

# EFFECT OF ICT FACILITIES AND PERCEIVED BENEFITS ON SERVICE DELIVERY IN THE COUNTY GOVERNMENT OF MACHAKOS, KENYA

<sup>1</sup>MBITHI BONIFACE KIOKO, <sup>2</sup>DR. SAMSON NYAN'GAU,  
<sup>3</sup>DR. WAWERU KAMAKU

<sup>1,2,3</sup>JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, NAIROBI, KENYA

---

**Abstract:** Modern Information Communication Technology is a significant strategic tool for improving public sector service delivery, offering benefits of greater efficiencies and effectiveness in government operations, improved communication and coordination across organisational boundaries and levels of government, and greater transparency and accountability in government functions. This study sought to determine the perceived benefits impelling the use of ICT in improving public service delivery. The study also sought to establish the extent to which ICT facilities acquired are applied in improving public service delivery. The target population was 800 employees from the County government departments. Stratified random sampling was used, based on the current departments the strata were formed. Respondents were identified by simple random sampling. The sample size was 89 respondents. The primary data was collected using questionnaires. The data was processed and analyzed using descriptive statistics including frequencies, percentage, mean, and standard deviation. Data was presented using tables, pie charts and bar charts. Correlation analysis was employed to determine whether there existed a relationship or association between the variables. Multiple linear regression model was used to test the relationship between independent variables and dependent variables of the study. The results of correlation and regression analysis showed that perceived benefits of ICT and ICT facilities had a positive and significant effect on service delivery at the Machakos County Government. Based on this finding the study concluded that that information communication technology played a significant role in ensuring delivery of quality services in public sector. The study concluded that ICT facilities made information sharing and activities coordination simpler, effective and efficient between various departments and between employees. This efficient flow of information and communication ensured that turnaround time was reduced, employees moved less and service delivery was improved. The study recommended that to ensure high quality service delivery, all the departmental heads needed to communicate the benefits of ICT knowledge in carrying the county responsibilities to all the employees in their department to influence them to acquire ICT skills. The study recommended that top leadership at the county government of Machakos needed to ensure that all the necessary ICT facilities were made available to employees at various levels to facilitate their service delivery.

**Keywords:** Accountability, E-government, ICT Facilities, Information Communication Technology, Public Service, Transparency.

---

## I. INTRODUCTION

Information and Communications Technologies (ICTs) is an umbrella term that includes any communication device or application, as well as the various services and applications associated with them. It is generally thought that the importance of Information Communication Technology is in ability to create greater access to information and

communication. Information Communication Technology tools/facilities can be used to find, explore, analyze, exchange and present information. It gives users speedy access to ideas and experiences from a wide range of people, communities and cultures. It is important to understand the full potential of deploying Information Communication Technology to improve the delivery of services. It is so important that the United Nations, through its UN Development Programme keenly emphasizes ICTs for Development as a means of filling the gap between technological “have” and “have not” areas (Holder, 2012). The role of ICT in public service delivery is accordingly being emphasized to enable effective working together of government systems. Information and communication technologies are fundamental and essential infrastructure for poverty reduction, high productivity, economic growth, improved accountability and governance (World Bank, 2013). It may therefore be that within the next few years ICTs in the public sector will transform both the way in which public services are delivered and the fundamental relationship between governments, the community and citizens.

The rapid advancement in the field of ICT and the resultant explosive growth of information services sector has radically changed the world's economic and social worldview. ICT has changed and created new ways of development, employment, productivity, efficiency and enhanced service delivery. Over the recent past, Kenya has been focusing on transforming herself into a knowledge based economy that relies on the production, distribution, and use of information technologies to enhance service delivery. Information Communication Technology has played a fundamental role both as an innovative economic sector and a catalyst for other sectors. The Government identified ICT as a key enabler to the achievement of Vision 2030 goals and aspirations that will transform Kenya into knowledge and information based economy by enabling access to quality, affordable and reliable ICT services in the country (Enterprise ICT Survey, 2016). Kenya's efforts to provide public services using Information Communication Technologies have been recognized and have developed relatively advanced ICT-government service delivery capabilities. In addition, according to the United Nations Survey (2016) on e-government readiness, Kenya was ranked position 119 out of 193 member states and position 10 in Africa. However, it seems that the level of e-government development in Kenya is still low as well as within the County governments.

The fifth Connected Kenya Conference at White sands, Mombasa brought together several cabinet secretaries, governors, members of the parliamentary select committee on Energy and Information Communication Technology to discuss how County governments can use ICT to deliver quality and reliable service to citizens. (OECD, 2007) progression in Information Communication Technology has enabled service delivery to bring together different platforms of data operations. Information Communication Technology is increasingly used as a strategic tool to more efficiently support any Government's priorities and program delivery. The motivation of this study was, to find out if the County government of Machakos is improving its public service delivery using Information and Communication Technologies (ICTs). A key measure of good governance is through the public sector that is in charge of delivering transparent and quality services. Traditionally, Information Communication Technology is known to improve service delivery in both public and private sectors (Aichholzer & Schmutzer, 2000). Dabholkar and Bagozzi (2002) argues that technology has had a remarkable influence on the growth of service delivery options. Toshifumi and Himanshu (2004) have pointed out that government, perhaps more than any other organization, can benefit from the efficiencies and improved service that stem from digital processes. Based on 2013 European Union data, those who use online public services are usually highly satisfied with the experience (75%). They appreciate most frequently the usefulness of the information (87%), the ease of finding it (84%) and the ease of using online services (79%) (European Union, 2015).

Chen (2003) argues that there is an upward indication that the public sector has been investing in Information Communication Technology. The purpose of this is to improve departmental coordination, management within as well as the services delivered to citizens through creative use of Information Communication Technology facilities. Gikenye (2014) argues that Information Communication Technology has the potential to transform businesses, reliable and efficient exchange of large amounts of information; reducing transaction costs; improving information gathering and dissemination, inventory and quality control; and improving the efficiency and customer services of organizations and businesses. Outa (2006) in his study “Mainstreaming ICT for service delivery” sought to assess the level of satisfaction with electronic delivery of services that users receive from the government. A 25% of the respondents indicated that they obtained desired information and services from government institutions online while 75% agreed that they received the needed information and services from government manually. The results confirmed the low level of use of ICT components. Still, there is a struggle of making governments accustomed to the use of ICT systems (Thomas *et al.*, 2010).

