Index	Infrastructure Index	Human Capital Index	E-government Readiness Index
1	Sweden	0.9833	0.7842	0.9776	0.9157
2	Denmark	1.0000	0.7441	0.9933	0.9134
157	Djibouti	0.1137	0.0202	0.5531	0.2279
158	Zambia	0.0000	0.0316	0.6569	0.2266

The table above alludes to the fact that even in 2008, Zambia is officially recognized as a country with no online presence (with Web Measure Index of 0.0000). The Human Capacity Index and Infrastructure Index are comparatively high and so Zambia has some chance of realizing e-government implementation. According to the same survey (UN e-government Report, 2008); the United States of America scored a complete 1.0 on the e-participation index, closely followed by South Korea with 0.9773. This was primarily due to its strength in e-information and e-consultation. Zambia’s neighbor, Mozambique, came out

as the top African country on e-participation out of all the countries surveyed at position 16 with e-participation index of 0.43178.

In Zambia's context, usability, trust and ICT infrastructure have acted as the main impediments to e-government adoption. This paper suggests a conceptual model that is more accustomed to the ICT status in Zambia at the moment. This model combines the Warkentin et al, and Gilbert and Balestrini models described above. But before we do just that, let us look at two ICT projects (in the context of e-government) that have been implemented in Zambia.

3.1 Zambia Health Management Information System (ZHMIS)

As a strategic plan towards reaching out to its citizens, the Zambian government through the Ministry of Health contracted Health Partners International (HPI) to set up modern, integrated health management information systems (HMIS) database that would be flexible, user-friendly and able to handle all necessary data sources. This was done in the context of e-government – reaching out to citizens and improving the effectiveness of health care delivery system through the strengthening of HMIS.

In the pipeline, there is an implementation of the Hospital Information System (at major hospitals countrywide) and Financial and Administrative Management System (FAMS). The HMIS will integrate with the HMIS to provide an online and active information system for the health system.

As in the previous cases, e-government even in HMIS is being looked at as the sole provision of better service to the citizens. The HMIS is being used particularly to help the medical staff in addressing illnesses in a more convenient and appropriate manner. The citizens do not have access to this system. Because of lack of developed ICT infrastructure, health centers that are located in remote places of Zambia do not have chance to benefit from this initiative. The full potential of this system could not be tapped because, in some places which had some ICT infrastructure, the human resources do not have the necessary skills and requisites to operate the HMIS. In some districts, there may be even 1 person to manage all the HMIS systems installed at different health centers (MOH Report, 2007). The overreliance on donor support in the management and implementation aspect of HMIS presents a serious challenge to its sustainability.

3.2 Zambia Immigration Management System (ZIMS)

ZIMS has been implemented by the Zambia Immigration Authority as part of its agenda to provide its services efficiently and therefore contribute a substantial amount of tax returns to Zambia. The need for the authority to introduce this computer-based application was specifically to improve immigration service delivery; reduce the time it takes for the department to issue Permits and Visas and Clearing of persons at the ports of entry by about 50% ultimately reducing the cost of doing business for the applicants in the country (Simenda, 2009). In line with this, and with a quest to reach more citizens with this improved service, the authority has opened a website where various services offered by the co-operation can be accessed (<http://www.zambiaimmigration.gov.zm>). ZIMS is an electronic integrated visa and permit approval system which also has a component of border management within itself just like the website. This means the processing of applications for permits and visas is done through ZIMS.

Some of the challenges faced in the full-scale implementation of this project have been the following: a) it was not easy to bring all the staff on board due to education limitations (computer illiteracy), mind set (attitude problems towards computers); b) lack of linkage between the Zambia Immigration Website and ZIMS. This would have created an atmosphere where clients file in queries and monitor the status of their queries; c) there is

generally inadequate physical ICT infrastructure at various Immigration Offices and Border Controls in the country to facilitate speedy processing of applications and the efficient handling of travelers (Citizens, tourists and other visitors) at all Borders; d) limitation in the confidence levels of the staff in the new system as it is a IT based system, and how to revamp that confidence; e) lack of trust in the new system by most people, rendering the newly introduced ZIMS platform unreliable; and f) sustainability of the institutional capacity building in ICTs at various departments countrywide.

