

Citizen-Centric Critical Success Factors for the Implementation of E-Government: A Case Study of Kenya Huduma Centres

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ABSTRACT

The development of the Internet and emerging technologies offer governments new opportunities to serve and interact with citizens in transformative ways that were not possible before. E-government is concerned with transforming service delivery and the fundamental relationship between government and citizens. Most governments have realized the importance of ICT and are therefore moving away from the conventional means of services delivery to the use of e-government. However, e-government has been faced with multiple implementation challenges, particularly in the developing countries, consequently, affecting their success rates. There are very few studies that have been conducted in Kenya to establish success factors and uptake of e-government from a citizen perspective. The aim of this research was to identify these factors and challenges that hinder successful implementation of e-government from a citizen-centric perspective. Specifically, the study identified implementation challenges of e-government in the Kenyan context with special focus on Huduma (Service) Centres. We developed and administered a data collection instrument to citizens at the main Huduma Centre in Nairobi County. Our findings indicate that the greatest challenges faced by citizens in accessing e-government services in order of importance are: inadequate ICT Infrastructure, low citizen participation, poor Internet Connectivity, low government funding and low level of awareness. We also identified challenges and made recommendations to inform future projects.

Keywords: *E-government, success, challenges, developing countries, citizen-centric*

1. INTRODUCTION

The development of the Internet, rapid growth in ICT and emerging technologies offer government new opportunities to be able to interact with and serve the public in transformative ways that were not conceivable before ([23], [2], [7], [6]). Reffat [23] and Alshehri & Drew [4] postulate that e-government is not just about building websites and using the Internet but it is about transforming ways of service delivery and fundamental relationship between government and citizens. E-government can be used to improve service delivery, reduce costs and encourage citizen participation.

Government can be able to use e-government to change citizens' perception of poor public service and regain public trust and confidence by putting citizens at the heart of public service initiatives and therefore underscore the importance of a citizen-centric approach to e-government.

E-government has emerged as a new way of using ICT to promote innovative, efficient, cost-effective and more transparent ways of serving the public ([21]; [22]; [4]). Alshehri & Drew [4] and Ahmad et al [2] contend that e-government offers certain benefits to businesses and citizens including: creation of new business opportunities, citizen satisfaction, transparency in governance, cost and time savings, simplified procedures, improved accuracy, accessibility and organizational management. Most governments have realized the importance of ICT in service delivery and are therefore moving away from the conventional ways of offering services to the use of e-government. Reffat [23] postulates that a successful e-government initiative should be able to attract citizens who are already connected

online; fascinate those who are not connected; and facilitate the transformation of government at three levels: government-to-government (G2G), government-to-business (G2B), and government-to-citizen (G2C).

From literature review, the provision of e-government services can broadly be viewed from two perspectives: supply side and demand side. Supply side views service provision from the perspective of government agencies and includes issues like ICT infrastructure, regulation and policies. Demand side on the other hand views service provision from the citizens' perspective and may include issues like quality of service, trust, privacy concerns, perceptions, interests and needs of citizens ([2]; [18]). Previous studies have concentrated more on supply side rather than demand side ([2], [22]), but the argument has been to shift the focus from supply to demand side bringing to fore the closely related paradigm shift of "from efficiency to effectiveness" [22].

This argument is further corroborated by the concept of 'public value' as advanced by [16], [9], [25] and [15]. Public value is defined as the value created by government to citizens through the provision of services, laws, policies and other actions ([12], [16]). Public value is reflected through improved quality of life for citizens, better utilization of services and development of trust in public services. E-government projects and initiatives are normally undertaken using public funds and are intended to serve the public. Consequently, they should be driven by public value.

Earlier studies have captured the issue of e-government services deployment from the supply side and

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very few studies have been done in developing countries and from a citizen-centric perspective ([2], [22]).

Governments are investing huge resources in development and deployment of e-services but their success is contingent upon their uptake by citizens [8]. In order to improve their success rate, it is important to identify and analyze the implementation challenges from a citizen-centric perspective. There are also few studies in e-government that have adopted models for use in evaluating success of e-government projects. Wang & Liao (2008) adopted the evaluation model of DeLone & McLean (Information Systems success model) for assessing success in e-government projects and defined an evaluation framework for measuring the success of G2C Information Systems from the citizen's perspective. The model is user-centric and has six key dimensions: Information Quality, System Quality, Service Quality, Use, User Satisfaction, and Perceived Net Benefit [22].