The World Bank set aside Sh17.3 billion to be used in funding ICT projects in 47 counties through the Kenya Transparency and Communications Infrastructure Project (KTCIP). A roadmap for the project which is managed by the ICT Authority has already been laid. Its purpose is towards improving service delivery, strengthening internal processes in the counties and providing open data from each region through technology (Daily Nation, 2014). Machakos County government is a beneficiary of these initiatives. With this enormous investment within the counties, it is expected that the use of ICT in delivering services to citizens will be made easier and a reality hence increasing the use of ICT tools and applications, as well as leading to transformational shifts in public policy, processes and functions. In the hope to respond to meet these new demands and expectations, the County government has embraced ICTs to revitalize service delivery in the public service. Nevertheless, there are still gaps in information processing which include low ICT skill levels among staff, inappropriate ICT enterprise applications and lack of enough ICT facilities.

Machakos County government has already implemented ICT for improved public service delivery for the last six years since the launch of devolution. However, there is little literature concerning the effect of ICT on service delivery in the County. There is a considerable gap between what can be done by using ICTs and what has been achieved. Therefore, the need to fill this knowledge gap and, this research was designed to determine the effect of Information Communication Technology (ICT) facilities and the perceived benefits of ICT on service delivery at Machakos County government.

## II. METHODOLOGY

This study adopted a descriptive research design to establish the effects of ICT facilities and perceived benefits of ICT on service delivery in the County Government of Machakos. The descriptive survey research design was suitable because the researcher collected data and reported the way the situation was without manipulating any variables. This research employed both qualitative and quantitative approaches. The study was conducted in Machakos County government in Kenya. The study targeted all the 800 employees working in Machakos County who held key information regarding public service delivery within the County (Machakos County Databank, 2015). The 800 employees were from top level management and middle level management. Table 1 below shows the target population.

**Table 1: Target population**

<b>Group</b>	<b>Target population</b>	<b>Percentage (%)</b>
Public service	50	6.67
Agriculture	70	8.48
Trade	65	7.88
Transport and roads	40	5.45
Water and irrigation	75	9.1
Health	90	10.9
Decentralized units	60	7.27
Education	100	12.73
Tourism and culture	60	7.27
Lands and urban development	80	9.7
Finance and revenue	110	14.55
<b>Total</b>	<b>800</b>	<b>100</b>

The sampling frame consisted of a list of top and middle level management employees in the eleven departments of Public Service, Trade, Health, Finance and Revenue, Agriculture and Decentralized Units, Lands, Tourism, Transport, Water and Education. Stratified sampling technique was used in the study to minimize the fear that certain groups (departments) within the population may be under-represented. According to Westfall (2009), stratified sampling is used when representatives from each subgroup within the population need to be represented in the sample. The strata to be used were based on the current departments within the County. Simple random sampling was used to select representative employees from the departments. This gave all subjects an equal chance of being included in the sample. A sample size of 89 respondents was selected, which was above 10% of the target population. Kothari (2011) explains that a sample size of 10% is sufficient to carry out statistical inferences.

Questionnaires were administered to the respondents to collect data. Respondents were asked to indicate, against each statement, the extent to which they agree or disagree on a five-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The respondents chose one option that best aligned with their views and this helped in interpretation on how ICT facilities and perceived benefits of ICT influenced service delivery. Each of the two variables was subjected to five statements. The questionnaire comprised of open and closed ended questions. The close-ended questions provided more structured to facilitate tangible recommendations. Primary data for the study was collected by administering the specially designed questionnaire to a sample of 89 employees of Machakos County. Respondents were identified by simple random sampling in the 11 departments. The questionnaires were completed in the presence of the researcher or the research assistant. The respondents who felt they could complete their questionnaires during their free time were allowed to do so and then the questionnaires collected later. A pilot study was conducted to test the reliability and validity of the research. According to Mugenda & Mugenda (2012) successful pilot study uses 1% to 10% of the actual sample size. Therefore the pilot study used 10% (9) of the sample size. These 9 respondents were not included in the main study. The pilot test ensured that the items in the questionnaire were stated clearly and is having the same meaning to all the respondents. Improvement was done accordingly. To measure the reliability of the data collection instruments an internal consistency technique using Cronbach's alpha will be applied to the gathered data (Mugenda & Mugenda, 2012).

This measures internal consistency among a group of items combined to form a single scale. Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability and an alpha coefficient of 0.70 or higher indicates that the gathered data is reliable. For validity of the research instrument, the questionnaire was reviewed by the supervisor and experts in this field to ensure it's valid. Also during the pilot study, the researcher discussed with three employees in the public service department on the content of the questionnaire and whether it is was well constituted. Amendments were done where necessary. Following procedures and design techniques also was used to reduce error to ensure internal, construct and statistical reliability and to maximize validity. The quantitative primary data was analyzed using descriptive statistics including frequencies, percentage, mean and standard deviation using the Statistical Package for Social Science version 23 (SPSS) software. The study mainly used tables, bar graphs and pie-charts in analysis. This allowed a better interpretation, conclusion and recommendation.

Correlation analysis was employed to determine whether there exists a relationship or association between the variables. According to Mugenda and Mugenda (2012), correlation technique is used to analyze the degree of relationship between the variables. The multiple regression model was used to develop an equation showing how the variables are related in this study. Anderson, Sweeney and Williams (2011) define multiple regression analysis as the study of how a dependent variable  $y$  is related to two or more independent variables. Multiple regression analysis was conducted to test the overall effect of all the independent variables on the dependent variable. The multiple linear regression equation that was used in the model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

$Y$  = Service Delivery

$\beta_0$  = Constant Term,

$X_1$  = Perceived Benefits of ICT use

$X_2$  = Availability of ICT Facilities

In the model,  $\beta_0$  = was the constant term while the coefficients  $\beta_i = 1, \dots, 2$  were used to measure the sensitivity of the dependent variable ( $Y$ ) to unit change in the predictor variables  $X_1$  and  $X_2$ .  $\varepsilon$  was the error term which was used to capture the unexplainable variations in the model.

### III. FINDINGS

A total of 89 questionnaires were administered out which 62 questionnaires were dully filled and returned which represented a response rate of 70%. This response rate was adequate according to scholars such as Fincham (2008) who argued that a response rate of 60% was adequate for a descriptive study. Cronbach's alpha was calculated in a bid to

**International Journal of Novel Research in Computer Science and Software Engineering**

Vol. 5, Issue 3, pp: (7-22), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

measure the reliability of the scale used in the questionnaire. The results presented in Table 2 below shows that all the variables were reliable since their Cronbach’s alpha was above 0.7 which was used as a cut-off of reliability for the study. The reliability results confirmed that the scale used to measure the variables was reliable. This implies that the research instruments were reliable and could be used to collect data for the study. Therefore, all the items in the questionnaire were maintained in the final survey.

