Human Resource Capacity and Adoption of E-Government for Improved Service Delivery in Kajiado County, Kenya

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Abstract

Rapid growth in technology in the last two decades has made governments to start E-government initiatives as a way of ensuring effective and efficient operations. E-government has been shown to improve accountability and transparency as well as delivery of services in a timely and cost-effective manner. The purpose of this study was to establish the influence of human resource capacity on adoption of E-government in Kajiado County in Kenya. The study was based on pragmatic paradigm. Descriptive survey was used in this study. A sample of 335 respondents was drawn from the target population of 2660 employees from the devolved 10 ministries in Kajiado County using Cochran (2007) formulae. Quantitative data was collected through open and closed-ended questionnaires while qualitative data was collected through an interview guide. Regression models and correlation were used to analyze inferential data and test hypotheses. Qualitative data was analyzed using content analysis. The study found that human resource capacity had a strong positive influence on adoption of E-government (r= 0.595, p-value=0.000). The study concludes that human resource capacity has a significant influence on the adoption of E-government in the County Government of Kajiado. The study recommends that the county government of Kajiado should develop frequent training programmes for all the employees in the County. The training programmes should be preceded by training needs analysis to identify the training needs of the employees in regard to the use of ICT. This study also recommends that the County government of Kajiado should make use of financial and non-financial rewards to motivate the employees. In regard to financial rewards, the County government should offer more competitive salaries to the employees.

Keywords*:* Human resource capacity, Adoption of Technology, E-government, Internet.

Introduction

The adoption of E-government for service delivery can be defined as the extent to which an organization uses E-government systems to facilitate all the organizational strategies and activities. This definition focuses on the organizational success in incorporating E-government systems into its organizational processes and it's consistent in IT adoption at the organizational level (Armstrong & Sambamurthy, 1999). Despite the disparity in the number of stages of E-government implementation and adoption from many scholars and bodies ranging from static website to full transactional online web portal, E-government is not a one step process due to diverse technological, social, organizational, economic and political aspects as well as the financial resources involved. The potential of E-government as a tool for development relies much on three fundamental requirements - infrastructure, human capital, and connectivity (United Nations Department of Economic and Social Affairs, 2012)., therefore there is a need to address specific needs regards in public organizations. The development of essential ICT skills among the organizational human resource is fundamental for successful E-government implementation and adoption.

Knowledge, skills and competences as well as underlying attitudes and motivations are necessary for E-government adoption. Basic and advanced computer training should be conducted at all levels of organization; this will enable employees to use new applications, reorientation to new work processes and methodologies. According to LaVigne (2001), to achieve successful E-government adoption, five types of skills are needed; analytical skills, information management skills, technical skills, communication and presentation skills and project management skills. Top management equipped with ICT Skills are able to make better decision, allocate resources, support E-government initiatives as well as encourage employees to adopt E-government systems. E-government initiatives are complex projects that need project managers to design, plan and control the progress. It requires technology experts to transition E-government from basic websites to high level integrated services allowing stakeholders to transact online. The level of IT experts determines implementation and adoption of E-government. According to Alshehri and Drew (2010), addressing human development issues, require Knowledge management initiatives such as staff training to create and develop the basic skills for E-government usage and well as maintain the IT experts. Ongoing access to training is a paramount as the technology advancement increases and new technologies, practices and competitive models emerge. Training can be done through; on job training, classroom training, panel discussions as well as e-learning through videos. It's therefore necessary to investigate the extent to which human resources capacity influence the adoption of E-government.

Digital transformation is a paradigm shift throughout the world caused by rapid growth of ICT and many governments just like the private sector have realized the importance of E-government as a tool for responsive governance. Implemented and adopted ICT has potential to transform delivery of services in public institutions. Benefits of E-government adoption are undisputed. It's evident that E-government is an effective driver for economic growth and saves time as well as bringing accountability, effectiveness, and openness in government, but there are many challenges that hinder the exploration and realization of its opportunities such as human resource capacity (Al-Sebie and Irani 2005). Research on E-government has identified challenges such as lack of awareness, access to e-services, resistance to change and lack of skills are hindering the adoption of E-government in many countries.

There is a high rate of failure of E-government projects, particularly in developing countries, despite the advantages and benefits that E-government technology provides. A report on E-government implementation projects in developing countries indicated that 35% failed, 50% partly failed, and only 15% were successful (Heeks, 2003). Raguseo and Ferro (2011) noted that public administration is lagging behind the private sector in the usage of ICTs for conducting their back-office activities. Most of them have not fully incorporated ICT in automating their activities. According to Raguseo and Ferro (2011), operational features, new managerial skills, new abilities of defining adequate policies, new capabilities of planning activities to conduct, new aptitudes to increase the citizens' involvement in public activities as well as the availabilities of new ICTs, combined with the organizational changes and the new competences creation is necessary for public administration to overcome organizational internal barriers in order to realize the value of E-government adoption. Nograšek (2011) noted that although there is awareness that E-government is more than using ICT and putting public services on the web, the impressive growth of E-government exists in the making of information and services available to people. As many countries commit to IT investment, research on change management suggests that potential benefits of IT systems within organization remain unrealized. While Neufeld et al. (2007) noted that most IT projects do not get close to achieving anticipated results. According to Aiman-Smith and Green (2002), the cost of projects in most cases exceeds initial budget due to time overruns leading to project failures.

Wood-Harper et al. (2004) declared that studying factors that lead to successful E-government implementation and adoption is crucial. There a need to identify key success conditions, indicators and factors in order to develop an understanding on why and how E-government initiatives should be successfully implemented and adopted. This study therefore sought to examine the effect of human resource capacity on adoption of E-government. The study was guided by the following research hypothesis:

H1₁ Human Resource Capacity does not have significant influence on the adoption of E-government in the county government of Kajiado.