In summary, the following table outlines the characteristics of the initiatives for e-government implementation embarked on by the Zambian Government.

Table 2. Zambia's e-Governance Initiatives: Strengths and Weaknesses

	Factors Favouring Adoption	Factors Hindering Adoption
MOH Database (Original HMIS 1998-2007)	<ul style="list-style-type: none"> - Contains up-to-date legal information, thus attracts more people to use it. - Highly friendly to ordinary citizens (good usability) 	<ul style="list-style-type: none"> - Restricted access to people with internet connectivity - Provision of content in English other than the popular local languages such as Bemba or Nyanja.
Integrated HMIS (2007 to ...)	<ul style="list-style-type: none"> - Full backing of the Zambian Government and cooperating partners - Decentralized platforms - On time responsiveness - Used local people during its design phase of the HMIS 	<ul style="list-style-type: none"> - Difficult to mobilize funds for full-scale implementation - Rampant costs in training of local population in the use of the software - Lack of political continuity and commitment from the co-operating partners - Poor-grade procurement of IT equipment - Limited ICT infrastructures at local health centers - Exorbitant fees charged by local ISPs for internet connectivity - Unreliable and no guaranteed donor support for project sustainability.
ZIMS	<ul style="list-style-type: none"> - Faster processes of applications for VISAs, PERMITS, etc. - Convenient and easy method of accessing services - Anytime, anywhere 	<ul style="list-style-type: none"> - Lack of synergy between ZIMS and the immigration website - Unwillingness of the staff to adopt ZIMS - Limited ICT infrastructure - Shaky sustainability framework of the new system

ZIMS – Zambia Immigration Management System

HMIS – Health Management Information System

MOH – Ministry of Health

3.3 Comparison and Analysis of the Cases Studied

The two cases presented above have outlined the main impediments to the adoption of e-government in Zambia. Both cases show that there is limited ICT infrastructure in the government departments investigated, especially the remote areas. Also, the tools for e-government do not seem to be very friendly because of the computer literacy levels of the people, lack of willingness to adopt e-government because the content is mainly presented in English other than common local languages, privacy issues and usability concerns. Generally, the two cases outline the fact that the political will and intention is there to implement e-government because the leaders understand the benefits that this brings forth.

However, the two cases presented point to the fact that the government and different other stakeholders have not done the background work needed for smooth transition from traditional government to e-government practices (change management). Both cases show that there is no adequate human resource base trained to handle e-government which aims to produce efficient public service delivery. The cultural aspect when designing these e-government systems has not been emphasized nor incorporated in the design framework for the Zambian case. For both cases, the projects have been donor funded and this strongly threatens the sustainability in the aftermath of project sponsorship from the donors. Specifically, the ZHMIS case passed through a phase where donor support was suspended and the project had to be stopped. These and many other reasons outlined above calls for a need for e-government adoption models authored with strong emphasis on the local content, which this paper aims to achieve.

4. E-GOVERNMENT ADOPTION CRITERIA

In brief, the major contributions of the various models outlined in the literature review above are the following: As Wangpipatwong, Chutimaskul and Papisratorn (2005) have explored, there are different factors influencing the adoption of e-government services by the general population. Kumar et al. (2007) pointed out citizen's usage, issues of trust and usability as one of the central factors acting as a barrier to wide-adoption of the e-government in Canada. Other previous studies have emphasized website navigability and aesthetics (Coleman, 2006), personalization and customization (Thorbjornsen et al., 2002) and loyalty programs (Kumar et al., 2006) as key strategies to attracting individuals to visit a website. Warkentin et al. (2002) proposed a conceptual model with citizen trust as the underlying catalyst for e-government adoption. This study also proposed perceived risk, perceived behavioral control, usefulness, and perceived ease of use. Gilbert and Balestrini (2004) proposed and tested a model that combines attitude-based and service quality-based approaches; and their other model brings attitude-based and service-quality-based approaches together. The model outlines the willingness to use e-government services incorporating perceived (confidentiality, ease of use, safety, reliability, visual appeal and enjoyment) and perceived relative benefits.

