FACTORS AFFECTING CITIZEN READINESS FOR E-GOVERNMENT SYSTEMS IN KENYA

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Abstract

Electronic government (e-government) provides a common infrastructure and direction across the public sector. It enhances collaboration within and among public sector organizations between Government and the business community, and between government and their citizens. Successful e-government depends on how well the targeted users (citizens) make use of the services. Kenya ranks very lowly on citizen usage of e-government systems, having been ranked by a UN report in 2010 with an e-readiness index value of 0.33. This is below the world average of 0.42, which makes Kenya better than only 60 other countries in the world. To implement and utilize modern and innovative technology, it requires that the government as well as citizens be e-ready, hence the need to evaluate their readiness for e-governance. Several research findings reveal that a high index may be only indicating that a country is e-ready in terms of Information Communication Technology (ICT) infrastructure and info-structure, institutions among others which is a very poor measure of the e-readiness of citizens. The aim of this paper is to investigate e-readiness factors in the context of Kenya's e-government systems. A desktop survey was used and findings indicate that e-readiness can be hampered if the users are not considered. This means that for any government to successfully implement any e-government initiative, the citizen should be well prepared to use the systems.

Key Words : E-government, e-readiness, ICT, e-citizen

1. Introduction

Electronic government (e-government) is a system that provides a common infrastructure and direction across the public and private sector. It enhances collaboration within and among public sector organizations as well as institutions. This also applies between government and the business community as well as between government and their citizens. Successful e-government implementation depends on how well the targeted users, the citizens adopt and make use of the services. The Kenya government has been making significant attempts to make its services and information on the Internet available in the recent past. This is seen by the push by many state agents to deliver their services online such as public service job application, tax file returns, immigration application services, driving licenses application among others. A nation-wide e-government Information Communication Technology (ICT) infrastructure is necessary for the Government to be able to offer country-wide services to citizens. The infrastructure is supposed to enable citizens and businesses to access government information and services in the comfort of their homes or nearby service access points without traveling long distances and/or queuing at government offices.

The achievement of e-Government in Kenya has been one of the main priorities of the Government of Kenya towards the realization of national development goals and objectives for Wealth and Employment Creation [1].

Such objectives are not uniquely Kenyan but are now becoming a global expectation [2-7]. In a report on world development indicators, the World Bank confirms that e-readiness or the preparedness of a country for adopting e-government can be assessed broadly around the parameters the necessary physical infrastructure. This includes integrated current ICTs throughout businesses, communities, and the government. Strong telecommunications competition as well as independent regulation with a commitment to universal access is key too. This should have no limits on trade or foreign investment [3]. However, the success of these efforts depend to a great extent, on how well the targeted citizens in general make use of the services and information. International Trade Union (ITU) states that as the specter of the growing digital divide is looming large, the significance of e-readiness assumes a very important position in the roadmap towards e-government successful implementation. This is because in an environment that is more e-ready, people are in general more comfortable with the new technologies and e-government initiatives are easily accepted and adopted [8].

There are many definitions for e-readiness. E-readiness is the measure of a country's ability to leverage digital channels for communication, commerce and government in order to further economic and social development [9]. It can also be said to be the extent to which the usage of communications devices and Internet services creates

efficiencies for business and citizens, and the extent to which this usage is leveraged in the development of ICT industries [10]. For the purpose of this study, citizen e-readiness hence shall be defined as the degree to which a country's citizens are prepared to the introduction of e-government. This is demonstrated by their ability to take advantage of the opportunities provided by e-government. In the same light, there exists various definitions for e-government. In this paper, the author shall adopt the definition UN e-government Survey [10] that defines e-government as the use of various ICTs in administrative, legislative and judicial agencies with the aim of delivering government information and better quality services to the government customers, who include public, businesses, government employees and other government agencies.

The rest of this paper is structured as follows. Section 2 presents a study of citizen readiness, section 3 presents e-government systems, section 4 presents factors affecting citizen readiness for e-government systems, and section 5 presents the findings and finally section 6 conclusions.