**Table 2: Reliability test results**

	Number of Items	Cronbach Alpha	Remark
Perceived Benefits of ICT Use	5	0.891	Accepted
ICT Facilities Availability	5	0.871	Accepted
Service Delivery	5	0.723	Accepted

Content validity was done by designing the questionnaires according to the study variables and their respective indicators of measurement, the study further used reviews from the supervisors to ensure content validity. Construct validity on the other hand was achieved through restricting the questions to the conceptualizations of the variables and ensuring that the indicators of a variable fall within the same construct. The study used percentages, mean and standard deviation as descriptive statistics. The first objective of the study sought to determine the perceived benefits impelling the use of ICT in improving service delivery in Machakos County government. The perceived benefits the study focused on transparency, accountability and efficiency. The findings are presented in table 3 below.

**Table 3: Descriptive Results for Perceived Benefits of ICT**

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std Dev
ICT has helped me perform my duties with increased openness in delivering of services	6.5%	6.5%	4.8%	30.6%	51.6%	4.15	1.19
ICT ensures reduced operation cost in service delivery	3.2%	6.5%	3.2%	58.1%	29.0%	4.03	0.94
ICT allows increased accessibility and availability of information and hence more collaborative inter-departmental relationship	0.0%	6.5%	6.5%	43.5%	43.5%	4.24	0.84
There is timely and accurate response when ICT is used and this has eased working procedures	6.5%	1.6%	12.9%	32.3%	46.8%	4.11	1.12
ICT allows easier and cheaper communication therefore offering increased convenience and reduced time for service delivery	12.9%	8.1%	3.2%	29.0%	46.8%	3.89	1.42

In table 3, the study sought to establish whether ICT had helped respondents perform their duties with increased openness in delivering of services, the findings showed that 30.6% and 51.6% of the respondents agreed and strongly agreed with the statement respectively. The statement had a mean response of 4.15 and a standard deviation of 1.19 confirming that majority of the respondents agreed and that the respondent varied slightly from the mean. The study further sought to establish whether ICT ensures reduced operation cost in service delivery, the finding established that 58.1% and 29.0% agreed and strongly agreed with the statement. The mean response for this statement was 4.03 implying that majority of the respondents agreed. The findings further indicated that a combined 87% of the respondents agreed and strongly agreed that ICT allows increased accessibility and availability of information and hence more collaborative inter-departmental relationship. Niamh (2010) agreed with this statement that e-government is useful to governments because it helps to reduce operating cost, better distribution of information and efficiency delivery of services.

On whether there was timely and accurate response when ICT was used and this had eased working procedures, the research findings showed that 46.8% strongly agreed, 32.3% agreed, those who disagreed were less than 10% of the respondents. The study finally sought to establish whether ICT allowed easier and cheaper communication therefore



offering increased convenience and reduced time for service delivery, the study results showed that 46.8% and 29.0% strongly agreed and agreed with the statement. The mean of 3.89 also confirmed that majority of the respondents agreed. The findings in this section implied that majority of the respondents agreed that ICT had many benefits in the work place that ensured that there is quality service delivery in the county government of Machakos. The findings of this study concur with Otieno and Omwenga (2015) who found that ICT is an instrument for transparency and accountability as far as public sector responsibilities are concerned. The results further concur with Rainford (2009) who mentioned, "ICT is seen as an important tool for improving delivery of government services, making government more transparent and accountable, broadening people participation, facilitating the sharing of information and knowledge". The second objective of the study sought to establish the extent to which ICT facilities acquired are applied in improving public service delivery in Machakos County. The descriptive findings are presented in Table 4 and Table 5 below.

**Table 4: Information Communication Technology Facilities**

Category	Option	Frequency	Percent (%)
Do you have access to ICT devices (e.g. computer, phones, printers) in your office	No	10	16.1
	Yes	52	83.9
	<b>Total</b>	<b>62</b>	<b>100</b>
In your own opinion do you believe there is enough ICT equipment and devices	No	12	19.4
	Yes	50	80.6
	<b>Total</b>	<b>62</b>	<b>100</b>

The study sought to establish from the respondents whether they had access to ICT facilities in their departments and whether the ICT equipment and devices were enough. The findings presented in table 4 showed that majority of the respondents, 83.9% agreed that they had access to enough ICT equipment which are necessary to deliver services to the public and 80.6% agreeing that the County has provided enough ICT facilities which aids them deliver services. This is in accord with Egbule (2016) that ICT facilities make the employees of organizations to perform their duties better in an organized and coordinated manner within the system.

**Table 5: Descriptive Results for ICT Facilities**

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std Dev
There is presence of website and email servers in this department that allows us to communicate easily through our office emails	8.1%	6.5%	11.3%	32.3%	41.9%	3.94	1.24
There exist online based services that require access to Internet resulting in easy access and multiple access points (allowing online transactions)	9.7%	8.1%	8.1%	45.2%	29.0%	3.76	1.24
ICT has allowed data management, where data is stored in databases enabling real-time access and a paperless County government	1.6%	6.5%	14.5%	48.4%	29.0%	3.97	0.92
Most of the department functions have been automated (ICT-based systems and applications) and this makes it office operations faster and accurate	4.8%	6.5%	11.3%	41.9%	35.5%	3.97	1.09
There exists a Local Area Networks (LAN) which provides connectivity across a range of offices ensuring easy sharing of information	9.7%	6.5%	8.1%	33.9%	41.9%	3.92	1.28

The study sought to find out whether there was presence of website and email servers in the departments that allowed employees to communicate easily through office emails. The results showed that 32.3% and 41.9% of the respondents agreed and strongly agreed with the statement. On the other hand 8.1% and 6.5% of the respondents strongly disagreed and disagreed with the statement. The study sought to establish whether there existed online based services that require access to Internet resulting in easy access and multiple access points (allowing online transactions). The study findings revealed that 45.2% and 29.0% of the respondents agreed and strongly agreed with the statement. On whether, ICT had allowed data management, where data is stored in databases enabling real-time access and a paperless County government, the results also showed that 48.4% and 29.0% agreed and strongly agreed while 1.6% and 6.5% strongly disagreed and disagreed respectively. This is in consonant with (Bekkers & Zouridis, 1999) that the speed of service delivery increases when one has a real-time access to databases located in other places.

The respondents were asked to indicate whether most of the department functions have been automated (ICT-based systems and applications) making office operations faster and accurate, the findings in this section showed that 41.9% and 35.5% of the respondents agreed that their department were fully automated which increased effectiveness and efficiency. Finally, the study sought to establish whether there existed a Local Area Networks (LAN) which provides connectivity across a range of offices ensuring easy sharing of information. The results also showed that 33.9% and 41.9% of the respondents agreed and strongly agreed respectively. The statement had a mean of 3.92 which further confirmed that majority of the respondents agreed. The descriptive findings implied that the county had the necessary ICT facilities required by the staff to carry out their daily responsibilities. The findings further implied that ICT facilities facilitated effective and efficient service delivery by employees. These findings concur with Norris (2001) who found out that the level of e-government or how ICT is used determines the efficiency of service delivery and further depends on the ICT facilities and tools used by the employees. Study findings agree with Bhatnagar (2000) who pointed out that ICT applications focused on automating the process of delivering services to citizens and improved transparency. The use of ICT can shorten queues and waiting times at the counters, improve accuracy in billing and accounts receivable and provide immediate proof of payments to citizens. The study used percentages, frequencies, mean and standard deviation to describe service delivery. Table 6 and Table 7 present the findings on extent of service delivery.