The Zambia case studies have outlined the implications of using e-government systems in Zambia. Some of the implications unearthed from the case studies has been lack of acceptance of the newly introduced government style by both the general population and government employees; lack of cultural awareness, lack of adequate trust and usability levels, and limitation in the ICT infrastructure. The other models discussed in the previous paragraph have identified user characteristics (perceived risk, perceived control, availability of internet), website design (perceived usefulness, perceived ease of use), and general service quality as the core factors affecting e-government adoption. The model proposed in this paper aims to combine the different models that have been designed and tested elsewhere such as the Kumar et al. model tested in Canada, and the lessons learnt from e-government implementation cases to make an extension of the conceptual model proposed by Kumar et

al. (2007). The model in Kumar et al. (2007), which incorporates most of the attributes from previous models mentions that for effective e-government adoption, the different attributes to be satisfied are the following: a) User characteristics (perceived risk, perceived control, internet ...); b) Website design (perceived usefulness, perceived ease of use); c) service quality; and d) client satisfaction.

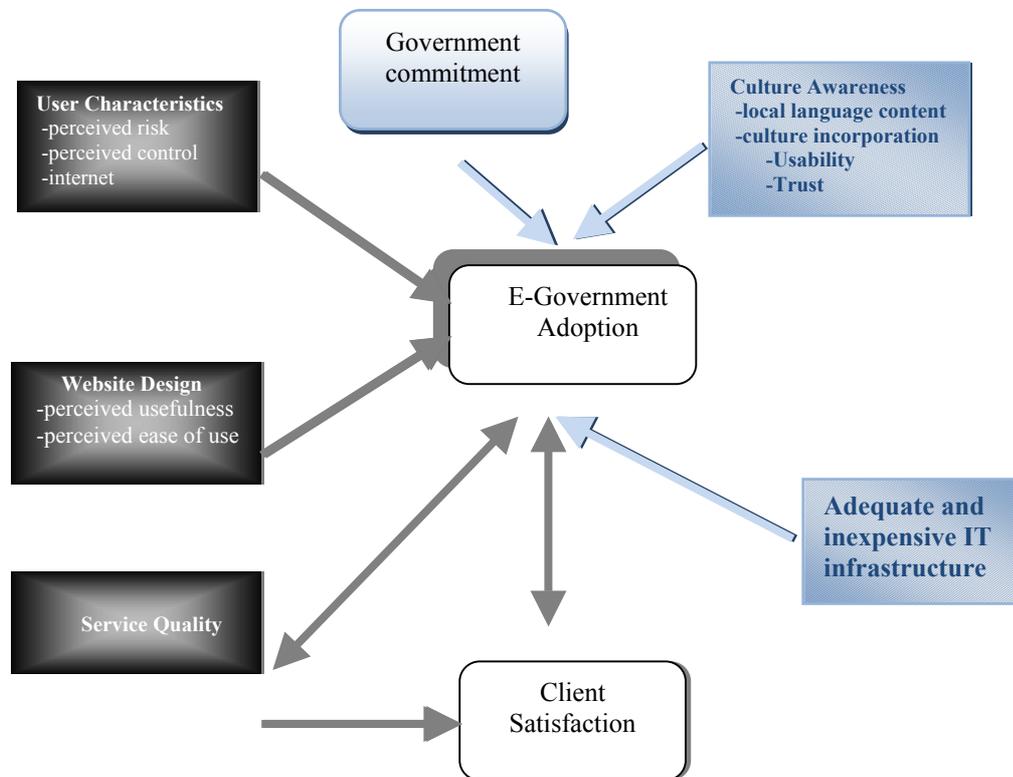


Figure 1. Proposed E-adoption Model

Thus, the complete conceptual model this paper is proposing incorporates all the attributes found in the earlier models with the extension of the culture awareness and the need to improve on the ICT infrastructure for the content to be easily accessible. Once the culture content is incorporated into the conceptual model, this will mean that the implementation of the e-government initiative will not only depend on the 'give-and-take scenario' but will also have e-participation of the citizens as a feedback mechanism for policy/decision making.