2. Citizen Readiness

E-readiness is needful in the creation and implementation of e-Government. According to Waema, it involves assessing the countries relative degree of advancement in the areas of networked world for ICT adoption and the basic applications of ICT providing a robust portrayal of e-readiness level and the e-government status [11]. He adds that e-readiness is a prerequisite to the creation and implementation of e-Government. Implementation of e-government requires a country to be e-ready in terms of infrastructure, equal access, and inclusion for all citizens. In a Global e-government survey, United Nations ranked Kenya in position 124 out of 184 United Nation member countries with an e-readiness index is 0.33, which is below the world average at 0.42 [12].

2.1 E-readiness indicators

A country's level of e-readiness is the degree to which each country is prepared to the introduction of e-government systems [13]. As such, a country must consider the level of e-readiness as it plans to enforce e-governance. Most studies indicate various e-readiness rankings based on various indicators. These are the necessary ICT infrastructure 2

including electricity, network, computer hardware and software among others.

Waki [14] gives a view that focuses on the citizen in the government affairs and makes him an active collaborator. While conducting an assessment of e-readiness, things like infrastructures such as data systems, legal, institutional as well as the leadership and strategic thinking readiness need to be considered [15]. E-readiness assessment can be used as an information-

gathering mechanism for governments as they plan their strategies for e-governance. It can help the project team to better understand what impediments to ICT implementation exist and what initiatives are needed to overcome them [16].

Various indicators have been in the past used to score in ranking institutions and nations for e-readiness. For instance, the economic intelligence unit evaluates e-readiness based on the following scoring criteria categories and weights: Connectivity and technology infrastructure 20%, Business environment 15%, Social and cultural environment 15%, Legal environment 10%, Government policy and vision 15%, Consumer and business adoption 25% [10].

In a study by KENET (Kenya Education Network) while assessing e-readiness for various higher education institutions in Kenya, they considered indicators such as networked access, network speed and quality, Internet affordability and Internet availability among others [17].

This is a clear indication that e-readiness can be measured in diverse ways. Based on the condition of the study population, each of these frameworks have certain indicators. Factors such as human resources, infrastructural status, political and legal factors and cultural conditions are some of those most commonly employed in the models for the assessment of e-readiness [17]. And as such, organizations must evaluate their level of readiness to modify their working models and strategies to enter the world network to achieve success. It is therefore important to come up with an assessment approach that completely and correctly capture the major issue being assessed in terms of e-readiness.

3. E-government systems

The achievement of e-Government in Kenya has been one of the main priorities of the Government of Kenya towards the realization of national development goals and objectives for wealth and employment creation. This is the way to go as the world shapes into becoming a global village. Many countries are striving to provide their service online and through short text messaging platforms. All this is done in order to increase citizens' access to information easily and more comfortably.

3.1 The Need for E-government systems

Having realized the benefits that e-governance brings forth, many governments around the world have adopted the same as an effective tool for reaching to its citizens and other different stakeholders. This phenomenon has led to a paradigm shift given that it has in the past been a preserve of the private sector. Governments are now equally interested in using the Internet for service delivery [19]. The advantages of e-government are unquestionable. For instance, the US Internal Revenue Service (IRS) reported that is saves millions of dollars annually by decreasing spending on printing, sorting, and

mailing tax materials through offering taxpayers web access to tax return forms and publications [19].

Online services are cheaper, faster and more readily available. They also reduce travel as well as waiting time, introduce a more efficient payment method, improve transparency of government's operation, reduce systemic corruption and eventually lead to transformation of governance [20, 21, 22, 23]. E-government projects are initiated as a key factor in the national strategies to enhance the efficiency and effectiveness of the government operations, and improve the relationships between citizens and the state [24]. In addition, low cost, quick information transmission, and lean, more efficient and effective governance are realized. Furthermore, information can be accessed even in remote areas, which leads to an easier and more cost effective way to get feedback [25]. This means that citizens can collaboratively participate in decision/policy making. Governments are normally viewed as complex, bureaucratic establishments with a set of information silos that erect barriers to access of information and make the provision of services cumbersome and frustrating [26]. More so citizen empowerment through access to information and more efficient government management can be achieved [27]. E-governance if well implemented, better delivery of government services to citizens as well as improved interactions with business and industry can also be realized.