Related work

Adoption of E-government for service delivery

E-government or digital government refers to the use of ICT, IT and other web-based technologies to improve efficiency and effectiveness of service delivery in the public sector. It's the use of internet and other technological devices by governments to deliver services to the public (Young-Jin and SeangTae, 2007, Bhatnagar, 2004). Digital government or E-government entails computerizing the back and front office using ICT tools as well as modifying organization internal operation processes of the public sector (Liikanen, 2003). It also involves office automation through online services and transactions to improve government services (Huang, 2010). The government is able to become more responsive, transparent and accountable to the public through open government data initiatives as well as reduce bureaucracy. Government is able to increase its efficiency and offer better quality services. Successful implementation and adoption of E-government benefits all stakeholders such as employees, citizens, NGO, communities as well as businesses.

Adoption of technology has two aspects, adoption at organization level and adoption at individual level (Fichman, 1992). Organization adoption deals with analyzing adoption decisions by large aggregates such as companies, business units, agencies or departments, whereas individual adoption deals with an individual behavioral intention to adopt an innovation or actual adoption behavior (Fichman ,1992). According to Hall and Khan (2003), contributions of new technology innovations in organizational performance can be realized if and when the new technology is widely accepted and adopted. The understanding of organization and individual decisions to adopt technology is essential for technological change management. To successfully implement and adopt E-government for service delivery, the government must have a vision and the system must be accepted and adopted by the intended users (Graafland-Essers & Ettedgui, 2003). Kyobe (2011) found that capacity to "adopt and use ICT" and "exposure" are remarkable determinants of adoption of ICT in South Africa. ICT adoption in the developing nations is influenced by income, availability of computer and internet skills. E-government   adoption brings fundamental change in the public-sector structure, its culture and values and ways of conducting business. The radical change is surrounded by human, cultural, organizational, political and technological issues that must be dealt with for successful adoption. It brings about transformation changes to process, structure, culture and individual behavior in the public sector (Abdullah, Rogerson, Fairweather, & Prior, 2006)

E-government adoption has no universal model applicable to all countries and regions. According to Moon (2002) and Layne and Lee (2001) many government around the world adopted E-government solutions ranging from simple website, one-way communication, two-way communication and integrated websites with online transactions. Many scholars such as Lyne and Lee (2001) and Moon (2002) came up with stages of E-government development stages, with a general agreement on essential stages such as publishing, transactional and integration, however the approaches in terms of technological and organizational perspectives seems to differ in the E-government   life cycle.

Human Resource and Adoption of E-government

Human Capacity Building refers to developing an organization individual's core skills and capabilities that help them achieve their development goals (Wairiuko, 2014). The realization of the full potential of ICTs requires training for relevant skills to build individual and institutional capacity for users and all beneficiaries (Kandiri, 2006). The level of training required for users to upgrade their skills and to learn how to adopt and use new technologies may be an obstacle for technology application (Borhani, 2016). Experienced employees are keen on adopting innovative solutions though the burden to acquire skills to successfully adopt these innovation solutions causes barriers to adoption. Technology adoption indicates that the level of complexity impacts directly on its rate of implementation. Knowledge and skills for implementing and applying innovation increase the intention to use technological innovations and accelerates the adoption process as noted by (Sargent et al., 2012, Adriaanse et al., 2010). Therefore, training is important in facilitating the process of integrating new tools with current methods and procedures. Khanh (2014), noted that if people cannot use the new technologies, they cannot take responsibility for their own quality, training is a costly investment in any organization. Zulu (1994) argues that education and training are crucial elements of ICT implementation and adoption while Qureshi (1998) argues that training must be provided in order to develop skills in the use of ICT systems. Zulu (1994) also noted the issue of the few qualified ICT engineers to implement service and maintain ICT hardware and software while Qureshi (ibid) observes that the sustainability of the ICT projects depends on local expertise for maintenance and support.

There is a need to combine both ICT and IS skills with knowledge of the public sector, civil society and change management. According to Keselica (1994), Smith (1996), Lloyd and Whitehead (1996) training, hands-on support and proactive stance is important in adjusting to work with technology. According to Norris (1999), in government organizations, employees are not adequately trained on information technologies, these results to resistance in change and use as well as underutilization of the technology innovation.

Therefore, high level of personnel IT skills can have a positive impact in adoption of E-government in public organizations. Existence of knowledgeable management can support using of IT to achieve organization objectives (chwelos et al., 2001). Ebrahim and Irani (2005), noted that IT experts are increasingly leaving their jobs in the government to work in the private sector, due to the better offers they are getting. The government should consider better offers to attract them. To maintain highly skilled IT experts, there is a need to train them to keep pace in the rapid ever changing and evolving technology.

Og'ang'a (2012) noted that human Resource capacity in ICT affects E-government adoption in Kisumu County. Specifically, the level of human resource understanding on ICT, E-readiness among ICT personnel and ICT literacy among the staff streamline and positively influence E-governance adoption and implementation. However, employee's resistance to change hampers E-government initiatives. Nonetheless, training personnel empowers them to maintain the ICT and make the targets of ICT in the local authority achievable. In addition, Tomaszewicz (2015) indicate that digital literacy among the staff affects E-government development and implementation in developing countries. Skills required include utilization of search engines, use of the internet, basic computers skills, technical-procedural skills, cognitive skills and critical reflection skills.