5 CONCLUSIONS AND RECOMMENDATIONS

It goes without saying that e-government is a very good practice if governments were to achieve excellence in as far as interacting with different stakeholders for feedback to create checks and a balance in their government strategy is concerned. E-Government is a channel through which the ruling class interacts with its citizens (eCitizens and eServices), improves public service delivery and processes (eAdministration), and builds external interactions (eSociety). This creates a win-win relationship where the work of the government is made easier by providing a public service at the disposal of a citizen. Also, time is saved, corruption is reduced and hence transparency and accountability of different resources is facilitated. E-Government can also allow the government to timely collect more tax from different sectors of the economy. The citizen benefits by having a say in the policy/decision-

making on different issues affecting the country and accesses efficient public service delivery from government institutions.

This paper has looked at different e-government initiatives and conceptual adoption models that have been employed to achieve appropriate e-Governance. The cases presented from different government (Zambia's) departments employing different e-government strategies suggest that Zambia may not be completely ready to fully implement or replicate the implementation of e-government. The paper outlines the different challenges that are faced in the adoption of e-government in Zambia and hence suggest a conceptual model for e-government adoption for Zambia. This is done by reviewing the two cases of e-government implementation by two department public departments in Zambia. The cases have shown that there is a lot of discrepancy in the quest to implement e-Governance in Zambia. A conceptual model based on the findings of the two cases, and reference to other models developed thus far, is being suggested. The proposed adoption model is an extension of earlier adoption models presented in this paper from earlier studies. Specifically, the proposed model suggests that there is need to include culture awareness (local language content, cultural incorporation), and make sure that adequate and inexpensive IT infrastructure is put in place.

In light of the above, the e-participation component of e-government adoption is encouraged and emphasized in the proposed adoption model. It is desired that there is a flow of information between the government and different stakeholders involved in the development process. In order to achieve this, the following recommendations are in order:

- 1) The government should create an enabling environment for the adoption of ICT in everyday lives of its citizens as this is the start-point of e-government. This has been emphasized in the 'government commitment' part of the conceptual model proposed. For the case of Zambia, the government's commitment has been shown by the ICT policy that has been put in place. The only attribute lacking in this case is the follow-up to implementation of the same. It seems all the nice policies are just on paper and implementation is lacking.
- 2) The government should play a leading role in developing the ICT infrastructure as this is a requirement for successful e-government implementation (as identified in the model by 'Adequate and inexpensive IT infrastructure'). This can be making sure that the nation's internet backbone and the International Gateway are managed responsibly. Further, the government should encourage developing of fiber-optic network for efficient broadband communication, reducing the rates for internet access through ISPs, and subsidizing the prices for getting Personal Computers (Desktops and Laptops). This can be done indirectly by reducing import duty on internet accessories, computers and computer gadgetry.
- 3) The government should take full advantage of various initiatives taken by the international community to assist African governments in their bid towards adoption of e-government models such as the Information Technology Center for Africa (ITCA); and the CAFRAD which is Center for Research in Administration and Government. These initiatives basically offer technical support and training (to address HR concerns who are competent enough for change management from paper to electronic form of governing) to different African governments. ZIMS above has shown that even employees in the government department trying to implement e-government can actually reject it.

- 4) There should be a lot of awareness campaigns sensitizing the ordinary citizens on the benefits of e-government for them to fully adopt it and incorporate it as part of their culture.
- 5) The development of e-government systems should be funded locally. Over-dependence on foreign (donor) support has its own repercussions (The case of HMIS outlined above). The local people should be part and parcel of developing the system to instill sense of ownership in them. This should also make sure that culture values are incorporated into the design frameworks of e-government systems (as 'culture awareness' in the proposed model).

This study is limited in that only two e-government cases have been presented. It is desired that in future, more cases will be analyzed and to the deepest detail. This will pave way for even testing of this model to ascertain its usefulness. Other future works for this study are comparing Zambia's e-government initiatives with other cases from other countries in the SADC (Southern African Development Community) region. This will bring us to understand the major issues and challenges that are faced in this region in as far as e-Governance adoption is concerned and how we can overcome these. At the end of such a study, a general conceptual model for the entire region of Southern Africa can be designed. The usefulness of such a model would be to create checks and balances against the implementation of e-Governance in the SADC region and ascertain whether the SADC strategic framework for the development of e-government is working or not.

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