According to the 4th African Development Forum, e-governance is an important innovation for enhancing good governance and strengthening the democratic process [28]. With effective multi-stakeholder partnerships, e-government initiatives can have demonstrable and tangible impact on improving citizen participation and quality of life. This include access to information, freedom of expression, greater equity, efficiency, productivity, growth as well as social inclusion [28]. African governments need to develop policy frameworks, supported by legislation for e-governance, that are linked to strategic development objectives [28].

3.2   Features of e-government systems

3.2.1 Scope of e-government

Many governments specialize in IT technologies, innovation/services in the public and private sector or adoption and marketing of e-government [30]. In addition, the systems strife to offer user-oriented services offered by government that are based on information and communication technologies.

The functions of e-government systems are enhancing access to government information, services that facilitate general compliance [31]. Moreover, citizen can access personal benefits such as electronic transfer and online application for public assistance and worker's compensation. Procurement applications allow government agencies to reap the benefits being realized in the private sector through electronic commerce applications. On citizen participation, online democracy includes access to elected officials, discussion forums, voter registration, and ultimately online voting are made possible by e-governance [32, 33]. A conclusive e-government system should include local political information, unit lists, official reports and speeches, tenders and draft bills [34]. Findings of a survey on user needs of e-government services in the UK reported that National Health Service hospitals for non-emergencies, social services, doctor's surgeries, local councils and the passport agency public services need to be included [32].

E-government studies in Singapore indicate that a government portal called e-Citizen was developed to maximize use of e-Government services and to enhance people's participation in democracy [35]. Accordingly, this also led this country to be the first nation in the world to conduct population census online. The underlining argument is that the scope of e-government cannot be pegged on certain services or activities. The different e-government initiatives are different in their goals and objectives, hence the benefits gained by these initiatives will be different as well, and the assessment of these benefits also vary according to the different perspectives of the stakeholders which effectively determine the scope. It can also be influenced by the stage of implementation a given country's e-government system is at. The government in question should strive to provide for as many services as possible on its e-government system if it is to realize a true e-governance over its citizen.

3.2.2.   Stages of e-government implementation

There are many approaches that have been established in defining e-government implementation stage model [36, 37, 38]. Although these models differ in the numbers and names of stages most of them have similar characteristics for each stage. One of the most used, however, is Gartner Group's model that classified e-government services offered online into four evolutionary phases: (1) publishing (web presence); (2) interacting; (3); transacting and (4) transforming [39]. Publishing is the earliest stage where static information about the agency mission, services, phone numbers and agency address are provided for further communication. Interacting goes one step further by enhancing the site's features with search capabilities and intentions based programs.

Transacting represents a full-featured online service that allows user to conduct and complete entire tasks online. Transforming is considered to be the long-term goal of almost all e-government services where all information systems are integrated and services can be obtained at one virtual Centre [40]. The four stages of e-government development were further validated in a comparison study on all e-government adoption-staged models [41]. The development of e-government services is an evolutionary process [11, 32, 33, 34, 35, 39].

Whatever the stage a country is at in its implementation of e-government system, an evaluation needs to be done to ensure that the citizens interacting with the system also transit through the stages in order to maximize the chances of its successful implementation.

3.3.4 Indicators of successful e-government implementation

There are several factors responsible for successful implementation and sustenance of ICT projects for social development such as e-government, including the degree of efficiency and transparency demonstrated in citizen services, the amount of reduction in cost, improvement of convenience for citizens, degree of reengineering and improvement of back-end services among others [41].

E-government should be comprehensive, integrated, ubiquitous, transparent, easy to use, accessible, secure, reengineered, and interoperable [30]. Citizens should be able to do everything they have to do or want to do with their government as much as possible through one e-government portal. They should be able to avoid the need to provide the same data over and over. This way governments can save time and money by not needing to re-enter data. Citizens should gain access to a jurisdiction's e-government portal and its connected sites and applications from any Internet-capable connection and Internet appliances.