Theoretical framework

Structuration theory, was proposed by Anthony Giddens (1979, 1984), as a way to bringing together the duality of structure and agents. He argued that most theories relied on the structure, making human agents passive actors while most of the social conditions, power and constrains that shaped human actions were ignored. The theory argues that structures existing in the society and the human actions are mutually constitutive and form a duality. According to the theory, structures are abstract rules, judgments, indicators and ways of doing or seeing or understandings that operate through explicit and implicit orders. Anthony Giddens (1979, 1984), identified three modalities linked to human actions such as facilities (resources that are used to exercise power), norms (rules that govern the actions), and interpretive schemes (knowledge that people use to make a meaning on everyday occurrences).

In the institutional theory (Orlikowski 1992, Scott 1995) identifies three dimensions that influence individual cognitive and behaviors in an organization: signification, domination and legitimization. Structure of signification provides meaning to every human action and interaction with objects. Human agents look at information system in terms of how they understand them as well as their capabilities. Domination structure deals with power relations that are implicit everyday human actions, thus hierarchy relationships within organizations indicate power structure rising from authority, rank experience and implied knowledge. Structure of legitimizations determines what is acceptable and appropriate for the organizations without use of power. For example, the organization can decide to use email as a mode of communication and interaction through acceptance. According to Orlikowski and Yates (1995), individuals in an organization can make use of legitimization, domination and signification to make sense of technology and gather resources needed to adopt and use technology within the internal processes, business activities as well as strategies and actions needed to assimilate technology.

The scholars argued that organizational human resources or top management could manipulate the institutional structures of signification, legitimization, and domination, thereby influencing and motivating individual actions. This can be achieved by either reinforcing existing structures or by creating conditions that could make the organization more conducive to adopt new technology. The structuration theory in adoption of technology focuses on human action and social structure interaction and suggests that E-government adoption is a cumulative consequence of individual actions shaped by organizational meta-structures (Manoharan, 2012). When meta-structures are reinforced they can produce established behaviors or emergence of new structure whose actions can generate innovative organizational behavior.
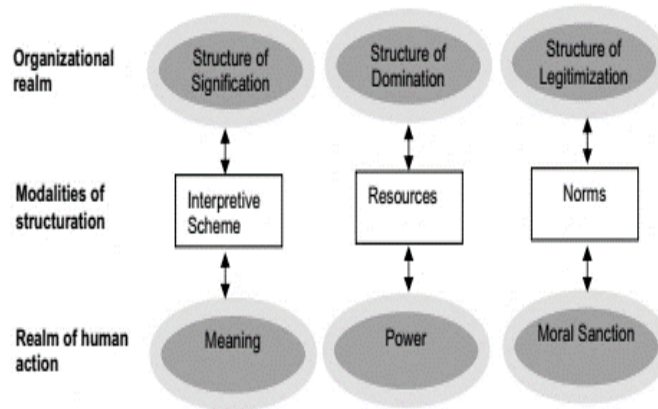
Figure 1: Human action and organizational properties interactions (Source: Giddens 1984)

Conceptual framework

The aim of this study is to investigate the influence of County human resource capacity on the adoption of E-government in county government of Kajiado. The relationship between the independent and dependent variables is shown in Figure 2
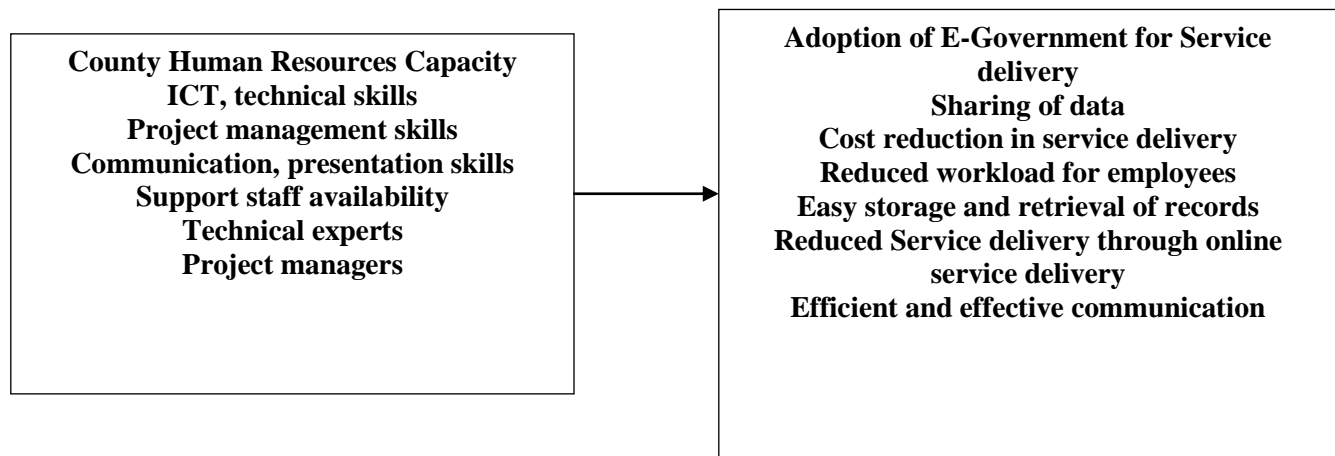

Figure 2: Conceptual Framework

Research Methodology

The study adopted mixed method approach which used pragmatic system of philosophy. According to Johnson & Onwuegbuzie (2004), in a single study the researcher can combine quantitative and qualitative methods, approaches and techniques to make logic inquiry of induction, deduction and abduction. The study also combined a correlational and cross-sectional descriptive survey research design. This enabled the study to use inferential and descriptive analysis of data for better results. The Target population for this study was employees of Kajiado County government. The total population for this study was in forty-three departments and 2660 employees working in said departments within the devolved ministries.

