

BARRIERS AFFECTING E- GOVERNMENT ADOPTION IN COUNTY GOVERNMENTS IN KENYA: A CASE OF LAIKIPIA COUNTY

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ABSTRACT

Many barriers have been cited in the adoption and diffusion of e-government services in the public sector. This study sought to investigate the barriers affecting e-government adoption in Laikipia County. To realize this objective, the study surveyed a sample of the offices in the Laikipia sub-counties comprising of Laikipia West, East and North. Data was collected using interviews and questionnaires from the Laikipia County government staff. A sample size of 32 respondents was identified through stratified sampling. Descriptive statistics were used to analyse data and the results were presented in tables. The study established that there is inadequate infrastructure to support e-government initiatives in Laikipia County and there is no clear policy framework for implementing a fully functional e-government. The study established that although the government to some extent has mechanisms to ensure e-government privacy, the security of e-government systems is not adequate. This study concluded that the low level of e-government readiness in Laikipia County, deficits in ICT infrastructure, lack of e-government policy and lack of security of information in e-government systems affects e-government adoption in the county. The study also concluded that lack of an ICT framework for implementation of e-government is another barrier. This study concluded that the barriers that affect e-government adoption are largely associated with infrastructure, policy issues, security of information and social factors and recommended that Laikipia County government should develop an ICT framework that addresses barriers such as ICT infrastructure, policy, security and social factors.

Keywords: County, devolved, e-government, adoption, ICT, UN, framework.

INTRODUCTION

Background

Globally, governments are moving away from traditional or conventional ways of service delivery towards e-governance for enhanced access of public services (UN, 2014). While a UN report (2014) indicated that e-government has been adopted by all the 193 UN member states, majority remains at the low or intermediate levels of e-government adoption. Most studies on ICT in Africa have shown constraints and benefits of ICT in a macro perspective. Infinedo (2005) classified the level of adoption in Africa in three regions; North Africa, sub-Saharan Africa (south) and sub-Saharan Africa (East and west). South Africa has higher e-government adoption than other parts of Africa. East and Southern Africa was the only region that was not connected to the global broadband infrastructure and accounted for less than 1% of the world's international bandwidth, as a result of this missing link, the region relied on satellite connectivity which costs the highest in the world (Farrell, Glen and Shafika, 2007). East African region is however moving fast to address this shortage as a result of fiber optic from Fujairah in the United Arab Emirates (UAE) in Mombasa, under the TEAMS project lowered the cost of connectivity and enhanced access to information (Gitonga, 2011).

Kenya is also implementing e-government to enhance service delivery. The Kenyan Government has underscored universal access to ICTs as a major objective of Vision 2030, which is Kenya's economic blueprint that is aimed at propelling her to a middle-income country by the year 2030 (Kenya vision 2030, 2010). Objectives are generally to improve efficiency and effectiveness and to save costs. A study conducted by UNESCO (2004) shows that ICTs can help reinvent government by injecting innovative ideas in the government institutions and structures to enhance provision of goods and services with greater efficiency, effectiveness, and lower costs. Njuru (2011) also observed that e-government is increasingly becoming a fundamental tool for enhancing public administration and service delivery to the citizenry.

Statement of the Problem

Many barriers have been identified as influencing the successful adoption of e-government in Kenya. Kenya is currently ranked as 119 in e-government adoption globally and has retained same ranking since 2012. In African countries ranking, it declined from number 7 (UN, 2012) to number 9 (UN, 2014). According to this survey, Kenya was ranked second in the East African Community after Rwanda in terms of their e-government Development Index (UN, 2014). According to Ochieng and Gichoya (2013), county government plays a significant role in the

social, political and economic development of Kenya though they face a number of vital challenges which impede their abilities to effectively and efficiently deliver public services. In their effort to offer public services, most of these counties rely on manual file-based information systems which hardly cope with the dynamics of modern day public service delivery. The adoption of ICTs will definitely eliminate most of these challenges. The e-government strategy (2004-2007) does not expressly state the place of defunct local authorities in the entire e-government strategy. County governments inherited the non ICT-enabled information from defunct local authorities and municipal councils which fell short of supporting public service delivery. Technology in service delivery is crucial and ICT can transform county governments by promoting good governance through increased capacity to deliver. It is against this background that this study sought to investigate barriers to e-government adoption in Laikipia County.

Objective of the Study

The objective of the study was to investigate barriers affecting e-government adoption in Laikipia County.

Research Question

1. What are the barriers affecting e-government adoption in Laikipia County?

LITERATURE REVIEW

Infrastructure and service availability are critical in e-government adoption. Government services offered online are supposed to be available 24 hours a day and 7 days in a week. Availability provides citizens with flexibility and convenience whereby they are able to process transactions anytime anywhere outside government office hours (Abanomy, Al-Badi and Mayhew, 2005). In some cases public institutions lack the capacity to provide these services throughout thus compromising availability. Hardware running these applications lack that capability of ensuring 99.5% availability that is yearned for by users of this systems.