**Table 6: Results for Service Delivery**

	Option	Frequency	Percent (%)
Can the county government deliver services without computers/ICT in the present times and in the future	Yes	7	11.29
	No	55	88.71
	<b>Total</b>	<b>62</b>	<b>100</b>

The study asked the respondents whether county government could deliver services without ICT facilities in the present times and in the future. The findings presented showed that 88.71% of the respondents disagreed while 11.29% of the respondents agreed. These findings imply that majority of the respondents felt that ICT was a critical component in service delivery in the county government of Machakos.

**Table 7: Descriptive Results for Service Delivery**

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Mean	Std Dev
ICT has ensured quicker and cheaper delivery of services	8.1%	6.5%	9.7%	38.7%	37.1%	3.90	1.21
To some extent the implementation of ICT has led to quality and service improvement in the County	8.1%	3.2%	8.1%	38.7%	41.9%	4.03	1.17
Unlocking the value of ICT in the County has accelerated information dissemination and flow	4.8%	9.7%	4.8%	37.1%	43.5%	4.05	1.15
Aligning ICT with County government priorities is leading to better decision making processes	9.7%	9.7%	1.6%	32.3%	46.8%	3.97	1.33
I believe that ICT has enabled me to deliver services and information in a more convenient manner	9.7%	9.7%	6.5%	32.3%	41.9%	3.87	1.32

The study sought to establish whether ICT facilities and perceived benefits of ICT had ensured quicker and cheaper delivery of services, the findings presented in Table 7 showed that 38.7% and 37.1% of the respondents agreed and strongly agreed. The mean response for the statement was 3.90 which confirmed that majority of the respondents agreed and strongly agreed. The finding also showed that 41.9% and 38.7% of the respondents strongly agreed and agreed that to some extent the implementation of ICT had led to quality and service improvement in the County. On whether, unlocking the value of ICT in the County had accelerated information dissemination and flow, the findings indicated that 43.5% and 37.1% of the respondents strongly agreed and agreed respectively. This finding aligns with Yator and Shale (2014) who says that ICT brings about faster operations. The findings further showed that majority of the respondent as indicated by the mean of 3.97 and 3.87 agreed that aligning ICT with County government priorities was leading to better decision-making processes and that they believed that ICT facilities and perceived benefits of ICT had enabled them to deliver services and information in a more convenient manner.

The findings presented in this section implied that majority of the respondents agreed that service delivery could be improved by ICT and thus agreeing with Hall (2011) that ICT when used properly can be a tool that improves the services delivered. Results of Pearson Correlation analysis are shown below in table 8. According to Kothari (2011), Karl Pearson Correlation Coefficient is the most widely used method of measuring the degree of relationship between two variables. It ranges from -1 to +1. A correlation coefficient of -1 indicates a perfect negative correlation, 0 indicates no correlation while +1 indicates a perfect positive correlation. It tells a researcher the magnitude and direction of the relationship between two variables.

**Table 8: Correlation Matrix**

		Perceived Benefits of ICT		
			ICT Facilities	Service Delivery
Perceived Benefits of ICT	Pearson Correlation	1		
ICT Facilities	Pearson Correlation	0.430**	1	
Service Delivery	Pearson Correlation	0.544**	0.604**	1
	N	62	62	62

The results further showed that there was a strong, positive and significant association between perceived benefits of ICT and service delivery as shown by  $r=0.544$ . The correlation was significant at the significance level of 0.05. The findings implied that benefits of ICT enhanced service delivery. The findings of this study concur with Otieno and Omwenga (2015) who found that ICT is an instrument for transparency and accountability as far as public-sector responsibilities are concerned. The results also showed that there was a strong, positive and significant association between ICT facilities and service delivery as shown by  $r=0.604$ . The correlation was significant at the significance level of 0.05. The findings implied that increasing ICT facilities positively enhanced service delivery. These findings concur with Norris (2001) who found out that the level of e-government or how ICT is used determines the efficiency of service delivery and further depends on the ICT facilities and tools used by the employees. Similarly, the findings agrees with Bhatnagar (2000) has pointed out that ICT applications focus on automating the process of delivering services to citizens and it brings transparency.

The study adopted multiple regression analysis to test the relationship and the overall influence between the two independent variables and dependent variable. The results of regression analysis are presented in Table 9 to 10.

**Table 9: Model Summary**

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	0.711a	0.505	0.479	0.68306

a. Predictors: (Constant), ICT Training, Perceived Benefits, ICT Facilities

A multivariate regression model was conducted to test the joint relationship of all the independent variables and the dependent variable. The results indicate that  $R = 0.711$  and  $R\text{-squared} = 0.505$ . R value points that there is a strong association between Perceived Benefits of ICT, ICT Facilities and service delivery in County government of Machakos.  $R^2$  indicates that explanatory power of the independent variables was 0.505. This means that 50.5% of the variation in service delivery was explained by changes in the independent variables (Perceived Benefits of ICT, ICT Facilities) while 49.5% of the variation in service delivery was unexplained and it's a result of other variables not in the model.



**Table 10: ANOVA Results**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.588	3	9.196	19.710	0.000
	Residual	27.061	58	.467		
	Total	54.648	61			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Perceived Benefits, ICT Facilities

The findings of ANOVA presented in Table 10 indicated an F-statistics of 19.710 with a p-value of 0.000 which was less than significance level of 0.05. This implies that the two variables had significant influence on service delivery. The study hence concluded that the model used to link the independent variables to the dependent variable had a good fitness. The findings showed that Perceived Benefits of ICT and ICT Facilities were good predictor variables of service delivery in the county government of Machakos. The results of the coefficients of regression are shown in table 11 below. In the multivariate model, the coefficient for perceived benefits of ICT was  $\beta = 0.347$  which was also significantly different from 0 with a p-value= 0.005 which was less than 0.05. This revealed that there existed a significant positive relationship between perceived benefits of ICT and service delivery in county government of Machakos. The study concluded that perceived benefits of ICT positively and significantly influenced service delivery in county government of Machakos.

The findings of this study concur with Otieno and Omwenga (2015) who found that ICT is an instrument for transparency and accountability as far as public-sector responsibilities are concerned. The results further concur with Rainford (2009) who mentioned, "ICT is an important tool for improving delivery of government services, making government more transparent and accountable, broadening people participation, facilitating the sharing of information and knowledge among the people and integrating marginalized groups and deprived regions.