The sample size for the employees working under the county government of Kajiado in various departments under the ten ministries was based on Cochran (2007) formulae. The same is verified in the formula below:

$$n = \frac{Z^2 * p * q}{e^2}$$

Where;
n =refer to the desired sample size when the entire survey population is greater than 10,000.
Z =the standard normal deviate usually set at 1.96 which corresponds to the 95% confidence level.
p=Target population estimated to have a particular characteristic, 50% is normally used because it is the recommended measure if there is lack of reasonable estimate.
q =1.0 – p

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e =degree of accuracy desired in this context set at 0.05.

The sample size of 335 employees was obtained by substituting in the formula above as indicated below:

$n = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = 384$

where the above sample size was be adjusted using equation 2:

$nf = \frac{n}{1 + \frac{(n-1)}{N}}$

Where:

nf= the sample size,

n= the sample size in equation 1; and

N= is the population size

Given that the population of interest is 2660 (population size N=2660), the corrected sample size was obtained as illustrated mathematically using Krejcie and Morgan model as:

$nf = \frac{n}{1 + \frac{(n-1)}{N}}$

n= 384/ [1+ (384/2660)]

n= 335

This study adopted mixed method of sampling, that is, proportional sampling technique, simple random sampling technique, and purposive sampling technique. For this study, a proportional sampling was used to sample of the respondents in each department. From a sample of 335 respondents, one (1) respondent was purposively selected in each department who particularly deals with ICT to provide unique information on how E-government services are carried out in their department. This contributed to 43 respondents who provided information through responding to questions designed in the interview guide. On the other hand, random sampling technique was used to select 292 respondents from the departments; these respondents formed the part of respondent that answered the questions captured through the questionnaire concerning how E-government services are handled.

Table 1: Selected Samples

Ministry of Government	No. of Department	No. of employees per department	Samples
Ministry of Agriculture, Livestock, Fisheries and Cooperative	4	273	34
Ministry of Health services, Medical Services and Public Health	2	1045	132
Ministry ICT Gender and Social Services	5	20	3
Ministry of Education, Youths, Sports and Social Services	4	733	93
Ministry of Public Works, Roads and Transport, Housing and Energy	5	76	9
Ministry of Environment, Water and Irrigation	2	77	10
Ministry of Trade, Tourism, Culture & Wildlife	4	48	6
Ministry of Public Services Administration and Citizen Participation and E-government .	3	162	20
Ministry of County Treasury	5	196	24
Ministry of Land, Physical Planning and Natural Resources	7	30	4
Total	**43**	**2660**	**335**

This study used primary data, where data was collected using a structured questionnaire and an interview guide. A pilot testing was conducted using the questionnaire to 35 employees of various departments in a nearby County-Kiambu to test the reliability and validity of the questionnaire. The pilot study was conducted through random sampling. According to Creswell (2013), the pilot test should constitute 10% of the sample; therefore, the pilot test is within the recommendation. The study used both content and constructs validity to ascertain the validity of the instrument. To ensure content validity, the questionnaire was given to experts in the area of project planning and management to give their views and suggestions for improvement of the questionnaire.

Construct validity was ensured by reviewing empirical and theoretical literature in order to understand the relevant concept by constructing instruments items based on previous studies. The research instruments in this study were examined by the supervisors and other experts in research methodology.

Reliability analysis was also carried out using the Alpha coefficient (Cronbach's alpha, 1951). Higher scores generate more reliable scale. According to Nunnaly (1978), a score of 0.7 is an acceptable reliability coefficient.

Qualitative data was analyzed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories. Quantitative data was presented in tables and explanation in prose. Data collected was coded and entered into Statistical Packages for Social Scientists (SPSS Version 17.0) and analyzed using descriptive and inferential statistics. Descriptive statistics involved use of absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Inferential statistics such as correlation and regression analysis were used to establish the nature and magnitude of the relationships between the variables and to test the hypothesized relationships. The research hypotheses were tested at 95% level of confidence. Pearson's product moment correlation (r) was derived to show the nature and strength of the relationship. Coefficient of determination (R^2) was used to measure the amount of variation in the dependent variable explained by the independent variable. To obtain the effect of the independent variables on the dependent variable, simple regression analysis was used. To get the effect of human resources capacity on adoption of E-government (model 1) was used. The model was specified as follows:

E-gov= β_{0+} β_1HRC+µ……………………………………………………………. (1)
Where;
E-gov= is a composite score for E-government.
β_0 =Constant
β_1= Beta Coefficients (slope)
HRC= is a composite Score for Human Resources Capacity
u= error term

Research Findings and Discussions

The study sample size was 335 employees working in various departments in the County Government Kajiado. Out of 335 questionnaires which were distributed, 282 were duly filled and returned. Therefore, the response rate was 83.92%. According to Nulty (2011), a response rate of 75 per cent is adequate for analysis, for making conclusions and making inferences about a population. In addition, Fincham (2010) indicates that a response rate of 60% and above is acceptable for analysis. This implies that the response rate (83.92%) was adequate for analysis, drawing conclusions and reporting.

Demographic Information

The background information consisted of the respondents' age, gender, highest level of education, their level of ICT training and duration in the organization.

Distribution of Respondents' Age and Gender

The study sought to understand the background information of the respondents based on their age and gender. As a result, the respondents we asked to indicate their age as per the given age brackets and also were required to indicate their gender. Data derived was presented in Table 2.