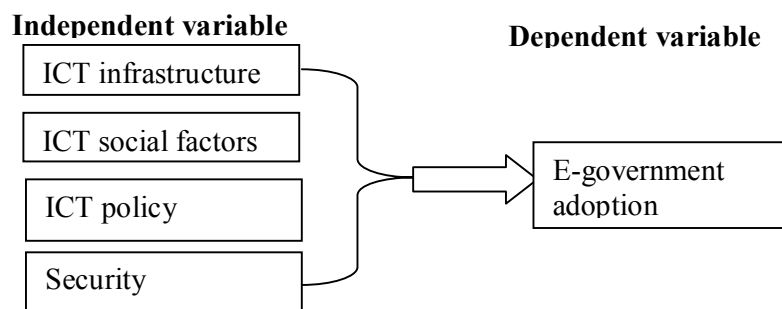
Cultural demographics like power distance, uncertainty avoidance, gender, interests, class and age have strong influence on any organizational change initiative. E-government adoption ideally should put into consideration the above issues of culture for it to succeed. The essence of any e-government initiative is to integrate government services with people and increase citizens participation in issues of governance and administration and therefore much interaction is experienced (Bolgherini, 2006).

The other cultural factor that affects e-government adoption is uncertainty avoidance. In culture with higher uncertainty avoidance, there is high esteem of trust and therefore less likelihood of taking risks; while in cultures with low uncertainty avoidance, things are taken easy and people rely less on trust as a method of avoiding risks. Therefore, in cultures that tend to avoid uncertainty, trust is more important as a precondition to any form of interaction. So, higher uncertainty avoidance will enhance the positive effect of citizens' trust on intentions to engage in e- Government (Warkentin et al., 2010).

In designing and implementing e-government business models, a government must consider elements of policy, which include regulatory issues, economic issues, and the rights of users. Sustaining committed executive leadership contributes much in building effective E-Government business cases as well as maintaining citizen focus. According to a study conducted by U.S. government, it was established that the biggest concern for e-government managers was not technical but rather was related to lack of clear ICT policy that is supposed to act as a pivotal through which coordination and collaboration between different government agencies while dealing with ICT projects and issues that could arise from them. Lack of this policy causes significant complications where there exist different agencies doing the same tasks and function with same goals and thus incurring un-necessary costs (Jaeger and Thompson, 2003).

Conceptual Framework

In this study, independent variables include; ICT infrastructure, social factors, policy and security. These are presumed to affect e-government adoption. The relationship of the variables is presented in the figure below.



RESEARCH METHODS

Research Methods and Design

This study used a descriptive survey research design. This research design is appropriate for a study concerned with determining the level of e-government adoption in a devolved government. A descriptive study is one in which information is collected without changing the

environment of the phenomenon under investigation. Descriptive studies are usually the best methods for collecting information that demonstrate relationships and describe the world as it is. Silverman (2011) pointed out that descriptive studies can answer questions such as “what is” or “what was” as well as “why” or “how” questions. According to Sekaran and Bougie (2010), descriptive survey is a method that studies large population (universe) by selecting and studying the samples from the population to discover relationships.

Population and Sample

The target population comprised of ICT officers and heads of departments in Laikipia County (104). The sample size for the study was 32 respondents a 30% representation of the target population. According to Mugenda and Mugenda (2008), a sample of 30% of the population is representative enough. This study therefore opted to select 30% of the target population.

Data Collection, Processing and Analysis

The instruments for primary data collection were questionnaires which were administered by the researcher with help from local field enumerators to enable coverage of the sampled respondents. The questionnaires were simply structured for ease of administration and also to obtain the necessary information for the study with ease. The researcher sought authority from the relevant regulatory in order to be in tandem with ethical considerations of research. A total of 32 questionnaires were distributed to the sampled group to partake in the study. Follow-up was made by the researcher to monitor the progress of response. All questionnaires were collected after three weeks’ time. The collected data was analyzed using descriptive and inferential statistics. Descriptive statistics which included frequencies and percentages were used to describe data while multiple linear regression analysis was used to make inferences from the data. The following multiple regression analysis model was used to analyze data;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y is understanding of e-government (E-government adoption)

X_1 = infrastructure

X_2 = policy

X_3 = security

X_4 = social factors

ε = error term

β_0 is the constant or intercept while β_1 , β_2 , β_3 and β_4 are the corresponding coefficients for the respective independent variables while ε is the error term. Data analysis results were presented in tables.

