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

1MBITHI BONIFACE KIOKO, 2DR. SAMSON NYAN'GAU,
3DR. WAWERU KAMAKU

1,2,3JOMO 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 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>
<thead>
<tr>
<th>Group</th>
<th>Target population</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public service</td>
<td>50</td>
<td>6.67</td>
</tr>
<tr>
<td>Agriculture</td>
<td>70</td>
<td>8.48</td>
</tr>
<tr>
<td>Trade</td>
<td>65</td>
<td>7.88</td>
</tr>
<tr>
<td>Transport and roads</td>
<td>40</td>
<td>5.45</td>
</tr>
<tr>
<td>Water and irrigation</td>
<td>75</td>
<td>9.1</td>
</tr>
<tr>
<td>Health</td>
<td>90</td>
<td>10.9</td>
</tr>
<tr>
<td>Decentralized units</td>
<td>60</td>
<td>7.27</td>
</tr>
<tr>
<td>Education</td>
<td>100</td>
<td>12.73</td>
</tr>
<tr>
<td>Tourism and culture</td>
<td>60</td>
<td>7.27</td>
</tr>
<tr>
<td>Lands and urban development</td>
<td>80</td>
<td>9.7</td>
</tr>
<tr>
<td>Finance and revenue</td>
<td>110</td>
<td>14.55</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>800</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

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 weather 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:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon \]

Where:

- \( Y \) = Service Delivery
- \( \beta_0 \) = Constant Term,
- \( \beta_i \) = Perceived Benefits of ICT use
- \( \beta_2 \) = Availability of ICT Facilities

In the model, \( \beta 0 \) = was the constant term while the coefficients \( \beta_i \) = 1……..2 were used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables \( \beta_1 \) and \( \beta_2 \). \( \varepsilon \) 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
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

<table>
<thead>
<tr>
<th></th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Benefits of ICT Use</td>
<td>5</td>
<td>0.891</td>
<td>Accepted</td>
</tr>
<tr>
<td>ICT Facilities Availability</td>
<td>5</td>
<td>0.871</td>
<td>Accepted</td>
</tr>
<tr>
<td>Service Delivery</td>
<td>5</td>
<td>0.723</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

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

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

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

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>
<thead>
<tr>
<th>Category</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is presence of website and email servers in this department that allows us to communicate easily through our office emails</td>
<td>8.1%</td>
<td>6.5%</td>
<td>11.3%</td>
<td>32.3%</td>
<td>41.9%</td>
<td>3.94</td>
<td>1.24</td>
</tr>
<tr>
<td>There exist online based services that require access to Internet resulting in easy access and multiple access points (allowing online transactions)</td>
<td>9.7%</td>
<td>8.1%</td>
<td>8.1%</td>
<td>45.2%</td>
<td>29.0%</td>
<td>3.76</td>
<td>1.24</td>
</tr>
<tr>
<td>ICT has allowed data management, where data is stored in databases enabling real-time access and a paperless County government</td>
<td>1.6%</td>
<td>6.5%</td>
<td>14.5%</td>
<td>48.4%</td>
<td>29.0%</td>
<td>3.97</td>
<td>0.92</td>
</tr>
<tr>
<td>Most of the department functions have been automated (ICT-based systems and applications) and this makes it office operations faster and accurate</td>
<td>4.8%</td>
<td>6.5%</td>
<td>11.3%</td>
<td>41.9%</td>
<td>35.5%</td>
<td>3.97</td>
<td>1.09</td>
</tr>
<tr>
<td>There exists a Local Area Networks (LAN) which provides connectivity across a range of offices ensuring easy sharing of information</td>
<td>9.7%</td>
<td>6.5%</td>
<td>8.1%</td>
<td>33.9%</td>
<td>41.9%</td>
<td>3.92</td>
<td>1.28</td>
</tr>
</tbody>
</table>
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 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>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>11.29</td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>88.71</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>100</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can the county government deliver services without computers/ICT in the present times and in the future</td>
<td>Yes</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 7: Descriptive Results for Service Delivery

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT has ensured quicker and cheaper delivery of services</td>
<td>8.1%</td>
<td>6.5%</td>
<td>9.7%</td>
<td>38.7%</td>
<td>37.1%</td>
<td>3.90</td>
<td>1.21</td>
</tr>
<tr>
<td>To some extend the implementation of ICT has led to quality and service improvement in the County</td>
<td>8.1%</td>
<td>3.2%</td>
<td>8.1%</td>
<td>38.7%</td>
<td>41.9%</td>
<td>4.03</td>
<td>1.17</td>
</tr>
<tr>
<td>Unlocking the value of ICT in the County has accelerated information dissemination and flow</td>
<td>4.8%</td>
<td>9.7%</td>
<td>4.8%</td>
<td>37.1%</td>
<td>43.5%</td>
<td>4.05</td>
<td>1.15</td>
</tr>
<tr>
<td>Aligning ICT with County government priorities is leading to better decision making processes</td>
<td>9.7%</td>
<td>9.7%</td>
<td>1.6%</td>
<td>32.3%</td>
<td>46.8%</td>
<td>3.97</td>
<td>1.33</td>
</tr>
<tr>
<td>I believe that ICT has enabled me to deliver services and information in a more convenient manner</td>
<td>9.7%</td>
<td>9.7%</td>
<td>6.5%</td>
<td>32.3%</td>
<td>41.9%</td>
<td>3.87</td>
<td>1.32</td>
</tr>
</tbody>
</table>
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 extend 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>
<thead>
<tr>
<th>Table 8: Correlation Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived Benefits of ICT</strong></td>
</tr>
<tr>
<td><strong>Perceived Benefits of ICT</strong></td>
</tr>
<tr>
<td><strong>ICT Facilities</strong></td>
</tr>
<tr>
<td><strong>Service Delivery</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Table 9: Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

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-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. R² 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

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>27.588</td>
<td>3</td>
<td>9.196</td>
<td>19.710</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>27.061</td>
<td>58</td>
<td>.467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54.648</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.431</td>
<td>0.48</td>
<td>0.898</td>
<td>0.373</td>
<td></td>
</tr>
<tr>
<td>Perceived Benefits of ICT</td>
<td>0.347</td>
<td>0.119</td>
<td>0.305</td>
<td>2.923</td>
<td>0.005</td>
</tr>
<tr>
<td>ICT Facilities</td>
<td>0.394</td>
<td>0.105</td>
<td>0.395</td>
<td>3.736</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The optimized regression equation was established to be:

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

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= 0.005 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