E-government sites should be designed and operated so that the most novice of computer users can readily find the information they need. The sites should provide the information requested by government agencies and/or citizen with which they are dealing easily. In addition, the users should be able to perform all e-government transactions via the system completely. The systems should be accessible in a way that the design and operation of e-government systems from the ground up take into account the special needs of the disabled. This should be such that they use these systems as easily as the non-disabled [30].

Another key indicator is security. By all means e-government systems need to protect the confidentiality of data provided by citizens. The records created and stored by government, and the content and existence of citizen-government transactions performed over the Internet should be safe. Data about citizen government transactions and the content of those transactions, needs to be fiercely protected by the government [30]. In the recent past, governments have had their websites hacked into, a phenomenon that erodes the gains made on this. Enough budgetary allocation needs to be allocated for security.

It is not enough to replicate electronically the administrative processes and procedures currently in place. It is necessary to thoroughly re-evaluate the overall mission of the jurisdiction and then design a digital structure that creates government-citizen interface that simplifies and streamlines each transaction individually and the entire process of government administration generally [31].

In addition, an excellent e-government site is one that provides appropriate and up-to-date links to other e-government sites, at its own and other levels in the government hierarchy. All e-government sites need to work together seamlessly. Finally, e-government systems should be developed to e-governance Systems in that e-governance systems can just as easily implement democratic process, e-making of policy, building up e-community. E-government serves not only as a means of administration, but also as a primary tool of collective and democratic decision-making, and participation for society [30]

4. Factors affecting citizen readiness for e-government systems

In Kenya, the Government has an e-Governance strategy outlining the objectives and processes for the modernization of Government. They include enhancement of transparency, accountability and good governance. This makes the Government more result-oriented, efficient and citizen-centered. It enables citizens and business to access government services and information as efficiently and as effectively as possible through the use of Internet and other ICTs [42].This however can be hampered by a number of factors.

4.1 Limited Funds and Poor Infrastructure

Research has shown that infrastructure is the biggest motivator for uptake of whatever technology [29, 43]. Lack of funds and poor infrastructure are considered as major factors for failure in many projects [15]. Internet diffusion is still low due to the fact that local phone calls are expensive and the fact that PC's prices are still high. Moreover, the diffusion rate is low for the following; fixed line – 8%,Internet 6%,Mobile -90%, Broadband (ADSL) -1%, PC -3% [44]. For instance, the telecommunications infrastructure is still inaccessible in most parts of Botswana which is a great challenge to e-government. Findings indicate that even in places where telecommunications infrastructure is accessible, the cost is prohibitive. Furthermore, researchers have identified some disparity in infrastructure development between urban and rural areas [31, 45]. In the case of Kenya, universal access is far from being realized given that less than 10% of 38.8 million Kenyans have access to computers [46].

While digital villages are under construction, there has been limited penetration of cyber cafes and institutional access to the Internet in Kenya due to the fact that most (80%) of Kenyans live in the rural areas which greatly reduces accessibility and connectivity [47]. Such poor infrastructure is abysmal when compared to developed countries such as the United States where more than 74%

of the population is connected to the Internet [48]. Amazingly, the use of other forms of ICTs such text messaging has proliferated as more than 77% of the Kenyan population own mobile telephones [12, 47, 48, 49, 50]. However, most e-government systems are heavily PC and Internet based.

Another challenge is obsolete equipment and infrastructure. Most developing Nations access obsolete technology since they are affordable and some are donations in kind. Even so, the equipment are in but a few better developed towns and villages. This coupled with high cost of telecommunications services and lack of an adequate telecommunications network nationwide is another concern of promoting e-government implementation [51]. 4

In addition, e-government systems require considerable financial resources which must compete with other equally deserving budgetary allocation such as education, health, food among other basic necessities. For e-government, resources must be allocated to developing and managing systems, building up technical infrastructures, and coordinating systems and initiatives. This as is witnessed in many governments especially in developing countries is a big challenge.

4.2 Implementation Strategies

The greatest challenges experienced in e-government have been found to be implementation-related. Most of e-government strategies in the study were found to be lacking a strategic framework - a framework that stems from the e-government strategy itself. It is argued that the missing benefits of such a strategic framework lead to failure to incorporate very important elements and principles.