RESULTS AND DISCUSSION

Results

The results are presented in model summary table.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.790 ^a	.624	.601	.31690

a. Predictors: (Constant), Infrastructure, policy, security, social factors

The results show that predictor variables infrastructure, policy, security and social factors explain 62.4% of variation in Y (e-government adoption) as the value of r^2 is 0.624. Change in e-government adoption that were explained by independent variables in this study were 62.4% and therefore 38.6% of change could be attributed to other factors not in the scope of this study.

Analysis of variance was done to examine the fitness of the regression model used. The results are presented in ANOVA table.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10.674	4	2.668	26.572	.000 ^b
1 Residual	6.427	64	.100		
Total	17.101	68			

a. Dependent Variable: E-government adoption

b. Predictors: (Constant), Infrastructure, Policy, Security, Social factors

Results of analysis of variance show that F-ratio ($F=26.572$) was statistically significant. Therefore the model used was fit and the relationship of variables established could not have occurred by chance.

Coefficient of determination was used to establish the contribution of each independent variable to the change in the dependent variable (e-government adoption). The results are presented in the coefficient of determination table.

Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.703	.703		3.843	.000
1 Policy	.180	.132	.106	1.366	.177
Security	.116	.058	.221	2.004	.049
Social factors	-.251	.070	-.414	-3.565	.001
Infrastructure	.385	.126	.275	3.064	.003

a. Dependent Variable: E-government adoption

The results show that security ($\beta = .116, p = 0.049$) positively and significantly influences e-government adoption. This means that the higher the security the higher the level of e-government adoption. The results show that social factors ($\beta = -.251, p = 0.001$) negatively and significantly influences e-government adoption. These results show that social factors in place in Laikipia County could be hindering e-government adoption. The results also revealed that infrastructure ($\beta = .385, p = 0.003$) positively and significantly affected e-government adoption. The results show that the better the ICT infrastructure in Laikipia County, the higher the level of e-government adoption in Laikipia County. Although policy positively affected e-government adoption, it was not statistically significant ($\beta = .180, p = 0.177$).

The regression equation will be;

$$Y = 2.703 + 0.180 X_1 + 0.116 X_2 + 0.385 X_3 - 0.251 X_4$$

The regression equation above shows that taking all factors into account (policy, security, social factors and infrastructure) constant at zero the adoption of e-government will be 2.703. At the same time policy does not influence significantly the adoption of e-government in Laikipia County while security positively and significantly influence the adoption of e-government. However, social factors have a negative effect on adoption of e-government in Laikipia County. It is also evident that infrastructure positively and significantly influence adoption of e-government in Laikipia County.

Discussion

The study established that low level of e-government readiness in Laikipia County negatively affect e-government. The study established that the network in the area of work is not reliable

and does not provide a substantial up-time. In addition, Laikipia County government has not provided adequate hardware components for the required e-government tasks. The study revealed that reliable ICT hardware components are not in place and the available software is not regularly updated to cater for the e-government emerging requirements. Also, there exist no contingency plan for data backup and recovery in case of data loss. The study established that in general there is inadequate infrastructure to support e-government initiatives in Laikipia County.

The study revealed that Laikipia County government has not developed a clear policy framework for implementing a fully functional e-government. Besides, the government has not set aside adequate finances to cater for e-government requirements. The study established that there is no standard that govern acquisition of ICT equipment and their accessories as well as an established policy observed in handling equipment. In general, this study revealed that there is no clear ICT policy followed in handling disposal of hardware and accessories.

This study established that the security of e-government systems in Laikipia County is inadequate hence negatively affecting e-government adoption. The study also established that there is no code of conduct governing management of information. Also, the government has no standard for managing storage of data. The study found out that there is no established procedure of archiving information assets in Laikipia County neither has the government put in place technical means to assure users of their personal data privacy.

This study established that social factors positively affect e-government adoption as the government has initiatives to encourage and motivate use of e-government services. Both ICT experts and the users embrace these e-government initiatives. The study also found out that there has been change of working methodology as a result of application of e-government but internal factors faced by users influence their attitudes towards e-government. This study established that the county government has not given adequate training on e-government benefits and importance to Kenyans. In addition, there are no well-established frameworks and mechanisms for appropriately monitoring and evaluating the costs and benefits of e-government investments. The government has not ensured adequate availability of e-government services and external factors faced by users do not adequately influence their attitudes towards e-government positively.

CONCLUSIONS AND RECOMMENDATIONS

This study concluded that the level of e-government adoption in Laikipia County is low given the deficits in ICT infrastructure, lack of e-government policy and lack of security of

information in e-government systems. The study also concluded that lack of an ICT framework for implementation of e-government means that the citizenry are not enjoying efficient and effective service delivery they ought to get from the county government. The study recommends that the national government should assist Laikipia County government improve their e-government adoption. Laikipia County government should ensure that an ICT framework is put in place for e-government adoption. Laikipia County government should ensure that the ICT framework developed addresses barriers of e-government adoption identified in ICT infrastructure, e-government policy, and security of information in e-government systems and social factors.

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