Our argument is that the model does not include other economic and environmental factors like the cost of access, facilitating conditions and perceived trust that influence success and system use.

According to [2], [21], [1], [7], [5], [4] and [10] who have conducted similar studies, the implementation of e-government, particularly in developing countries, is faced by a myriad of challenges, among them: poor ICT infrastructure; low funding; low level of awareness; low user involvement; high cost of access to services; digital divide; inadequate human resource capacity; poor coordination; poor leadership; resistance to change; poor project and change management; and ineffective government policy and regulation. Kenya has made strides in the deployment of e-government, but like many other developing countries is faced with numerous challenges that hamper the successful implementation of e-government.

In this paper we start by highlighting the objectives of this research and methodology used for the study. We then discuss the status of e-government in the Kenyan context followed by a comprehensive literature review on the challenges of e-government and critical success factors in the context of developing countries. We then conclude with our findings, results, recommendations and limitations of our study.

2. RESEARCH OBJECTIVES

Carter & Belanger [8] and Reffat [23] assert that the success of e-government is contingent upon citizens' engagement, reception and willingness to accept and use e-government. Consequently, the impact of e-government on the society is dependent upon the adoption and uptake of e-government initiatives by the citizens. The main objective of this research is to identify the critical success factors for the implementation and uptake of e-government projects in developing countries from a citizen-centric perspective. Specifically, the study aims at identifying the challenges that face e-government

implementation in the Kenyan context with special attention to Huduma (Service) Centres. It is important to identify challenges hampering the successful implementation of e-government to develop strategies to address them or mitigate their effects and to inform future projects.

The main goal of the research is to enlighten policy makers and government agencies on the critical success factors and challenges faced by citizens in the uptake and use of e-government services. The study will inform future projects on the drawbacks of previous initiatives and how to avoid or mitigate their effects to enhance the success rate of future projects. The academia, civil society, donors and sponsors of e-government projects will also benefit from the new knowledge generated.

3. METHODOLOGY

In this study, the researchers carry out a study on service delivery challenges from a citizen perspective in the context of a developing country, Kenya in particular.

The target group comprised of citizens seeking e-government services at the main Huduma Centre in Nairobi County. Our research was guided by the mixed research method where we collected both qualitative and quantitative data from citizens being served at the main Huduma Centre in Nairobi County to establish their perceptions on service delivery. We designed and administered a data collection instrument geared towards collecting relevant data from citizens. The instrument captured bio-data of the participants, type of service(s) being accessed, frequency of access, perceptions about success factors of e-government service, qualitative data on some challenges faced by citizens and any proposed recommendations. The data collected was analysed and the results and findings are presented in this paper.

4. E-GOVERNMENT CONTEXT IN KENYA

According to the United Nations global e-government survey (2014) [24]; Kenya is ranked 119 out of 193 United Nations member countries with an e-readiness index of 0.38, which is below the world average of 0.47. The results of e-government index, tend to reflect a country's economic, social and democratic level of development (Reffat; 2006). Therefore, the Government should put more effort to improve this index in order to make Kenya e-ready and compete favorably with the leading players. In 2004, the Kenyan government established the Directorate of e-Government (DeG) under the Office of the President as an oversight body to galvanize all ICT projects within government with the aim of enhancing service delivery in all the ministries [19] and in line with the Kenya Vision 2030 project. Njuru [20] contends that the main objectives of implementing e-government in Kenya were to enhance delivery of public services, improve information flow to citizens, promote

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productivity among public servants and encourage citizens' participation.

Through Public Private Partnership (PPP), the Kenyan government launched an initiative to set up 'Pasha' Centres (Digital Villages) to bridge the digital divide and promote Internet access in the rural areas ([13]; [14]). These Centres provide a host of e-government services to the public including email; Internet access; tax returns; police abstract forms and driving license application. The proposed implementation of the National Digital Registry Service (NDRS) project, which intends to have all Kenyans issued with a unique Digital Identifier (DID) to replace all identification documents (except passport), will be a big boost to the local e-government initiatives.