**Table 11: Coefficients Results**

	B	Std. Error	Beta	t	Sig.
(Constant)	0.431	0.48		0.898	0.373
Perceived Benefits of ICT	0.347	0.119	0.305	2.923	0.005
ICT Facilities	0.394	0.105	0.395	3.736	0.000

a Dependent Variable: Service Delivery

The optimized regression equation was established to be:

$$Y = 0.431 + 0.394X_1 + 0.347X_2 + \varepsilon$$

The study results showed that the coefficient for ICT facilities was  $\beta = 0.394$  which was also significantly different from 0 with a p-value= 0.000 which was less than 0.05. These findings also revealed that there is a significant positive relationship between ICT facilities and service delivery in county government of Machakos. The findings implied that increase in ICT facilities would lead to an increase of 0.394 units in service delivery in Machakos County. These findings concurs with Norris (2001) who found out that the level of e-government or how ICT is used determines the efficiency of service delivery and further depends on the ICT facilities and tools used by the employees. Similarly, the findings agrees with Bhatnagar (2000) has pointed out that ICT applications focus on automating the process of delivering services to citizens and it brings transparency.

#### IV. DISCUSSIONS

The study purposed to determine the effect of perceived benefits of ICT and the effect of ICT facilities on service delivery in Machakos County government. To achieve these objectives the study adopted both descriptive and inferential analysis which included correlation and regression analysis. The first objective of the study sought to determine the perceived benefits impelling the use of ICT in improving service delivery in Machakos County government. The perceived benefits the study focused on included transparency, accountability and efficiency. The findings of descriptive analysis implied that majority of the respondents agreed that ICT had many benefits in the work place that positively enhanced the quality service delivery in the county government of Machakos. The correlation results also showed that there was a strong, positive and significant association between perceived benefits of ICT and service delivery. These finding were confirmed

by the results of multivariate regression analysis which revealed that there is a significant positive relationship between perceived benefits of ICT and service delivery in county government of Machakos. This study therefore concluded that perceived benefits of ICT positively and significantly influences the service delivery in county government of Machakos.

The second objective of the study sought to establish the extent to which ICT facilities acquired are applied in improving public service delivery in Machakos County. The descriptive findings indicated that the county had the necessary ICT facilities required by the staff to carry out their daily responsibilities. The findings further implied that ICT facilities facilitate effective and efficient service delivery by employees. The results of correlation analysis showed that there existed a strong, positive and significant association between ICT facilities and service delivery. The findings implied that increasing ICT facilities positively enhanced service delivery. The result of regression analysis also revealed that there is a significant positive relationship between ICT facilities and service delivery in county government of Machakos. The findings implied that increase in ICT facilities would lead to an increase in service delivery in Machakos County.

## V. CONCLUSIONS

The study concluded that ICT facilities and perceived benefits played a significant role in ensuring delivery of quality services in public sector. The study concluded that ICT facilities made information sharing and activities coordination simpler, effective and efficient between various departments and between employees, reducing turnaround time improving service delivery. The study concluded that use of ICT in county government had many benefits which positively impacted on the service delivery such as transparency in the organization.

The study demonstrated that Organizations that were run using ICT facilities were easy to monitor and were more transparent. ICT facilities ensured that accountability of employees was achieved through tracking the activities of all the system users. The study further concluded that availability of ICT facilities to employees in the County government was a key component to ensuring high quality service delivery. The study established that employees needed ICT facilities such as quick and reliable internet, ICT-based systems and applications, data management systems to ensure that county staff works more efficiently and effectively. Without such ICT facilities employees would take much longer to carry out their responsibilities of service delivery.

## VI. RECOMMENDATION AND SUGGESTIONS

The study established that perceived benefits of ICT positively influenced the service delivery of County government of Machakos. Based on these findings, the study recommends that to ensure high quality service delivery, all the departmental heads should communicate the benefits of ICT knowledge in carrying the County responsibilities to all the employees in their department to influence them to acquire ICT skills. Such skills acquisition will improve service delivery in their departments. The study further recommends that County government of Machakos should come up with policies and mechanism to ensure that all employees are aware of all benefits of using ICT for improved service delivery.

Based on the critical role played by ICT facilities on service delivery, the study recommends that top leadership at the county government of Machakos should ensure that all the necessary ICT facilities are made available to employees at various levels to facilitate their service delivery. The management of the county government should conduct audit to establish ICT facilities needed in various departments to make quality service delivery possible. The current study focused on investigating the effect of ICT facilities and perceived benefits of ICT on service delivery in the County government of Machakos, Kenya. However, Kenya has 47 counties and therefore other studies should focus on other counties for comparison purposes. Further studies should also focus on other factors that affect service delivery in county government since this study established that ICT facilities and perceived benefits of ICT only accounted for 50.5% of the variation in service delivery among county governments in Kenya.

## REFERENCES

- [1] Abdullah, H. S., & Ahmad, A. (2001). A study of the use of Information Technology and Its Impact on Service Quality in the Malaysian Public sector. *Asian Review of public administration*, 13(1), Malaysia.
- [2] Abdullah, L. N. (2008). ICT: *The Agent of Transformation in Service Delivery Public Sector ICT Management Review (July- December)*, 2(2), 5.
- [3] Adegboyega O., Tomasz, J., Elsa, E., & Irshad, K. K. (2007). Human Capacity Development for e-Government .UNU-IIST Report No. 362.