Lack of institutional framework supporting e-government include creating an institutional framework supporting e-government initiatives. This deals with setting up a high-level steering committee, monitoring implementation activities, ensuring e-government investment reviews, and establishing clear mandates and responsibilities for implementing e-government. However, it is important to define a clear mandates and responsibilities plan to allow effective plans for e-government development and ensure proper co-ordination across government agencies [53].

4.3 Skills and attitude

In order to implement an effective and efficient e-government, the personnel must have the skills and the right attitudes across government agents. Although Kenya is more e-ready than 60 countries in the world, the poor ratings attributable to diminishing resources. In addition the lack of skilled labor underscore the need for Kenya to play a catch-up with the rest of the world [11].

Resistant to change is defined as behavior that strives to maintain the status quo in the face of pressure to adopt

new ways in an organization [54, 55]. For example, GPS tracking, data collection, automated trip recording, credit card processing, and a passenger information screen for weather, sparked protests and strike by drivers of yellow cabs and limousines in New York City and Philadelphia in 2007. The drivers complained that the system would cost them money, affect their privacy, and result in problems from system crashes and GPS dead spots [56]. Resistance to change particularly among the elder members of the society pose a great challenge to e-government implementation [24]. They tend to be slow to take up new technology and way of doing things.

Other challenges include the lack of skills both competences, and expertise. Many citizens and government staff alike, besides battling the behavior changes wars to accept new way of doing business with government, are faced with the need to retrain and acquire new skills. Basic literacy skills as well as IT literacy come to the fore. Unless pushed by directive to comply, many opt to go back to the conventional ways. For example, in an attempt to get citizens to file tax returns online in Kenya, it took a lot of coercing and pushing for clients to take to using the system.

A digital gap also widens where the e-have-nots are left behind while those who can access ICT gadget and Internet enjoy the opportunities provided by e-government systems. This should not be case as it worsens the chances of successfully adopting and implementing e-government.

4.4 Citizen Participation

Conventional wisdom about the relationship between the citizen and e-government defines the citizen's interaction with the government's ICT infrastructure as a one-way street on which government content and other services are delivered to the citizen [14]. In this scenario, even though some level of interactivity may be involved, the citizen is seen very much as a passive recipient of government services and government is traditionally seen as the flawed outcome of a compromise between chaos and social stability [14]. A lot of government services have been provided via ICT in many countries. The adoption rate of these services however are way below expectation. The mobile banking services for example is one of the best facilities introduced by banks but many still prefer to spend hours in a bank just to get an account balance or to perform basic transactions that involve funds.

If actively engaged, citizen can embrace the systems easily if they see their feedback suggestions put to use. This can be through improving the services, accessibility or adding the services requested by them as well as customizing systems' interactivity to suit their various needs. The process should in fact be such that from the development through to the implementation, the views of the citizens are well captured.

4.5 Digital divide

The digital divide is always described in terms of the difference in the number of telephones, Internet users or computers per head between rich and poor countries [58]. In a recent study of the global digital divide, it was established that the digital divide's size and importance have been overstated and that current trends suggest that it is actually shrinking, not growing [48]. Ownership of PCs and disparities in Internet access are among the most important challenges faced today in implementing e-government.

The digital divide in developing countries around the world and Africa in particular is closely tied to the contextual economic environment of the respective countries. Countries with thriving economies are by and large associated with increased access to ICTs compared to those whose economies are doing badly [57].

The need for offline services will always be there as long as a certain population cannot effectively be served through a screen and keyboard [46]. Such an argument underscores the implications of digital divide among Kenyans. According to Alzouma [59], a significant percent of the population falls into the category of e-have-nots. In addition, Thompson discredited the notion that social networks such as bloggers, twitters, Facebook, YouTube, and text messages have the potential of helping governments solve national problems by mobilizing citizens [46]. He contended that the politicians drag government policy framework towards digital world without genuinely addressing the implications of poor connectivity, lack of skills, and costs.