Table 2: Distribution of Respondents by Age and Gender

Category	Frequency	Percent
Age		
18 - 24	18	6.4
25 - 34	126	44.7
35 - 44	84	29.8
45 - 55	42	14.9
55+	12	4.3
Total	**282**	**100.0**
Gender		
Male	174	61.7
Female	108	38.3
Total	**282**	**100.0**

Table 2 shows that a good number 126 (44.7%) of respondents were between 25 and 34 years of age, followed by 84 (29.8%) who were between ages 35 and 44. Ages between18 to 24 and above 55 years recorded very few respondents of 18 (6.4%) and 12 (4.3%) respectively. The findings indicate that majority of the respondents were between ages 25 and 55 years with the youth aged below 34 years forming majority. According to Venkatesh, et al. (2003) in the UTAUT theory, age of individuals moderates technology adoption, where the young individuals tend to adopt technology more and better than the older people. Most of the staff in the County government of Kajiado were youth (below 34 years), which implies that most of the staff in Kajiado County were adopters of technology. This is contrary to Njoroge, Nyonje and Gakuu (2015) findings that technology was more acceptable among the older people as compared to the younger generations. Table 2 also shows that 174 (61.7%) of the respondents were male while 108 (38.3%) were female. The findings indicate that majority of the respondents (employees working in Kajiado County government) were male. This showed that there was a relatively skewed distribution in favour of men while the female formed the minority. According to UTAUT theory, gender moderates the adoption of technology. While performance expectancy influences behavioral intention to adopt a technology among men, effort expectancy influences behavioral intention to adoption a technology among women. Nonetheless, men are considered in the UTAUT theory as better and easier adopters of technology that women. This is in agreement with Njoroge, Nyonje and Gakuu (2015) findings that men were better adopters of biogas technology than women.

Respondents' Highest Level of Education and ICT Training

The study sought to determine the level of education and ICT training of the respondents. As such the respondents were requested to indicate their highest level of education and ICT training based on the stated categories in each case. The data driven was as presented in Table 3.

Table 3: Respondents' Highest Level of Education and ICT Training

Category	Frequency	Percent
Highest level of education		
Post University	42	14.9
University	135	47.9
Higher National Diploma	27	9.6
Diploma	57	20.2
Certificate	21	7.4
Total	**282**	**100.0**
level of ICT training		
Degree	33	11.7
Diploma in ICT	60	21.3
Certificate Proficiency packages	168	59.6
Others (specify)	21	7.4
Total	**282**	**100.0**

Table 3 shows that a good number of the respondents 135 (47.9%) had undergraduate degrees, followed by 57 (20.2%) with diploma certificates, and 42 (14.9%) with post graduate degrees. In addition, 27 (9.6%) had higher National diploma certificates and 21 (7.4%) had other academic certificates. The findings indicate that majority of the employees had undergraduate and post graduate degrees. More educated individuals are considered to be better adopters of technology as compared to the less educated. Differences in personality traits including level of education determine the way individuals behave, think and make decisions regarding adoption of technology. These findings agree with Njoroge, Nyonje and Gakuu (2015) findings that the more educated people are the better they adopt technology. This implies that the employees in the County government of Kajiado were easier adopters of technology as most of them had at least an undergraduate degree. Table 3 shows that majority of the respondents, 168 (59.6%), had proficiency package certificates, followed by 60 (21.3%) with diploma certificates in ICT and 33 (11.7%) with ICT degrees. In addition, 21 (7.4%) of the respondents had other forms of training on Information and Communication Technology. The findings indicate that majority of the respondents in this study had proficiency package certificates in ICT. As indicated by Davis (1989) in the Technology Acceptance Model, skills and knowledge on perceived usefulness and perceived ease of use, which is influenced by Level of ICT training, influence behavioral intention to adopt or not to adopt technology.

This implies that most of the staff working in the County government of Kajiado was adopters of technology.

Respondents' Department of Work and Duration

The study sought to establish the departments in which the respondents were working as well as the duration of time they had been working in their organization's departments. Therefore, the respondents were requested to indicate their departments as well as the duration of time they had working in their organization as per the categories presented. The data driven was as presented in Table 4.

Table 4: Respondents Department or Work and Duration

Category	Frequency	Per cent
Department of work		
Administration	84	29.8
Procurement	15	5.3
ICT	6	2.1
Finance	45	16.0
HR	3	1.1
Others (Specify)	129	45.7
Total	**282**	**100.0**
Duration in the organization		
Less than 1 year	12	4.3
I year	12	4.3
2 years	63	22.3
3 years	42	14.9
more than 4 years	153	54.3
Total	**282**	**100.0**

Table 4 shows that a good number of the respondents 129 (45.7%) were working in other departments other than the ones indicated in the study, followed by 84 (29.8%) working in administration department, 45 (16.0%) working in the department of finance, 15 (5.3%) working in the procurement department. ICT department recorded very few respondents of 6 (2.1%) and human resource department recorded 3 (1.1%). The findings indicated that less than half of the respondents were working in administration, procurement, information and communication technology, finance and human resource.

Table 4 shows that majority of the respondents 153(54.3%) had worked in their departments for more than 4 years, followed by 63 (22.3%) who had worked for 2 years, 42 (14.9%) who had worked for 3 years, 12 (4.3%) indicated for one year and the same percent indicated for a period less than one year. The findings show that majority of the respondents in this study had been working in the County Government of Kajiado for a period of four years.

Adoption of E-government for Service Delivery

The study sought to obtain the extent of implementation of E-government in the provision of services in various ministries. As such, the respondents were requested to indicate the extent to which the implementation of E-government affected provision of services in their respective ministries. The data driven was as presented in Table 5.