**International Journal of Novel Research in Computer Science and Software Engineering**

 Vol. 5, Issue 3, pp: (7-22), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [4] Augus, A., Barker S., & Kandampully J. (2007). An exploratory study of service quality in the Malaysian public service sector, *International Journal of Quality & Reliability Management*, 24(2), 177-190.
- [5] Aichholzer, G., & Schmutzer R., (2000). Organizational challenges to the development of electronic government. OECD Public Management Committee & Public Management Service. Conference Paper. January 2000. DOI: 10.1109/DEXA.2000.875054.
- [6] Ambali, A. (2010). E-government in public sector: policy Implications and recommendations for policy-Makers, *Research Journal of International Studies, Special Issue*, (17), 133-145.
- [7] Ajzen, I., & Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior* Englewood Cliffs, NJ: Prentice-Hall, Inc.
- [8] Ajzen, I. (2010). The Theory of Planned Behavior, Retrieved from <http://www.people.umass.edu/aizen/tpb.html>
- [9] Baker, P. M. A., & Bellordre C. (2004). Adoption of information and communication technologies: key policy issues, barriers and opportunities for people with disabilities. 37<sup>th</sup> Hawaii International Conference on System Sciences, 2004, Hawaii.
- [10] Bagozzi, R. P., Davis, F. D., & Warshaw, P. R. (1992). Development and Test of a Theory of Technological Learning and Usage, *Human Relations* (45)7, 660–686.
- [11] Benbasat, I., & Barki, H. (2007). Quo Vadis, TAM. *Journal of the association for information systems*, 8, 211-218.
- [12] Bekkers, V. & S. Zouridis, (1999). Electronic service delivery in public administration: some trends and issues. *International Review of Administrative Sciences*, 65(2), 183-195.
- [13] Bhatnagar, S. (2000). Social Implications of Information and Communication Technology in Developing Countries: Lessons from Asian Success Stories. *The Electronic journal on Information Systems in Developing Countries*, 1(4), 1-9.
- [14] Brown, M. M., & Brudney, J. L. (2001). Achieving Advanced Electronic Government Services: An Examination of Obstacles and Implications from an International Perspective. Paper presented and the Public Management Research Conference, Bloomington.
- [15] Brown, D. (2005). Electronic Government and Public Administration. *International Review of Administrative Sciences*, 71(2), 241-254.
- [16] Byars, L. L., & Rue, L.W., (2006). Human Resource Management; New York: The McGraw-Hill.
- [17] Cook, T.D., & Campbell, D.T. (2002). The design and conduct of quasi experiments and true experiments and field surveys. Hand book of industrial and organizational psychology, MD Dunnet, Chicago, 225-227.
- [18] Cooper, D., & Schindler, S. (2014). Business Research Methods. New York: McGraw-Hill Irwin.
- [19] Cochran, W. G. (1977). Sampling Techniques (3rd ed.). New York: John Wiley & Sons.
- [20] Cox, J., & Dale B. G. (2002). Key quality factors in web site design and use: An examination, *International Journal of Quality and Reliability Management*, 19(7), 862-88.
- [21] Chen, Y. C., & Dimitrova, D.V. (2006). Electronic government and online engagement: citizen interaction with government via web portals. *International Journal of Electronic Government Research*, 2(1), 54-76.
- [22] Chen, H., (2003). Digital government: Technologies and practices, *Decision Support Systems*, 34(3), 223-7.
- [23] Creswell, J. W. (2011). Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed.). Pearson.
- [24] Dabholkar, P. A., & Bagozzi, R. P., (2002). An attitudinal model of technology-based self-service: Moderating effects of consumer traits and situational factors, *Journal of the Academy of Marketing Science*, 30(3), 184- 201.

**International Journal of Novel Research in Computer Science and Software Engineering**

 Vol. 5, Issue 3, pp: (7-22), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [25] Dancey, C. P., & Reidy, J. (2011). *Statistics without maths for psychology: Using SPSS for Windows (3<sup>rd</sup> Ed.)*. Harlow, England: Pearson/Prentice Hall.
- [26] Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly (13)*3, 319–342.
- [27] EGBULE, A. C. S., IGWEH, F. K., & OGBE, L. O. A. (2016). The Use of ICT on Employee Service Delivery (A Case Study of Federal Polytechnic Oko). *Inv. J. Edu. Gen. St.* 2(1), 1-8
- [28] E-Government: Digital Agenda scoreboard/ European Commission, 2015.
- [29] EIU, The e-readiness rankings, economist intelligence unit, 2003, Retrieved from [http://graphics.eiu.com/files/ad\\_pdfs/eReady\\_2003.pdf](http://graphics.eiu.com/files/ad_pdfs/eReady_2003.pdf).
- [30] Fincham, E. J. (2008). Response Rates. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles>
- [31] Florino, A. (2000). Does the Invisible Hand Need a Transparent Glove?. Proceedings of the 11th Annual World Bank Conference on Development Economics (Washington, DC: The World Bank, 2000).
- [32] Fishbein, M., & Ajzen, I. (1975) *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Reading, MA: Addison-Wesley.
- [33] Fountain, J. (2007). Interview by Michael J. Keegan - Implementing Cross-Agency Collaboration: A Guide for Federal Managers with Dr. Jane Fountain, IBM Center for the Business of Government.
- [34] Gay, L. R., & Diehl, P. L. (1992). *Research Methods for Business and Management*. In Hill, R. (1998). “What Sample Size is ‘Enough’ in Internet Survey Research”? *Interpersonal Computing and Technology: An electronic Journal for the 21<sup>st</sup> Century*. Retrieved from <http://www.emoderators.com/ipct-j/1998/n3-4/hill.html>.
- [35] Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 4, 597-607.
- [36] Goad, T. (2001), *Surfing on the Internet: Delivering Effective Training*, San Diego, CA: University Associates.
- [37] Gordon, J. (2010). *Soup: A Recipe to Nourish Your Team and Culture*. Hoboken, NJ: Wiley.
- [38] Gikenye, W. (2014). The status and development of informal sector and ICT access in Kenya. *Inkanyiso: Journal of Humanities and Social Sciences*.
- [39] George, O., Florence E., & Erick A. (2006). Mainstreaming ICT, research perspectives from Kenya.
- [40] Gupta, B., Subhasish, Dasgupta, & Gupta, A. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The journal of strategic information system*, 17(2), 140-154.
- [41] Gillwald, A. (2010). The Poverty of ICT Policy, Research, and Practice in Africa. *Information Technologies & International Development*, 6, 79–88.
- [42] Haliso, Y. (2011). Factors affecting information and communication technologies (ICTs) use by academic librarians in Southwestern Nigeria. *Library of Philosophy and Practice* (Retrieved from <http://unllib.unl.edu/LPP/>)
- [43] Hall, G. (2010). e-Governmentality: on electronic administration in local government, *Journal of e-Government*, 7(1), 55-64.
- [44] Haron, K. (2005). A Survey of the Extent of Outsourcing of Human Resource Management Functions by the Public Service in Kenya. *IOSR Journal of Business and Management*, 2(3), 4.
- [45] Holder, M., (2012). Using ICT to Enhance Business and Competitiveness. Retrieved from <http://businessbarbados.com/industries/ict-communications/ict-enhance-business-competitiveness/>
- [46] Heeks, R., (2001). *Reinventing Government in the Information Age*, Routledge: London.
- [47] Heeks, R. (2006). *Implementing and Managing e-Government. An International text*. Sage Publications, London