Some of the e-government services that the Kenyan government offers to both citizens and businesses include: Community Learning Information Centres; Kenya Open Data Initiative (KODI) to make public government data available to all citizens; tracking of the status of ID card processing; Government Shared Services including the Integrated Financial Management Information System (IFMIS); Digitization of Records at the Lands and High Court Registries, Driving License registration and establishment of Huduma Centres to provide services to citizens at designated locations. Other e-government projects that have been implemented include: tracking of examination results by the Kenya National Examination Council (KNEC), student loan application and repayment by the Higher Education Loans Board (HELB), checking passport status, applying for public jobs, filing tax returns online and reporting corruption. These projects have been implemented with varying degree of success and it is important that future projects be informed by lessons learnt from them.

5. CHALLENGES TO E-GOVERNMENT

Abdelsalam [1] contend that in order to streamline e-government initiatives with the contextual national and development agenda, it is imperative to know the unique challenges, successes and opportunities of e-government. As e-government gains ground in developing countries, it is important to appreciate the reasons for success and failure of e-government projects. It has been reported that despite concerted efforts by governments to implement and sustain successful e-government projects through prudent project management, there are many incidents of project failure.

Heeks [11] categorizes the success/failure of Information System projects into three main streams: total failure, partial failure and success. Total failure occurs when an initiative is never implemented or when a system is implemented but abandoned immediately after. Partial success occurs whenever the major goals of an initiative are not achieved or there are significantly undesirable outcomes. Finally, success occurs when most stakeholder groups of an initiative achieve their goals and there are no significant undesirable outcomes. Ahmad [2] argues that

only 15 percent of e-government projects are successful, 50 percent are partially failed and 35 percent totally fail.

These gloomy statistics underscore the importance of conducting research to establish the challenges hindering the successful implementation of e-government projects.

Gichoya [10] and Abdelsalam et al [1] also argue that ICT projects failures can be grouped into several types. The three main types can be summarized as: Project, System and User failure. Project failure occurs when a project does not meet the specifications or requirements as set out and agreed with the users. System failure arises when a system does not work properly including meeting or delivering the expected benefits and performance. User failure occurs when a system faces user resistance as a result of complexity of the system, user attitude, user ability and lack of training. We argue that system failure is a subset of project failure because system requirements are usually spelt out in the requirements specification, which as stated leads to project failure if not fulfilled.

It is also evident that majority of the failed initiatives are from the developing countries where acceptance and adoption of technology is relatively low ([1]; [2]). In addition, the success rate of projects in the private sector is higher than the public sector mainly because of inherent factors such as vague project objectives, political nature of decisions, poor leadership, inadequate ICT skills, bureaucracy and resistance to change associated with public projects. The main reason for failure of e-government projects is that most projects ignore the needs and requirements of the citizens at the point of designing and deploying e-government systems.

Refatt (2006) argues that e-government should deliver services in ways that citizens and businesses want them. Carter & Belanger [8] also emphasize the fact that despite government agencies offering services for long, very few of them have conducted surveys to establish what citizens and businesses really want. The other reasons for failure are: perceptions of the high risks involved in online transactions and perceived low security and privacy ([5], [3], [4]); low trust in government ([8], [3]); shortage of ICT skills and funding [5]; and complexity and scope of projects [1].

E-government is faced by a number of challenges depending on the implementation context.

Infrastructure development is important for the implementation and deployment of e-government in any context [4]. Nkohkwo & Islam [21] examined challenges faced by countries in the Sub-Saharan Africa as published in relevant literature during the period 2001 to 2012. The results show that ICT infrastructure, human resources, legal framework, Internet access, illiteracy, awareness, the digital divide, and connectivity are the most common challenges to the successful implementation of e-

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government initiatives in Sub-Saharan Africa. The challenges were further grouped based on their similarities into six different aspects: infrastructural, financial, political, organizational, socio-economic and human aspects. Nkohkwo & Islam [21] argue that e-government in developing countries and particularly in the Sub-Saharan Africa is far from reaching the intended purposes due to the many challenges facing member countries.

The infrastructural aspects lead in terms of the challenges that face implementation of e-government followed by human, political, organizational, socio-economic and financial aspects in that order respectively.

Nkohkwo & Islam [21] opined that infrastructural aspects include security, privacy, power supply, Internet access and connectivity while human aspects include awareness, attitude, capacity, trust, low citizen participation, training and capacity building among others. The socio-economic factors hindering e-government were identified as: illiteracy, economic development, culture, poverty and corruption and the political aspects summarized as: leadership, political situation, ICT roadmap, e-government strategy, legal framework, policy and regulations. Organizational aspects discussed in the paper were: top management support, leadership, change management, human capital development and organizational motivation and lastly, financial aspects were: financial constraints, Internet costs and cost of e-services.