In a study by American Association of Retired Persons (AARP), it was found that a significant number of users age 50 and older lack confidence in conducting personal business transactions over computer. Although, no similar empirical studies were located in regard to Sub-Saharan Africa, the findings could be more disturbing given that only few households have access to computer. Further, the research concluded that older people not only trust technology less but they have limited skills and are potentially at risk of fraudulent practices in an increasingly technology-drive commercial environment. The study noted that such an upward trend on automation may further increase the digital divide [34, 60-66].

4.7 Culture

Culture has been defined as the complex whole which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society [67]. Alternatively, in a contemporary variant, culture is defined as a social domain that emphasizes the practices, discourses, and material expressions, which, over time, express the continuities and discontinuities of social meaning of a life held in common [68]. The way of life does influence the way citizen carry out their daily activities. Some reserved communities don't easily embrace new technology. A lot has to be done in terms of basic literacy, IT literacy training and behavior change to encourage such communities to use e-government systems. In Botswana for example, people who have skills in ICT are limited. The majority of those who have them are young citizens thus the elderly are be left out in adopting e-government. Because the older generation tends to be reserved and slow in taking up new technology. Gender disparity aggravates the situation as women who tend to be proactive in taking up use of IT and other technology are viewed as social deviants.

4.8 Privacy and security concerns

Security and privacy of information is another serious technical challenge identified and is a well-documented issue for e-government implementation all around the world [69]. Participants feel that using websites to transfer their personal information (such as name, picture, and date of birth, ID number, and credit card details), sharing information with public agencies online or electronically is not safe. They are afraid that e-services websites are not secure enough to protect their private information from being misused or distorted by hackers. For e-government activities, service continuity is critical not only for the availability and delivery of services, but also to build citizen confidence and trust.

For example, the issues of trust and usability is a barrier to wide-adoption of the e-government in Canada [29]. Previous studies have emphasized website navigability and aesthetics, personalization and customization and loyalty programs as key strategies to attracting individuals to visit e-government portals [70].

4.9 Other factors

Other challenges experienced are lack of knowledge about the existence of the e-government system, leaders and management support, lack of policy and regulation for e-usage, lack of partnership as well as collaboration [71].

In comparison to the West, the high rate of illiteracy, lack of English language proficiency, and computer skills are challenges that make most people in Africa not only uncomfortable but also insecure about technological changes [2]. Further, the potential transformation that could be unleashed through ICTs initiatives could easily be mired by factors related to low income, poverty, language, and lack of computer proficiency [2]. In addition, lack of electric power particularly in the rural areas is a major challenge that hinders the use of technology to access services and information from the government. Without electric power, the computers cannot be operational and hence citizens' cannot access the Internet.

It is worthy to note that e-government implementations fails due to a mismatch between the current and future

systems resulting from the large gap between physical, social, cultural, economic and other contexts between the software designers and the place in which the system is being implemented [72]. The government being faced with management challenges in the implementation of e-government. The uncoordinated e-government activities result from low level of public administration of e-services as well as low quality and insufficient e-content information from grassroots levels.

5. Findings

It was established that many government are indeed embracing e-government. The benefits drawn from the use of online platforms to run government business are enormous ranging from cost saving, increasing efficiency and productivity, encouraging citizen participation as well as increasing accessibility to government services to even remote places on a 24-7 basis.

The study also found that several transaction can be done online ranging from basic applications, payment of legal and others fees or fine, availing of up to date information among others. This aside, many factors hinder the target consumers of e-government from accessing, using or affording the services. In fact most governments do not involve them as they develop and roll out this initiatives. Absorption of the services is hence low and government often have to go an extra mile in ensuring full implementation to e-government systems if they have to realize the benefits of investing in such ventures

6. Conclusions and Recommendations

As much as e-government is a fundamental element in the modernization of governance, several factors hindering its effective utilization must be handled. The targeted users who are the citizens in general make use of the services and information need to be e-ready. Factors affecting citizen readiness can be surmounted if the government of the day has the political will to do it. Strategies must be put in place and enough budgetary allocations be done in order to reap the benefits of investing in any e-government initiative.

More studies need to be done on factors affecting readiness for different groups from different cadres of the society as well as special needs groups. In addition, access to government services should be implemented on other platforms. Studies on readiness for e-governance on such platforms such as phone texting services, smartphone Apps, M-government among others needs to be done.

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