Table 5: Adoption of E-government for Service Delivery

	Frequency	Percent
Very little extent	57	20.2
little extent	18	6.4
Moderate	63	22.3
Great extent	96	34.0
Very great extent	48	17.0
Total	**282**	**100.0**

Table 5 shows that a good number of the respondents 96 (34%) indicated that implementation of E-government affected provision of services in their ministries to great extent, followed 57 (20.2%) with very little extent, 48 (17%) with very great extent and 18 (6.4%) with little extent.

The findings show that the implementation of E-government affected provision of services in various ministries to great extent and very great extent.

Influence of Adoption of E-government   for Service Delivery

The study sought to determine influence of Adoption of E-government on Service Delivery in the County government of Kajiado. As such, the respondents were requested to indicate the influence of E-government adoption on service delivery in the County. Table 6 presents the results.

Table 6: Influence of Adoption of E-government for Service Delivery

	Mean	Std. Deviation
E-government has reduced cost of delivering services	3.776	1.104
Major function we do in our ministry are done electronically	3.712	1.079
This ministry I work in has an electronic payroll system that's pays salaries and keeps records for tax information	4.074	1.134
The county government has established an e-learning platform that enable staff access information in regards to training and learning opportunities	2.914	1.262
Management of records and sharing of information has improved immensely since implementation of E-government systems	3.648	1.100
Time taken to process any transaction has been reduced as the government has implemented E-government in service delivery	3.585	1.116
Am able to store and retrieve records when delivering services	3.819	1.011
Through E-government suppliers can bid for various government tenders electronically	3.744	1.140
There is a website developed that publishes information and gives the public access to different services	3.329	1.334
Since introduction of E-government, the nature of my work has gradually moved from handling a lot of paper to being paperless	3.606	1.152
Electronic communication has improved service delivery	3.946	0.951
Composite	**3.650**	**1.125**

Table 6 shows that the respondents agreed with a mean of 4.074 and a standard deviation of 1.134 that their ministries have electronic payroll system that pays salaries and keeps records for tax information. This implies that the County government of Kajiado had adopted electronic payroll system in payment of salaries and record keeping. They also agreed with a mean of 3.946 and a standard deviation of 0.951 that electronic communication has improved service delivery. This implies that the County government of Kajiado had adopted electronic communication, which is an important component of E-government. These findings agree with Liikanen (2003) argument that E-government entails computerizing the back and front office using ICT tools as well as modifying organization internal operation processes of the public sector. Moreover, the respondents agreed that they were able to store and retrieve records when delivering services as shown by a mean of 3.819 and a standard deviation of 1.011. The adoption of electronic record keeping enabled easier storage and retrieval of records thus improving service delivery in the County government of Kajiado.

With a mean of 3.776 and a standard deviation of 1.104 the respondents agreed that E-government has reduced cost of delivering services. The respondents further agreed with a mean of 3.744 and a standard deviation of 1.140 that through E-government suppliers can bid for various government tenders electronically. This implies that the adoption of E-government had led to an improvement in the tendering process and in the reduction of cost in service delivery. Further, the respondents agreed that major function in their ministries were done electronically as shown by a mean of 3.712 and a standard deviation of 1.079. With a mean of 3.648 and a standard deviation of 1.100 the respondents agreed that management of records and sharing of information has improved immensely since implementation of E-government systems. Besides enabling easier storage and retrieval of information, electronic record keeping enabled easier sharing of information in the County government of Kajiado.

They also agreed that since the introduction of E-government, the nature of their work has gradually moved from handling a lot of paper to being paperless as shown by a mean of 3.606 and a standard deviation of 1.152. This implies that the adoption of E-government led to a reduction in the utilization of paper.

These findings are in line with Huang (2010) argument that E-government involves office automation through online services and transactions to improve government services.

Further, they agreed that time taken to process any transaction has been reduced as the government has implemented E-government in service delivery as shown by a mean of 3.585 and a standard deviation of 1.116. This implies that the adoption of E-government in the County government of Kajiado led to timely delivery of services. These findings concur with Huang (2010) argument that by use of E-government, the government is able to increase its efficiency and offer better quality services.

However, they moderately agreed that there was a website developed that published information and gave the public access to different services as shown by a mean of 3.329 and a standard deviation of 1.334. These findings agree with Layne and Lee (2001) argument that many governments around the world adopted E-government solutions ranging from simple website, one-way communication, two-way communication and integrated websites with online transactions. Finally, the moderately agreed that the County government has established an e-learning platform that enable staff access information with regards to training and learning opportunities as shown by a mean of 2.914 and a standard deviation of 1.262. This implies that the establishment of e-learning platform that enable staff access information with regards to training and learning opportunities was not as effective as it should be.

Human Resource Capacity and Adoption of E-government

The objective of this study was to establish the influence of Human Resource Capacity on the adoption of E-government in the County Government of Kajiado.

Extent of Human Resource Capacity Effect on adoption of E-government

The study sought to establish the extent to which human resource affects the adoption of E-government. As such, the participants were asked to indicate the extent in which human resource influenced the adoption of E-government. The data driven was as presented in Table 7.