- [48] International Bank for Reconstruction and Development - The World Bank. (2005). *Public Sector Governance and Accountability Series. Public Service Delivery* (Edited by Anwar Shah). USA: Washington DC. ISBN: 0-8213-6140-6. <http://siteresources.worldbank.org/PSGLP/Resources/PublicServiceDelivery.pdf>
- [49] IT Governance Institute, (2003). Board briefing on IT governance. Retrieved from <http://www.itgi.org>
- [50] International Telecommunication Union, (2015). ICT Facts and Figures, 2015, ITU
- [51] ICT Authority, (2015). Machakos County Government, *ICT Roadmap (2015-2020)*. Retrieved from <http://icta.go.ke/machakos-road-map>
- [52] Inyang, B. J. (2008). Human resource capacity building: an imperative for effective performance in the public service. *MRL Journal*, 2(1), 50-54.
- [53] Jones, S., Hackney R., & Irani Z. (2007). Towards e-government transformation: Conceptualizing 'citizen engagement' a research note, *Transforming Government: People, Process and Policy, Emerald Group Publishing Limited*, 12,145-152.
- [54] Kauzya, J. (2011). *A holistic model for managing ethnic diversity in the public service in Africa*. Paper presented at United Nations Experts Group Meeting on Managing Diversity in the Civil Service. New York: United Nations Headquarters, 1-11. Retrieved from <http://www.emeraldinsight.com/0951-3558.html>
- [55] Karagozoglu, N., & Lindell, M. (2004). Electronic commerce strategy, operations, and performance in small and medium-sized enterprises. *Journal of Small Business and Enterprise Development*, 11(3), 290-301.
- [56] Kenya National Bureau of Statistics (KNBS) & Communications Authority of Kenya (CA), 2016. Enterprise ICT Survey.
- [57] Keong, M.L., Ramayah T., Sherah K., & Chiun L.M. (2012). Explaining intention to use an enterprise resource planning (ERP) system: an extension of the UTAUT model. *Business Strategy Series*, 13(4), 173-180.
- [58] Kotler, P., & Armstrong, G. (2013). Principles of Marketing (15th Ed.). Prentice Hall, EAN-13: 978-0133084047, ISBN -0133084043.
- [59] Koning, J. D., & Gelderblom, A. (2006). ICT and older workers: unwrinkled relationship. *International Journal of man power*, 27(5), 467-490.
- [60] Kothari, C. R. (2011). *Research Methodology: Methods and Techniques*. (3rd ed). New Delhi. New Age International (P) Ltd.
- [61] Kothari, C. & Garg, G. (2014). *Research methodology Methods and Techniques*. (3rd ed.) New Delhi: New Age International (P) Ltd.
- [62] Kombo, D., & Tromp, D. (2006). *Proposal and Thesis Writing: An Introduction*. (1st ed.). Nairobi: Paulines Publications Africa.
- [63] Kamarck, E.C. (2007). End of Government...as We Know It: Making Public Policy Work. Lynne Rienner Publishers, EAN-13: 978-1588264695, ISBN -1588264696.
- [64] Kumar, R., & Best, M. L. (2006), Impact and sustainability of e-government services in developing countries: Lessons learned from tamilnadu, India. *The Information Society*, 22(1), 1-12.
- [65] Lewis, K. K. (1999). Trying to explain home bias in equities and consumption. *Journal of economic literature*, 37(2), 571-608.
- [66] Machakos County Development Profile, May, 2013. RoK, Ministry of Devolution and planning.
- [67] Marcelle, G. (2000). Gender, Justice and ICTs. Retrieved from <http://www.un.org/womenwatch/daw/csw/marcelle.htm>



- [68] Malango, L. (2013). Impact of Privatization on Service Delivery; An Assessment of the Kenya Railway Corporation Concession (2006-2012). *Journal of Economics and International Business Research*, 1(1), 32–39.
- [69] Mathur, S.K. (2009). Financial Analysis of the ICT Industry: A Regulatory Perspective. *Journal of Infrastructure Development*, 1(1), 17–43.
- [70] Mutsostso, S. (2010). Relationship Between Capacity Building and Employee Productivity on Performance of Commercial Banks in Kenya, *African Journal of History and Culture*, 2(5), 73-78.
- [71] Michael A. (2007). ICT as A Key Factor to Service Delivery and Growth in the South African Economy. Retrieved from [http://www.southafrica.info/about/science/ictdelivery050707.htm#.V2\\_hejXrOkI#ixzz4Ch80eUMw](http://www.southafrica.info/about/science/ictdelivery050707.htm#.V2_hejXrOkI#ixzz4Ch80eUMw)
- [72] Mitra, R. K., & Gupta M. P. (2007). Analysis of issues of e-government in Indian police, *Electronic Government, an International Journal*, 4(1), 97-125.
- [73] Mitulla, S. M. (2008). Comparison of Sub-Saharan Africa’s e-Government Status with Developed and Transitional Nations. *Information Management & Computer Security*, 16(3), 235–250.
- [74] Muthaura, F. K. (2010). *The Role of Kenya Public Service in a Changing Global Environment: Opportunities and Challenges – What Is Working and What Is Not?*
- [75] Mugenda, A. G. (2013). *Social Science Research: Theory and Practice*: Nairobi. Applied Research and Training Services.
- [76] Mugenda, M., & Mugenda, G. (2012). *Research Methods .Quantitative and Qualitative Approaches*. Nairobi Acts Press.
- [77] Mulwa, J. M. (2015). Factors Influencing Adoption of ICT in Service Delivery by County Governments in Kenya: A Case of Kitui County. *International Journal for Management Science and Technology*, 2(3), 47–54.
- [78] Nassiuma, D. K. (2000). *Survey and Sampling: Theory and methods*. Nairobi: University of Nairobi Press.
- [79] Njuru, W. J. (2011). Perspectives of Kenyan Students in the United States on E-Government and Citizen Participation. *Journal of Global Affairs and Public Policy*, 1(1).
- [80] Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. Cambridge: Cambridge University Press.
- [81] Niamh, K. (2010). More than writing on a wall: Evaluating the Role that Code of Ethics Play in Securing Accountability of Public Sector Decision-Makers. *The Australian Journal Of Public Administration*, 66(1), 112-120.
- [82] Ochieng’, A. (2009). An investigation on the relationship between information technology and productivity – a case study of national oil corporation of Kenya. *An unpublished MBA project*, UoN.
- [83] Ochieng’. L. (2014, July 2). Sh17bn to fund ICT projects in Counties, Daily Nation. Retrieved from <http://www.nation.co.ke/business/Sh17bn-to-fund-ICT-projects-in-counties/-/996/2369764/-/131bpwc/-/index.html>
- [84] OECD, (2007). Organisation for Economic Co-operation and Development. Annual Report. Policy Brief.
- [85] Otieno, I., & Omwenga, E. (2015). Citizen-centric critical success factors for the implementation of e-government: A case study of Kenya Huduma Centres. *2015 IST-Africa Conference, IST-Africa*, 7(2), 102–109.
- [86] Ougo, J. (2010). Information and Communication Technology as a Strategic Orientation for Service Delivery in the Office of the Vice President and Ministry of Home Affairs. *An unpublished MBA project*, UoN.
- [87] Orodho, J.A. (2009). *Essentials of educational & social science research methods*. Nairobi: Masola Publishers.
- [88] Olasunmi, O.O., Ayoola, T., & Kareem, M.T. (2012). Evaluation of ICT use among women Entrepreneurs in the Nigerian government industry. *International Journal of Management and Business Studies*, 3(2), 43-54.