6. CRITICAL SUCCESS FACTORS

Reffat [23] contends that governments and particularly those in developing countries should strive to develop basic infrastructure to take advantage of new technology and communication tools. Policy and regulation governing the use of ICT is required to ensure that mechanisms are put in place to counter legislative

barriers to the uptake of e-government. E-literacy skills required for use and uptake of e-services was identified as another critical challenge to the successful implementation of e-government. It is also important to note that e-government has a negative potential of increasing the digital divide if the e-literacy gap is not addressed and the disadvantaged not facilitated to gain access to e-government services.

Government services are only useful when people get to know about them and therefore marketing and creating awareness of the information and services available is important ([17]; [23]; [2]; [20]). The successful implementation of e-government requires strong political leadership to ensure the long-term commitment of resources, expertise and the cooperation of disparate factions within government ([17]; [23]).

Government collects personal information from citizens and it is incumbent upon it to protect and safeguard the privacy of this information to enhance public trust in government. Privacy refers to the guarantee of an appropriate level of protection regarding information attributed to an individual. Security is the protection of all information and systems against any disclosure to unauthorized access, modifications or devastation [4]. Good record management practices should also be put in place to guarantee security and privacy of records. Security breaches can erode public trust in government and it is therefore important to address security concerns at the service delivery points and during the storage, manipulation and transmission of information ([2]; [23]; [8]; [4]).

Our study identified twelve key challenges that developing countries face in the implementation of e-government. Table 1 below summarizes the challenges and proposed recommendations to address them.

Table 1: Analysis of challenges in implementation of e-government

No	Challenge	Recommendation
1.	Poor ICT Infrastructure	<ul style="list-style-type: none"> - Government should initiate more ICT infrastructure development projects to expand coverage - Initiate and promote Public-Private Partnerships - Adopt a common ICT infrastructure for government
2.	Unreliable Internet connectivity	<ul style="list-style-type: none"> - Provide broadband connectivity to the counties - Supply clean and reliable power to citizens
3.	Insufficient political leadership and change management strategies	<ul style="list-style-type: none"> - Place e-government at a strategic level in government where decisions can be made easily and resources provided - Train implementers on change management strategies
4.	Ineffective strategy, policy and regulation on use of e-government services	<ul style="list-style-type: none"> - Develop robust e-government strategy and ICT master plan - Create a legislative framework to support e-government
5.	Low funding for development of e-government by government and donors	<ul style="list-style-type: none"> - Progressively increase funding and budget allocation for e-government projects - Engage donors and other partners to support e-government projects

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6.	Mismatch between e-services required by citizens and those provided by government	<ul style="list-style-type: none"> - Conduct surveys to establish citizen needs before rolling out e-government projects - Engage citizens in government processes
7.	Low citizen awareness of existing services	<ul style="list-style-type: none"> - Develop publicity and marketing strategy - Conduct campaigns to market existing services - Provide incentives to encourage use of e-government
8.	Low literacy and e-literacy skills among citizens	<ul style="list-style-type: none"> - Train citizens on ICT - Engage the private sector to support government initiatives - Develop applications that use multi-media
9.	High cost of Internet and e-government service	<ul style="list-style-type: none"> - Lower cost of Internet and e-government services
10.	High risks associated with Internet & e-services	<ul style="list-style-type: none"> - Provide secure online electronic platforms
11.	Low security and perceived trust of e-services	<ul style="list-style-type: none"> - Secure government systems and websites - Improve on transparency of services by posting government procedures, rules and service delivery charter online - Educate government officials on importance of privacy & security - Continually evaluate government systems vulnerabilities
12.	Low citizen participation in government processes and cultural issues	<ul style="list-style-type: none"> - Promote local language and content - Engage citizens in government processes

7. FINDINGS AND RESULTS

A total of 120 questionnaires were administered as citizens were accessing services at the main Huduma (Service) Centre in Nairobi County. The response rate was good as a total of 93 respondents were responsive.

Out of the respondents 73.1% were male and 26.9% were female; 63.4% were between the ages 20-29 and the most sought after service was business name search and registration followed by National ID Card replacement and registration for National Health Insurance Fund (NHIF) at 37.6%, 19.4% and 18.3% respectively. Consequently, it is implicit that most of the Citizens accessing services at the Centre were youth seeking for replacement of their National ID cards, registration of new business ventures and NHIF. Most of the respondents sampled had accessed e-government services at the Huduma Centre more than thrice in the course of the year implying that they were frequent users of e-government services.