Table 7: Extent of Human Resource Capacity Effect on adoption of E-government

	Frequency	Percent
No extent	51	18.1
Low extent	60	21.3
Moderate extent	90	31.9
Great extent	51	18.1
Very great extent	30	10.6
Total	**282**	**100.0**

Table 7 shows that a good number of the respondents 90 (31.9%) indicated that human resource influenced adoption of E-government to a great extent, followed by 60 (21.3%) with a low extent, 51 (18.1%) with a great extent, the same number 51 (18.1%) with no extent at all and 30 (10.6%) with a very great extent. The findings indicated that human resource capacity influences the adoption of E-government in the County Government of Kajiado to a moderate extent. These findings are contrary to Og'ang'a (2012) findings that ICT human resource capacity affects E-government to a great extent. This can be explained by the fact that human resource and personnel are the ones that deal with the E-government system and hence if not well trained they cannot be in a position to deliver services efficiently using the system.

Adequate Human Resource, Implementation and Adoption of ICT

The study sought to determine the adequacy of Adequate Human Resource for the implementation of E-government. As a result, the respondents were also asked to indicate whether the County has adequate human resources to implement and adopt necessary ICT technologies. The results were as presented in Table 8.

Table 8: Adequate Human Resource, Implementation and Adoption of ICT

	Frequency	Percent
Yes	147	52.1
No	135	47.9
Total	282	100.0

Table 8 shows that majority of the respondents 147 (52.1%) indicated that the County has adequate human resources to implement and adopt necessary Information Communication Technology while 135 (47.9%) indicated that the county has inadequate human resources to implement and adopt necessary ICT technology. The findings show that Kajiado County Government has adequate human resources to implement and adopt Information Communication Technology. Og'ang'a (2012) indicates that staff adequacy influences the duration of time taken to implement technological projects. The fewer the staff the longer it takes to implement a project and the higher the number of staffs the less time it takes to implement a project.

Influence of Aspects of Human Resource on Adoption of E-government

The study sought to establish the effect of human resource on the adoption of E-government in service delivery in the County government of Kajiado. As a result, the respondents were also asked to rate the extent to which the various statements on human resource aspects influenced the adoption of E-government. The results were as presented in Table 9.

Table 9: Influence of Aspects of Human Resource on Adoption of E-government

	Mean	Std. Deviation
High level of personnel IT skills can have a positive impact on IT innovation adoption in county government	4.095	1.196
The level of training required for users to upgrade their skills and learn how to adopt and use new technologies may be an obstacle for technology application	3.691	1.196
Experienced employees are keen on adopting innovative solutions in support of E-government	3.776	1.055
The burden to acquire skills to successfully adopt the innovation solutions causes barriers to adoption of E-government systems	3.414	1.226
Training of human resource on ICT skills is essential in facilitating E-government adoption	4.393	.971
Knowledge and skills for implementing and applying innovations increase the intention to use a technology and accelerates the adoption process	4.159	.983
Training of human resource is important in facilitating the process of integrating E-government with current methods and procedures in the county government	4.372	.851
Existence of knowledgeable Management who support the use of IT is essential in achieving organization objectives	4.127	1.171
Lack of training of employees on Information Technologies; results in resistance to change, resistance in use and underutilization of the technology implemented	4.085	1.147
Most of the IT experts are increasingly leaving their jobs in the government to work in the private sector, due to the better offers they are getting	3.595	1.259
Composite	**3.970**	**1.105**

A shown in Table 9, the respondents agreed on most of the likert items on human resource and adoption of E-government with a mean of 3.970 and a standard deviation of 1.105. This implies that human resource capacity affects the adoption of E-government in the County government of Kajiado. In addition, the respondents agreed with a mean of 4.393 and a standard deviation of 0.971 that training of human resource on ICT skills was essential in facilitating E-government adoption. These findings agree with Kandiri (2006) findings that the realization of the full potential of ICTs require training for relevant skills to build individual and institutional capacity for users and all beneficiaries. In addition, with a mean of 4.372 and a standard deviation of 0.851 they agreed that training of human resource was important in facilitating the process of integrating E-government with current methods and procedures in the county government. These findings are in line with Khanh (2014) argument that training is important in facilitating the process of integrating new tools with current methods and procedures. The respondents also agreed that knowledge and skills for implementing and applying innovations increased the intention to use technology and accelerated the adoption process as shown by a mean of 4.372 and a standard deviation of 0.851. These findings concur with Sargent et al. (2012) findings that knowledge and skills for implementing and applying innovation increase the intention to use technological innovations and accelerates the adoption process.

Moreover, with a mean of 4.127 and a standard deviation of 1.171, the employees agreed that there was existence of knowledgeable management which supported the use of IT and it was essential in achievement of organization objectives.

The employees agreed that lack of training of employees on information technologies; resulted in resistance to change as shown by a mean of 4.085 and a standard deviation of 1.147. Further, with a mean of 3.776 and a standard deviation of 1.055 the respondents agreed that experienced employees were keen on adopting innovative solutions in support of E-government. As shown by a mean of 3.595 and a standard deviation of 1.259 they agreed that most of the IT experts are increasingly leaving their jobs in the government to work in the private sector, due to the better offers they were getting. These findings agree with Ebrahim and Irani (2005) argument that IT experts are increasingly leaving their jobs in the government to work in the private sector, due to the better offers they are getting. The government should consider better offers to attract them. However, they moderately agreed that the burden to acquire skills to successfully adopt the innovation solutions was a barrier to adoption of E-government systems as shown by a mean of 3.414 and a standard deviation of 1.226. These findings concur with Borhani (2016) that the level of training required for users to upgrade their skills and to learn how to adopt and use new technologies may be an obstacle for technology application.

The key informants also highlighted that they are understaffed which is affecting services delivery but the system were helping in making the work easier. In addition, some key informants felt that there was a mixture of information technology literate and illiterate people in the County government.