**International Journal of Novel Research in Computer Science and Software Engineering**

 Vol. 5, Issue 3, pp: (7-22), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [89] Pathak, R. D., Belwal, R., Singh, G., Naz, R., Smith, R. F. I., & Al-Zoubi, K. (2012). Citizens' Perceptions of Corruption and e-Governance in Jordan, Ethiopia and Fiji - The Need for a Marketing Approach.
- [90] Parasuraman, A., & Grewal D. (2000). The impact of technology on the quality-value-loyalty chain: A research agenda, *Journal of Academy of Marketing Science*, 28(1), 168-74.
- [91] Parasuraman, A., Zeithaml V. A., & Malhotra, A. (2005). ES-QUAL a multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213-233.
- [92] Pathak, R. D., Naz, R., Singh, G. & Smith, R.F. (2010). ICT for Improved Public Service Delivery in Papua New Guinea Governance. *JOAAG*, 5(1).
- [93] Ray, S. (2012). Reinforcing accountability in public services: an ICT enabled framework. *Transforming Government: People, Process and Policy*, 6(2), 135 – 148.
- [94] Rainford, S. (2009). E-Sri Lanka: An Integrated Approach to e-Government Case Study. ICT Agency of Sri Lanka, Sri Lanka.
- [95] Ritchie, B., & Brindley, C. (2005). ICT Adoption by SMEs: Implications for Relationships and Management. *New Technology, Work and Employment*, 20(3), 205–217.
- [96] Rodriguez F., & Wilson, E. (2000). Are Poor Countries Losing the Information Revolution? *infoDev Working Paper*, (Washington DC: World Bank).
- [97] RoK. 2010. Constitution of Kenya, Government of Kenya, Nairobi Kenya.
- [98] Sambuu, Y. (2008). *Proceedings of the 2nd International Conference on Theory and Practice of Electronic Governance* 474-477 ACM New York, NY, USA.
- [99] Silverman, D. (2000). *Doing qualitative research: A practical handbook*. Thousand Oaks, CA: Sage.
- [100] Settles, A. (2005). What skills are needed in an e-world: e-Government skills and training programs for the public sector. *Practicing e-Government: a global perspective*. Edited by Mehdi Khosrow-pour. OECD e-Government project.
- [101] Seifert, W., & Bonham, G. (2003). The Transformative Potential of E-Government in Transitional Democracies. *Public Management. Electronic journal*, 2(22).
- [102] Sekaran, U. & Bougie, R. (2011). *Research Methods for Business : A Skill Building Approach*. 5th Edition. New Dehli: Aggarwal printing press,
- [103] Toshifumi, N., & Himanshu, T. (2004). *E-Governance Initiatives in India: Citizens Would Rather Be Online Than In-Line*. Retrieved From [http://www.ps.ritsumei.ac.jp/assoc/policy\\_science/121/12101.pdf](http://www.ps.ritsumei.ac.jp/assoc/policy_science/121/12101.pdf)
- [104] Thomas, C., Samuels, D., Kanu, M., & Mbarika, V. W. (2010). Facilitating Better Governance through E-Government Initiatives: Successful Cases in Sub-Saharan Africa. *International Journal of Business & Public Administration*, 7(1), 71–85.
- [105] The United Nations Public Administration Network. (2012). Government value paradigms bureaucracy, new public management, and E-government. *Communications of the Association for Information Systems*, 27, 45-64. Retrieved from [www.UPAN.org.analytical-report.asp](http://www.UPAN.org.analytical-report.asp)
- [106] UNDP Report (2007). Pro-poor public service delivery with ICTs-making local e-governance work towards achieving the millennium development goals. APDIP e-note.
- [107] United Nations (2012). E-Government Survey E-Government for the People. Printed at the United Nations, New York, ISBN: 978-92-1-123190-8.
- [108] United Nations, 2016. E-Government Survey. Retrieved from <http://workspace.unpan.org/sites/Internet/Documents/UNPAN97453.pdf>

**International Journal of Novel Research in Computer Science and Software Engineering**

 Vol. 5, Issue 3, pp: (7-22), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [109] Upagade, V. & Shende, A. (2012). *Research Methodology*. S. Chand & Company Ltd. New Delhi, India
- [110] U.N. (2007). UN-S&T, Information Economy Report 2007-2008: Science and Technology for Development – The New Paradigm of ICT. Prepared by the UNCTAD Secretariat. Geneva: United Nations. Retrieved from [http://www.unctad.org/en/docs/sdteecb20071\\_en.pdf](http://www.unctad.org/en/docs/sdteecb20071_en.pdf)
- [111] UN. (2014). United Nations E-government Survey 2014: e-government for the future we want. New York: United Nations.
- [112] United Nations Department of Economic and Social Affairs (2005). *United Nations Global e-Government Readiness Report 2005: From e-Government to e-Inclusion*. Retrieved from <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf>.
- [113] Venkatesh, V., Morris, M.G., Davis G.B. & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- [114] World Bank (2001) Issue Note: E-Government and the World Bank. November 5
- [115] World Bank Group, 2013. *World Bank Group ICT strategy 2012-2015*. <http://www.worldbank.org>
- [116] Woods, S. (2010). Governing IT in the public sector. Retrieved from <http://www.itnewsafrika.com/2010/08/governing-it-in-the-public-sector/>
- [117] Weill, P., & Ross, J. W. (2004). IT Governance on One Page. MIT Sloan Working Paper No. 4517-04; CIS Research Working Paper No. 349. Retrieved from <https://ssrn.com/abstract=664612> or <http://dx.doi.org/10.2139/ssrn.664612>
- [118] Waema, T. M. (2011). Summary of Findings and e-Local Governance Roadmap. In E. O. Adera (Ed.), *Local Governance and ICTs in Africa: Case Studies and Guidelines for Implementation and Evaluation* (280–313). IDRC: Pambazuka Press.
- [119] Westfall, J. M., Fagnan, L. J., Handley, M. A., Salsberg, J., McGinnis, P., Zittleman, L., & Macaulay, A. C. (2009). Practice-based research is community engagement. *J Am Board Fam Med*, 22, 423-427.
- [120] Yazici, H. J. (2002). The role of communication in organizational change: an empirical investigation. *Information and Management*, 39, 539-540.
- [121] Yator, R., & Shale, N. I. (2014). Role of information communication technology on service delivery at the ministry of interior and coordination of national government: A case of immigration service. *International Journal of Social Sciences and Entrepreneurship*, 1(12), 863-876.
- [122] Zhang, P., Aikman, S., & Sun, H. (2008). Two types of attitudes in ICT acceptance and use. *International Journal of Human Interaction*, 24(7), 628-648.
- [123] Zikmund, G.W., Babin, B.J., Carr, C.J. & Griffin, M.(2010). *Business Research Methods* 8th ed. South-Western, Cengage Learning.