The perceived success factors in order of importance from citizen's perspective were: inadequate ICT Infrastructure, low citizen participation, poor Internet Connectivity, low government funding and low level of awareness. Most respondents indicated that language & cultural barriers, ICT literacy skills and availability of policy and regulation were the least success factors for implementation and access of e-government services.

Overall, the perception index of the challenges on a likert scale of 1-5 was 3.4 meaning that the challenges experienced by citizens were moderate. Figure 1 below depicts the mean perception indices for the various success factors. From a qualitative perspective, Citizens indicated that there was low awareness about the available services; customer care service needed to be improved; speed of service was low and they required more service centres to satisfy the high demand.

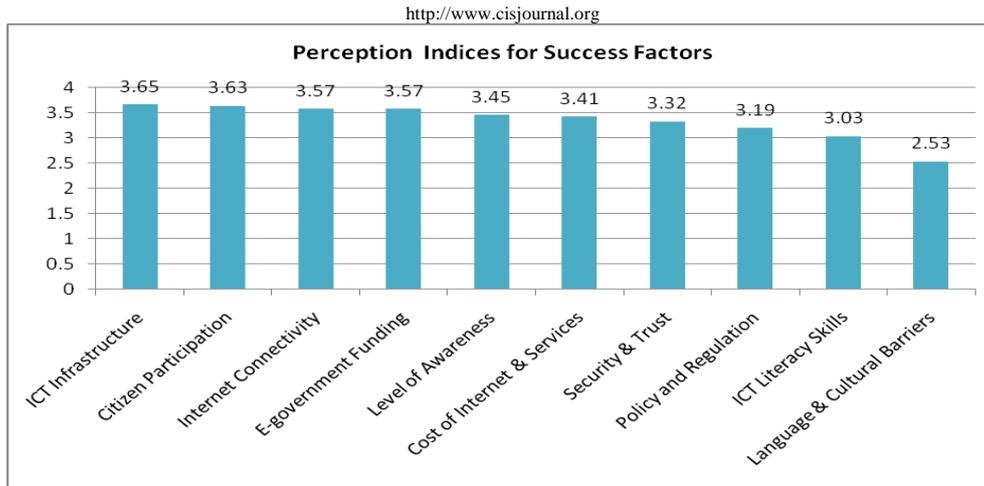


Figure 1: Perception indices for success factors in implementation of e-government

8. CONCLUSION AND RECOMMENDATIONS

In order to successfully implement e-government services, the government must understand the needs and requirements of its citizens and address the challenges facing citizens at the point of service delivery. Our findings and recommendations are useful in assisting governments in developing countries to devise strategies to inform future projects to ensure successful deployment of e-services and realization of the envisaged economic and social impact.

It is apparent from our findings that greatest challenges are poor ICT infrastructure and Internet connectivity. The Kenyan government has done a lot to improve Internet connectivity and ICT infrastructure. It has laid fibre cables in major towns and cities to improve access and established Pasha (Digital) Centres through Public Private Partnerships [14]. However, access has not permeated to the rural areas where majority of the population reside probably because of access to electricity and other requisite infrastructural services. The government should therefore initiate more infrastructural projects in partnership with donors to improve ICT infrastructure.

The second greatest challenge is low level of citizen participation in e-government which inherently follows from the low level of awareness. Njuru [20] contends that one of the main objectives of implementation of e-government in Kenya was to improve citizens' awareness and participation in the governance process. In order for the Government to achieve this objective and have a greater impact on provision of e-services, it must create awareness and encourage citizen participation through deliberate and specific marketing & campaign strategies geared towards reaching out to citizens. This is corroborated by [20] who argues that the Kenyan government has not adequately sensitized its citizens on the importance and benefits of e-government services despite the many initiatives it has undertaken. The government should also provide

incentives that will encourage citizens to utilize the available e-services; improve customer care and create more Huduma Centres in the counties.

9. LIMITATION OF STUDY

One of the limitations of our study is the small sample size which means that the findings may not be generalized to other similar areas without conducting an extensive research with larger sample sizes from different Huduma Centres. The other limitation is that the study has been conducted only at the main Huduma Centre in Nairobi County because it is the most established and has been in existence for longer than the others that have been recently established. We therefore recommend further study in other Centres distributed in Nairobi and other regions.

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