There is a good mix of computer literate and those who are illiterate, not all are ICT expert but have basic knowledge. They have uniformity in report analysis but still they have challenges. Junior staffs are better placed and willing to learn K02

Testing Hypotheses

The study sought to establish the influence of human resource capacity on adoption of E-government in the county government of Kajiado. The hypotheses were as follows; $H1_1$ Human Resource Capacity has no significant influence on the adoption of E-government in the county government of Kajiado. The hypothesis was tested by use of correlation analysis and regression analysis. Using 95 per cent confidence interval, the significance level was 0.05. Therefore, the alternative hypotheses were accepted when the p-value was less than the significance level (0.05).

Correlation Analysis for Human Resource Capacity and adoption of E-government

The study sought to the existence of an association between human resource capacity and adoption of E-government in the County government of Kajiado. A correlation analysis was used. The results were as presented in Table 10.

Table 10: Correlation Coefficients for Human Resource Capacity and adoption of E-government

		Adoption of E-government for service delivery	Human Resource
Adoption of E-government for service delivery	Pearson Correlation	1	.595[**]
	Sig. (2-tailed)		.000
	N	282	282
Human Resource	Pearson Correlation	.595[**]	1
	Sig. (2-tailed)	.000	
	N	282	282
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 10 the results show that there is a strong positive association between human resource capacity and adoption of E-government in the County government of Kajiado (r=0.595). The relationship was significant because the p-value (0.000) was less than the alpha value (0.05, at 95% confidence interval). In addition, the association between human resource capacity and adoption of E-government in the County government of Kajiado was positive. The findings show that there is a strong positive and significant association between human resource capacity and adoption of E-government in the County government of Kajiado.

Therefore, we can accept the alternative hypothesis indicating that "human resource capacity has a significant influence on the adoption of E-government in the county government of Kajiado." These findings are in line with chwelos et al. (2001) argument that high level of personnel IT skills can have a positive impact in adoption of E-government in public organizations.

This is supported by the key informants, who indicated that people have been trained but not all-round kind of training, which affected adoption of E-government. They also indicated that literacy and the old age affect adoption of E-government in the County. However, the also argued that at least the recruitment process considers an ICT trained graduates.

Illiteracy level among the staff is high and this affects the general operation on using the information technology. Also, most of the staff have trained on their own, but at least the government is showing some improvement in the training K01

Regression Analysis for Human Resource and Adoption of E-government

The R-Squared was used to indicate variation in adoption of E-government that can be explained human resource. The results were as presented in Table 11.

Table 11: Model Summary for Human Resource and Adoption of E-government

Model	R	R Squared	Adjusted R Square	Std. Error of the Estimate
1	.595	.355	.352	.568

The R-squared for the relationship between human resource capacity and adoption of E-government was 0.355, implying that the human resource capacity explains 35.5% of the adoption of E-government in the County Government of Kajiado. This implies that human resource capacity plays a significant role in the adoption of E-government in the County Government of Kajiado. These findings agree with Ziemba, Papaj and Zelazny (2015) findings that the competence of the employees influences the implementation of E-government. Analysis of variance was used to determine whether the model the model was a good fit for the data in determining the influence of human resource on the adoption of E-government. The results were as presented in Table 12.

Table 12: ANOVA for Human Resource and Adoption of E-government

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	49.762	1	49.762	153.825	.000[b]
1	Residual	90.579	280	.323		
	Total	140.341	281			

Table 12 shows that the significance level (0.05) was greater than the p-value (0.000) and the F-calculated (153.825) was more than the F-critical (3.8415). This implies that the regression model could be used in predicting the influence of human resource capacity on the adoption of E-government in Kajiado County Government.

Table 13 shows the regression coefficients for the influence of human resource on the adoption of E-government in the County government of Kajiado.

Table 13: Coefficients for Human Resource and Adoption of E-government

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.067	.213		5.012	.000
	Human Resource	.677	.055	.595	12.403	.000

The results in Table 13 indicated that human resource capacity has a positive influence on adoption of E-government in the county government of Kajiado as shown by regression coefficient (0.677) and a p-value (0.000). The findings indicate that an improvement in human resource capacity leads to an improvement in the adoption of E-government in the county government of Kajiado.

Conclusions and Recommendations

The study concludes human resource capacity has a significant influence on the adoption of E-government in the County Government of Kajiado. The study found that there was high ICT illiteracy level in the county and lack of training of employees on information technologies; resulted in resistance to change. Thus, the study recommends that the county government of Kajiado should develop frequent training programmes for all the employees in the County.

The training programmes should be preceded by training needs analysis to identify the training needs of the employees in regard to the use of ICT. The study also found that IT experts are increasingly leaving their jobs in the government to work in the private sector, due to the better offers they were getting. This study therefore recommends that the County government of Kajiado should make use of financial and non-financial rewards to motivate the employees. In regard to financial rewards, the County government should offer more competitive salaries to the employees.

Suggestions for Further Research

The study was delimited to Kajiado County, which is one of the counties in Kenya. All county governments in Kenya are expected to use E-government. Different counties in Kenya have different experiences in the adoption of E-government due to differences in resources, community cultures, and literacy levels among other factors. Therefore, similar studies should be conducted in other county governments of Kenya on the influence of human resource capacity on the adoption of E-government. The study was limited human resource capacity, which explains 35.5% of the adoption of E-government. Therefore, further studies should be conducted on other factors influencing adoption of E-government in County governments of Kenya. The government of Kenya has developed various policies regarding the adoption of E-government. These policies include ICT policy. Therefore, further studies should be conducted on the influence of government policies on the adoption of adoption of E-government in County governments of Kenya. The study was also carried out in one County. More counties can be included in a study for bench marking and comparison.

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